



HOW THE AAMC FAILS TO READ AND CORRECTLY INTERPRET THE RESEARCH IT CITES

Jay P. Greene

DIRECTOR OF RESEARCH



Do No Harm

DoNoHarmMedicine.org

TABLE OF CONTENTS

INTRODUCTION	3
THE STUDIES	4
Hoffman et al.	4
Goyal et al.	8
Anderson et al.	10
Cleeland et al.	12
CONCLUSION	13

INTRODUCTION

In 2022, the Association of American Medical Colleges (AAMC), joined by 45 other healthcare organizations including the American Medical Association, the Association of American Colleges of Osteopathic Medicine and the American Public Health Association, **filed an amicus brief in the landmark *Students for Fair Admissions* case.** The organizations' goal was to convince the Supreme Court to maintain racial preferences in college and graduate school admissions decisions. Their argument was that allowing educational institutions to consider race was a matter of life and death: "As an overwhelming body of scientific research compiled over decades confirms, diversity literally saves lives..."

While the Supreme Court ultimately ruled that race cannot be used to determine educational opportunities, there is a rear-guard effort to continue racial preferences, especially in medicine. **Some universities appear to be refusing to comply** with the decision given the composition of the new cohorts they are admitting. And new cases are being prepared for court consideration that might limit the scope of the *Students for Fair Admissions* decision. In particular, some are suggesting that the prohibition on considering race **may not apply to the hiring of medical school graduates** into residency programs, fellowships, or hospitals.

Given the continuing debate over whether medical institutions should be allowed to consider race in admissions and hiring decisions, it is important that we examine what AAMC claims the "overwhelming body of scientific research" has to say on the issue. **In previous research, Do No Harm has rebutted** the general claim that having a doctor of the same race as the patient improves healthcare outcomes. That review found that the medical research literature does not support the claimed benefits of racial concordance. It also found that one of the leading studies cited in support of racial benefits was **marred by researcher misconduct** and produced null results **once an obvious statistical control was added.**

But in the amicus brief submitted in the *Students for Fair Admissions* case, the AAMC and its 45 healthcare organization allies make a specific claim that "in controlled studies, Black physicians are far more likely than others to accurately assess Black patients' pain tolerance and prescribe the correct amount of pain medication as a result." That claim of a racial concordance benefit specifically in the treatment of pain is accompanied in the amicus brief with a citation to four studies. This report carefully examines each of those four cited studies and finds that none of them support the asserted benefit of racial concordance.



THE STUDIES

Strangely, none of the four cited articles even examines whether black doctors are more accurate in assessing or treating the pain of black patients. A careful review of each of these four studies raises questions about whether the authors of the AAMC's brief and the 45 allied organizations that endorsed that brief even read the four studies that are alleged to provide proof of racial concordance benefits in managing the pain of black patients. How dozens of high-status health organizations could fail so dramatically in their responsibility to describe medical research accurately to policymakers raises questions about the scientific credibility of these organizations more broadly.

THE FIRST STUDY CITED IN THE AAMC AMICUS BRIEF

Kelly M. Hoffman et al., "Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites," *Proceedings of the National Academy of Sciences* (2016)

The Hoffman et al. article cited as proof of a racial concordance benefit in the treatment of pain cannot possibly be used to conclude that black doctors are better at managing the pain of black patients because the study does not compare black doctors to non-black doctors. Moreover, the study focuses primarily on medical students not doctors, and does not examine the treatment of any actual black patients. If the authors of the AAMC brief or representatives of any of the 45 allied health organizations who joined that brief had bothered to read the Hoffman et al. article, they could have easily recognized these problems.

The Hoffman et al. article contains two studies. The first examines a convenience sample of 92 subjects recruited online. The second examines 194 medical school students and 28 medical residents at the University of Virginia. All of the subjects in both studies are white. Subjects were asked to rate how true they believed 15 statements were about medical differences between white and black people. The researchers say 11 of these statements are false and four are true.

Subjects were then shown hypothetical scenarios involving black and white patients and were asked to rate the pain of the black and white patients described in those scenarios. Subjects were also asked to recommend treatment for the hypothetical black and white patients, with the researchers classifying the recommendation of a “narcotic” as the “accurate” treatment and other recommendations as “inaccurate.” (Note that “narcotic” rather than opioid was the term used in Hoffman et al.)

