



Comparison of Physician Implicit Racial Bias Toward Adults Versus Children

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ABSTRACT

BACKGROUND AND OBJECTIVES: The general population and most physicians have implicit racial bias against black adults. Pediatricians also have implicit bias against black adults, albeit less than other specialties. There is no published research on the implicit racial attitudes of pediatricians or other physicians toward children. Our objectives were to compare implicit racial bias toward adults versus children among resident physicians working in a pediatric emergency department, and to assess whether bias varied by specialty (pediatrics, emergency medicine, or other), gender, race, age, and year of training.

METHODS: We measured implicit racial bias of residents before a pediatric emergency department shift using the Adult and Child Race Implicit Association Tests (IATs). Generalized linear models compared Adult and Child IAT scores and determined the association of participant demographics with Adult and Child IAT scores.

RESULTS: Among 91 residents, we found moderate pro-white/anti-black bias on both the Adult (mean = 0.49, standard

deviation = 0.34) and Child Race IAT (mean = 0.55, standard deviation = 0.37). There was no significant difference between Adult and Child Race IAT scores (difference = 0.06, $P = .15$). Implicit bias was not associated with resident demographic characteristics, including specialty.

CONCLUSIONS: This is the first study demonstrating that resident physicians have implicit racial bias against black children, similar to levels of bias against black adults. Bias in our study did not vary by resident demographic characteristics, including specialty, suggesting that pediatric residents are as susceptible as other physicians to implicit bias. Future studies are needed to explore how physicians' implicit attitudes toward parents and children may impact inequities in pediatric health care.

KEYWORDS: implicit bias; pediatric health care disparities; physician implicit attitudes; racial bias; racial disparities

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WHAT'S NEW

Physicians have similar levels of implicit racial bias toward children and adults. With growing evidence of pediatric health care disparities, it is important to explore physicians' implicit attitudes toward both parents and their children, which may impact health care equity.

factors that contribute to inequities in the care and outcomes of children.

Implicit biases are unconscious attitudes and beliefs that may influence behaviors such as nonverbal communication, physician perceptions and clinical assessments about patients, and decisions about patient management.² The Implicit Association Test (IAT) is a validated and reliable tool that has been used to measure implicit racial bias in hundreds of studies across a range of participants.^{3–5} Research in the general population shows that most Americans have an implicit pro-white/anti-black bias.^{5,6} Research conducted on over 4000 health care students, trainees, and attending physicians using the Adult Race IAT demonstrates that most health care providers also have pro-white/anti-black implicit racial bias, similar to the general population.^{7–18} While studies show that

ACHIEVING HEALTH EQUITY is a universal principle of the American Academy of Pediatrics. Yet a large body of research has documented that racial/ethnic disparities in pediatric health care are “quite extensive, pervasive, and persistent.”¹ Investigating attitudes that physicians have toward black children, including implicitly activated attitudes, is important to advance our understanding of

pediatricians are among those who have implicit bias against black adults,^{8,19} one study found lower levels of bias among pediatricians compared to other physicians or the general population.⁸

One limitation of previous research investigating racial bias among pediatricians and other health care providers who care for children is that it has largely been limited to the use of adult specific IATs, which does not allow assessment of racial bias toward children. The implicit racial attitudes that physicians, including pediatricians, have toward black children have not been established. The Child Race IAT uses images of black and white children and can therefore assess implicitly activated racial attitudes that individuals have toward children.²⁰

The primary objective of this study was to compare differences in implicit racial attitudes toward adults versus children among residents caring for children in a pediatric emergency department (ED). The secondary objective was to examine whether levels of bias toward adults or children vary by resident demographic characteristics, including race, age, specialty, gender, and training year. We hypothesized that residents would have lower levels of bias on the Child Race IAT compared to the Adult Race IAT. On the basis of previous research, we further hypothesized that Adult and Child Race IAT scores would be lower among pediatric residents (versus residents of other specialties) and female residents (versus male).^{8,9}

