

Does Unconscious/Implicit Bias Affect Treatment Decisions by Physicians?

Green AR, Carney DR, Pallin DJ, Ngo LH, Raymond KL, Iezzoni L, Banaji MR. Implicit bias among physicians and its prediction of thrombolysis decisions for black and white patients. *J Gen Intern Med.* 2007;22:1231-1238, 1231-1232.

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Physicians are well educated professionals who routinely engage in complex decision-making that impact the lives patients and their families. Many professionals accept that they may hold some unconscious or implicit biases or preferences. However, they also assume that when they make complex decisions and take plenty of time to think them through, they are able to weed out any bias and make the decisions soundly on the facts. In short, many professionals assume that intelligent, well-educated people can use their intellect to overcome implicit bias and make important complex decisions fairly.

Unfortunately, the opposite may be true. Implicit bias, as measured by the Race Implicit Association Test (IAT),¹ can have a profound effect on decisions made by well-meaning, caring, and committed physicians. Even physicians with a high value for fairness and high-quality patient care can significantly be affected by implicit bias.

A study conducted at Harvard University showed that implicit bias can predict how aggressively physicians treat African American patients in comparison with White patients. A group of researchers presented 220 physicians in four medical care facilities in Boston with a clinical case vignette. Half of the physicians were shown a photo of an African American patient and the other half were shown a picture of a White patient as they read the vignette. Except for the race of the patient, the information provided in the vignette was exactly the same. In the vignette, a 50-year-old patient presented with chest pain and an electrocardiogram, suggesting anterior myocardial infarction. The vignette stated that “primary angioplasty was not an option.” It further stated that “no absolute contraindications to thrombolysis [were] evident.” The physicians were asked to perform a series of tasks, including:

- Rank the likelihood that the patient was suffering from coronary artery disease on a scale of 1 to 5;
- State whether they would recommend thrombolysis or whether they would discharge the patient with no treatment;
- Rank the strength of their recommendation for or against thrombolysis on a scale of 1 to 5;

- Rank how cooperative they believed African Americans were about medical procedures such as thrombolysis in comparison with White patients on a scale of 1 to 5; and
- Take the Race IAT to measure their implicit bias toward African Americans or Whites.

The physicians prescribed more aggressive treatment to the White patient. The physicians recommended that the White patient receive thrombolysis in 58.2 % of the cases. But they recommended that the African American patient receive thrombolysis in only 42.7% of the cases. The 15.5% differential is significant. On the basis of this differential, out of every 100 African American patients who present with a potential heart attack, 15 might not receive treatment. Therefore, they might die simply because of the physician's implicit racial bias.

The strength of the physicians' recommendation correlated with the level of bias they showed on the Race IAT. Physicians who sent the African American patient home or only weakly recommended thrombolysis typically showed high levels of implicit bias against African Americans on the IAT. Physicians who strongly recommended thrombolysis to the White patient typically showed a strong preference toward White people on the IAT.

Some physicians might think that the differential decisions were based on differential diagnoses—not biases. It would be reasonable to assume that they simply factored race into their decisions in a way that was appropriate for diagnosis. For instance, if they concluded that an African American patient was less likely to have anterior myocardial infarction, prescribing less aggressive treatment would be reasonable. However, in the study, the physicians who showed bias against African Americans on the IAT were also *more* likely to diagnose the African American patient with coronary artery disease. But they were *less* likely to provide treatment.

Some might assume that the physicians failed to recommend thrombolysis because they did not believe the African American patients would cooperate with the treatment. However, the physicians ranked African American and White patients as equally cooperative with medical procedures such as thrombolysis on a 5-point scale.

The study demonstrated that neither diagnosis nor doctors' assumptions about adherence to treatment had an effect on treatment. Implicit racial bias drove life and death decisions for many of the physicians participating in the study. The complex decision-making process, the commitment of the physicians to the Hippocratic Oath, and equal treatment of patients were foiled by implicit bias.

¹ The IAT is a computerized online test (<https://implicit.harvard.edu>) that is validated with an overwhelmingly statistically significant sample. People have completed more than 4.5 million IATs online and had their data recorded by Project Implicit. The IAT measures mistakes made in matching words and pictures to categories. It also measures, in milliseconds, the time that it takes to match the words and pictures to the categories. The amount of delay and the number of mistakes are assessed, and the result demonstrates the strength of the implicit association between the words and the categories.