The article expressed alarm at the percentage of false statements believed by the subjects. It also showed that a higher rate of believing false statements about medical differences between blacks and whites was associated both with rating the pain of hypothetical black patients as lower than hypothetical white patients and with being less likely to recommend narcotics for the hypothetical black patient.

The narrative implied by the article is that white doctors are more likely than non-white doctors to have false medical beliefs about blacks, to under-rate the pain of black patients, and as a result, are less likely to appropriately prescribe narcotics to treat the pain of black patients. While this is implied, it is certainly not what the article demonstrates. The article only considers the false beliefs and treatment recommendations of white subjects, so it offers no results indicating that non-white subjects would fare any better.

Interestingly, the researchers did initially collect data from non-white subjects but excluded their results from the analyses presented. That is, the article could have conducted the comparison required to indicate whether white prospective doctors held more false beliefs or were more likely to provide “inaccurate” care, but the researchers chose not to present those results. To justify excluding non-white subjects from their analyses, the researchers say: “We also excluded all nonwhite participants, given the historical context of black–white relations, particularly in the medical context.” But this explanation is utterly nonsensical and does not justify the exclusion at all. What about the “historical context of black–white relations” requires non-white subjects from being excluded? Given that the implied narrative would require including non-white subjects so that a comparison could be made, this exclusion is even more mysterious.



Fortunately, the researchers did not discard the data they collected from non-white subjects and included that information in their publicly available data files. I downloaded those files and examined the rate at which non-white subjects held false beliefs about medical differences between black and white people. Contrary to the implied narrative, non-white subjects held a *higher* rate of false beliefs than did white subjects.

In the study examining a convenience sample of people recruited online, there were 24 subjects who described themselves as non-white and who were excluded from the analyses reported in the article. Of the 11 false statements, the non-white subjects believed them to be at least possibly true an average of 25.00 percent of the time. This is slightly higher than the 22.43 percent average of believing false statements reported for the white subjects.

In the study of medical students and residents, there were 172 non-white subjects excluded from their analyses. The average rate of believing false statements among these 172 non-white subjects was 14.96 percent, moderately higher than the 11.55 percent reported in the article for the white medical students and residents. If the theory is that prospective white doctors are less capable of appropriately treating the pain of black patients because they have false medical beliefs about blacks even after receiving at least some medical training, then finding that non-white prospective doctors are even more likely to hold those false beliefs undercuts that theory.

This theory is further undercut by the fact that the rate at which medical students hold false beliefs about medical differences between blacks and whites declines as they advance in their training. That is, the convenience sample demonstrates that a population with no medical training will believe that a little more than a fifth of these false statements are true. First and second year medical students are less susceptible to these false beliefs. But the third year students and residents, who have more medical experience, become very unlikely to believe false statements about medical differences between blacks and whites. These more advanced trainees only say that false statements are at least possibly true a little more than five percent of the time.

A reasonable conclusion from these results is that medical training is fairly effective at getting students to shed false beliefs about medical differences between black and white people. By the time they are fully licensed, independently practicing doctors, we might expect these false beliefs to be vanishingly





rare. And if these false beliefs are the driver of improper treatment of the pain of black patients, we would expect this to be a very uncommon problem among experienced doctors. By examining mostly medical students rather than attending physicians and by ignoring the improved knowledge exhibited by more advanced students and residents, this article cannot speak to whether the correct treatment of pain among black patients is a problem among actual independently practicing doctors.

Lastly, it is important to note that the article does not examine the treatment of any actual patients. Instead, it examines the recommended treatment for hypothetical patients. Each subject saw two hypothetical scenarios, one with a black patient and one with a white patient. The researchers coded every recommendation of a narcotic as the “accurate” treatment and every recommendation for something other than a narcotic as the “inaccurate” treatment. This was determined to be the accurate treatment based on providing scenarios regarding an ankle injury and kidney stone to 10 experienced doctors.