METHODS

SETTING, PARTICIPANTS, AND DATA COLLECTION

We used computer-based instruments to investigate the implicit racial bias of resident physicians working in a pediatric ED. We chose to focus our investigation on the ED because it is a setting characterized by high patient acuity, time pressure, workflow interruptions, patient handoffs, high patient load, and a lack of established doctor–patient relationships. These characteristics may make providers working in the ED more prone to the use of cognitive heuristics, such as implicit racial bias. This was a planned secondary analysis of data from an original study examining the impact of cognitive stressors during an ED shift on levels of physician implicit bias.¹⁹ We collected data for the original study from 91 of 106 residents rotating in the ED between April and June 2013. The study was conducted in an urban academic pediatric ED with over 70,000 annual visits, of which 61.5% involve patients who are non-Hispanic white, 33.5% non-Hispanic black, 0.9% Asian, and 0.6% Hispanic. The study site trains over 200 pediatric, emergency medicine, family practice, anesthesia, and transitional year residents from 8 different training programs.

Residents completed electronic instruments assessing demographic characteristics (race/ethnicity, age, gender, specialty, training year) and implicit racial bias using both the Adult and Child Race IAT. To meet the objectives of the original study, residents working in the ED completed both pre- and post-shift instruments, and were

randomized to complete their first assessment either before (pre-shift) or after (post-shift) a scheduled shift. The pre-shift IAT scores were the first assessments for 47 residents (52%), and second assessments for 44 residents (48%). This analysis is limited to pre-shift Adult and Child IAT scores for all 91 residents. This study was approved by the university's institutional review board.

STUDY MEASURES

DEMOGRAPHIC CHARACTERISTICS

Residents self-reported their race (response options included American Indian/Alaska Native, Asian, Native Hawaiian or other Pacific Islander, black, white, more than one race—black/white, more than one race—other, and other race), ethnicity (Hispanic or Latino, not Hispanic or Latino, or unknown), age, gender (male or female), specialty, and training year.

IMPLICIT RACIAL BIAS

We used the Adult and Child Race IATs to assess implicit bias.^{3,5,6,21–23} Details about the general IAT procedures, scoring, and psychometric properties have been published.^{5,6,21,23} Briefly, the IAT requires participants to complete randomized blocks of trials in which they categorize pictures of black and white faces (Figs. 1 and 2) while simultaneously categorizing good and bad words. The IAT measures the strength of association between the category of faces (black, white) and the category of words (good, bad) using response latency time and frequency of errors. Participants who categorize white faces (adult or child) more quickly and with fewer errors when they are paired with good (vs. bad) words have an implicit pro-white/anti-black bias. The IAT is a continuous measure ranging from -2 to $+2$. IATs are scored using the D algorithm, with values ranging from -0.15 to 0.15 indicating no racial bias; 0.16 to 0.35 , slight pro-white bias; 0.36 to 0.65 , moderate pro-white bias; and >0.65 , strong pro-white bias.²⁴ Negative scores indicate pro-black bias of similar magnitudes. IAT demonstrations can be found online (<https://implicit.harvard.edu/implicit/>).

The IAT is a well-validated and reliable tool that has been used in hundreds of studies across a range of disciplines,^{3–5} including health care.^{7–18} For the Child Race IAT, adult facial images (Fig. 1) are replaced with images of black and white children (Fig. 2), but otherwise uses standard IAT procedures.^{5,20,25} Although there has been limited published research using the Child Race IAT, between 2001 and 2004, it was taken by 28,826 visitors to publicly available Web sites featuring 17 different IATs.⁵ Data on the Child Race IAT reveal strong and robust associations consistent with findings on the Adult Race IAT.⁵

STATISTICAL ANALYSES

Descriptive statistics were used to summarize resident demographic characteristics. IATs were scored and categorized using published guidelines.²⁴ Linear models were used to analyze Adult Race, Child Race, and Difference

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