But the recommended treatment in these two scenarios was not unanimous. The experienced doctors recommended a narcotic nine out of 10 times for the ankle injury and eight out of 10 times for the kidney stone. Given that there was some disagreement even among experienced physicians about how to treat these hypothetical patients, it seems unreasonable to assume that subjects who recommended the less common non-narcotic intervention were “inaccurate” and even more unreasonable to assume that this inaccuracy was motivated by racial bias.

Despite this article not involving a comparison between black and non-black doctors, focusing mostly on medical students rather than independently practicing doctors, and examining only hypothetical patients, the AAMC and 45 other health organizations cited it to support the claim that “Black physicians are far more likely than others to accurately assess Black patients’ pain tolerance and prescribe the correct amount of pain medication as a result.” Even a casual reading of this article should have made these high-status medical authorities realize that it did not support their claim.

THE SECOND STUDY CITED IN THE AAMC AMICUS BRIEF

Monika K. Goyal et al., Racial Disparities in Pain Management of Children with Appendicitis in Emergency Departments, *JAMA Pediatrics* (2015)

The Goyal et al. article focuses on whether children who come to hospital emergency departments (ED) with appendicitis are more likely to receive any analgesic and whether that pain treatment includes administering an opioid. The study concluded that black children are as likely as white children to be given an analgesic but significantly less likely to receive an opioid. Importantly, the study never considers whether the race of the physician caring for those children alters the kind of pain treatment they receive. That is, the Goyal et al. article cannot be used to support the claim that black doctors are better at treating the pain of black patients because the study never examines that question.

A simple reading of the abstract would have made it obvious to the authors of the AAMC brief and representatives from the other 45 health organizations that joined that brief that this study is not relevant for the racial concordance claim they were attempting to justify. Again, how these leading medical associations failed to perform basic due diligence is alarming and raises questions about their credibility to speak on what medical science says about issues related to health policy.

But there are concerns with the Goyal et al. study that extend beyond its inapplicability to racial concordance claims. As the authors of the article acknowledge, there are other studies of the same question that do not find racial disparities in the administration of pain treatment. **One such study by Yen et al.** uses the same data set as Goyal et al. but examines the treatment of pain related to long bone fractures rather than appendicitis. As Goyal et al. put it, “It is unclear why such a striking racial disparity was found with respect to pain management in childhood appendicitis but not in long-bone fractures.”

While the Yen et al. study uses the same data set consisting of a representative sample of hospital emergency room visits and examines the same general topic of racial differences in treating children, the two studies do not control for the same set of variables to adjust for whether other differences between black and white patients other than their race can account for differences in treatment.

One notable difference is that the Yen et al. study controls for the type of hospital (voluntary non-profit, government non-profit, or proprietary) in which children are being treated while the Goyal et al. study does not. It is certainly plausible that black children are more likely to be taken to government-operated hospitals and that those hospitals are less likely to provide opioids. If that were true, the resources and standard practices of government hospitals rather than the race of the patient could help explain differences in pain treatment.

Yen et al. acknowledge that some previous studies had found differences in how patients of different races were treated for pain, but those studies “were conducted in EDs at single institutions” and might reflect the characteristics of those institutions rather than represent a national pattern. By failing to control for the type of hospital in which patients are treated, Goyal et al. may have confounded differences across hospitals with differences across the race of patients.

Consistent with this explanation, Goyal et al. also acknowledge that there is another study that specifically examines whether children of different races receive different treatment for their pain when they are diagnosed with appendicitis. That study by **Caperell et al.** only examines children treated by the Children’s Hospital of Pittsburgh ED and found no differences in how children who present with acute abdominal pain are treated based on their race. That study specifically found no racial differences in whether children diagnosed with appendicitis would receive an opioid.

The results of the Caperell et al., Yen et al. and Goyal et al. studies can be reconciled if it is the case that hospitals differ in the likelihood that they administer opioids, but black children are more likely to go to hospitals that are less likely to administer opioids. Studies of individual hospitals, like Caperell et al.’s examination of Children’s Hospital of Pittsburgh, would find no differences in treatment by race within the same hospital. And Yen et al.’s study of a nationally representative sample that controls statistically for the type of hospital would also find no difference in treatment, since the effect is driven by different practices across types of hospitals rather than within hospital bias against black patients. By failing to control for the type of hospital, Goyal et al. might wrongly attribute to biased treatment by the staff in emergency departments what can actually be explained by black patients being more likely to go to hospitals with different practices.

THE THIRD STUDY CITED IN THE AAMC AMICUS BRIEF

Karen O. Anderson et al., *Racial and Ethnic Disparities in Pain: Causes and Consequences of Unequal Care*, *Journal of Pain* (2009)

The Anderson et al. article is a review of research on racial differences in pain treatment and does not present any original findings of its own. It finds that “this review reveals the persistence of racial and ethnic disparities in acute, chronic, cancer, and palliative pain care across the lifespan and treatment settings, with minorities receiving lesser quality pain care than non-Hispanic whites.” Importantly, the Anderson et al. article does not review any studies or present any findings about whether the race of the physician was related to differences in the treatment of pain. That is, the Anderson et al. article says nothing that supports the claim made in the AAMC brief.

Again, it is unclear why the authors of the AAMC brief would cite a review of the research literature to support its claim that “in controlled studies, Black physicians are far more likely than others to accurately assess Black patients’ pain tolerance and prescribe the correct amount of pain medication as a result” when that review describes no research supporting that claim. It is unclear why the leaders of 45 leading health organizations that joined the AAMC brief did not engage in any due diligence with respect to this claim before providing their endorsement.

It is also important to note that the Anderson et al. article is not a systematic review that attempts to reconcile inconsistent results by adjudicating differences in research design and quality. It simply presents a narrative of past research, drawing holistic conclusions about the collective findings of past studies. Critically examining the research design and scope of the research on racial differences in pain is especially important because many factors strongly predict pain treatment, such as **whether the setting is urban or rural, in a teaching hospital or not, and the field of medicine being examined**. Failure to control for these factors could wrongly lead studies to attribute to racial differences variance that is explained by other causes.

Anderson et al. simply present a selective narrative without fully addressing differences in research design or even simply counting the number of studies drawing different conclusions. For example, in



its discussion of studies focused on racial differences in the treatment of acute pain in emergency departments, the review begins describing two studies that find racial differences but then acknowledges “subsequent studies did not find disparities in analgesia for conditions treated in the emergency department, whereas other investigations continued to document disparities related to minority group status.” That statement cites seven studies to support the claim that “subsequent studies did not find disparities in analgesia for conditions treated in the emergency department” and three studies to support the claim that “other investigations continued to document disparities related to minority group status.” Anderson et al. also mention that “several studies completed secondary database analyses of the National Hospital Ambulatory Medical Care Survey” and cites three finding racial differences and four finding no differences.

If one were to synthesize these studies simply by counting how many present positive or negative findings, one would conclude that the research literature does not support the conclusion that there are racial differences in the treatment of acute pain in emergency departments. Or at a minimum, one might say that the research findings are mixed, preventing any clear conclusion.

Instead, Anderson et al. conclude “overall, studies on analgesia in the emergency department indicate persistent and significant racial and ethnic disparities in providing adequate analgesics.” Anderson et al. draw this conclusion after acknowledging that “the discrepancies and negative findings across studies may be related to variability in study methodologies, sample size, patient populations, and geographic locations” and making no effort to adjudicate those discrepancies. And Anderson et al. assert that racial and ethnic disparities are “persistent” despite acknowledging that “the negative findings also suggest increasing public and professional awareness of inadequate pain management may have led to improvements in pain assessment and treatment in the emergency department.”

Because Anderson et al. do not systematically count studies with different results or assess research design scope and quality, it is difficult to know whether someone else who read the same studies might choose to draw different conclusions about what research had to say on the issue. And because the narrative approach adopted by Anderson et al. allows them to highlight and describe the results of some studies but not others, it is possible that a reader would walk away with a very different impression of the overall results if different studies had been featured.



THE FOURTH STUDY CITED IN THE AAMC AMICUS BRIEF

C.S. Cleeland et al., Pain and Treatment of Pain in Minority Patients with Cancer: The Eastern Cooperative Oncology Group Minority Outpatient Pain Study, *Annals of Internal Medicine* (1997)

The Cleeland et al. article examines the pain treatment for 281 minority outpatients and finds that “sixty-five percent of minority patients did not receive guideline-recommended analgesic prescriptions compared with 50% of non-minority patients.” Among the black patients, 59 percent were not properly treated for pain and among Latino patients the rate was 74 percent.

Like all of the other articles cited in the AAMC brief, the Cleeland et al. study does not examine whether pain treatment for black patients was any different if their physician was also black. That is, there is no support in the Cleeland et al. study for the racial concordance claim made in the AAMC brief. Why the authors of that brief cited it for support is unclear.

Even for the purposes of comparing whether black patients are properly treated for pain relative to white patients, this study cannot address the question because it did not identify the adequacy of pain treatment for white patients. The cited study only collected data on Hispanic and black patients. The comparison to outcomes for “non-minority patients” is drawn from an earlier study by the same authors that did not collect information on the race of the individual patients. Instead, they declared the patient to be a nonminority patient if the setting in which they were treated served a population that consisted of predominantly but not necessarily entirely nonminority patients. Since they did not collect data from all or a representative sample of patients in those settings, we cannot assume that those patients are not minorities. That is, a large percentage of the patients in the control group could also have been black, invalidating the comparison.

In addition, as Cleeland et al. acknowledge, their study failed to control for a number of variables that might account for racial differences in pain treatment: “our study did not consider reluctance on the part of the patient or family to report pain or take analgesics or the patient’s ability to pay for treatment, factors that may influence physician prescribing.” Lastly, Cleeland et al. circulated **their earlier research** asserting racial differences in pain treatment to the treatment centers before collecting data on how minority patients were treated in the cited study. Priming the participating treatment centers with the hypotheses of the study may have distorted patient recruitment and the self-reports of doctors and patients in the cited study.

In short, Cleeland et al. is a poorly designed and executed study for assessing whether patients of different races are treated properly for pain. And the study is incapable of addressing whether racial differences in pain treatment are affected by the race of the physician because it does not even examine that question.

CONCLUSION

Judges, legislators, and other policymakers often rely on leading health organizations to inform them about what medical science has to say on matters of public policy. The AAMC **describes itself** as “the national voice and advocate for academic medicine.” The **AMA similarly declares** that it is committed “to stand up for science and evidence-based decision-making.” The AAMC and every one of the 45 health organizations that signed onto the amicus brief submitted for the *Students for Fair Admissions* case presents itself as an authority on what scientific research has to say about medical policy and practice.

But the alarming reality made clear by closely reviewing the citations presented to support the claim that there are racial concordance benefits in the treatment of black patients’ pain is that these medical associations are not reliable authorities on medical research. They appear to be so motivated by political agendas that they have either lost the ability to read scientific research accurately or no longer care to do so when that research is in conflict with their political goals.

The failure of medical associations to describe research results accurately has had real-world consequences. Supreme Court Justice Ketanji Brown Jackson repeated almost verbatim the false claim made in the AAMC brief in her dissent in the *Students for Fair Admissions* decision. Citing the AAMC brief, **she wrote**, “Research shows that Black physicians are more

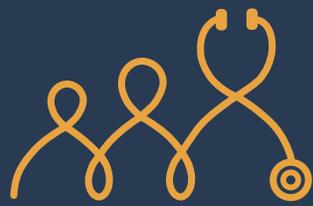
likely to accurately assess Black patients' pain tolerance and treat them accordingly (including, for example, prescribing them appropriate amounts of pain medication)." This falsehood was able to reach and be believed by top government officials because they thought they could rely on dozens of leading health organizations to interpret the research accurately.

The realization that these medical associations are no longer reliable scientific authorities is beginning to spread across top policymakers and the general public. The national experience with Covid-19 was a shocking wake-up call. And the ideological commitment to racial preferences despite the lack of scientific support is only confirming this alarming new reality.

The truth is that we need medical associations that can be relied upon to describe scientific research accurately. If the 46 organizations that signed onto the racial concordance claim in the *Students for Fair Admissions* amicus brief cannot reform themselves to regain trust as accurate translators of medical research, new organizations will have to be developed to take their place.

Internal reform is easier and more desirable. Hopefully reports like this documenting how severely these organizations misread medical research will motivate those embarrassed by this abdication of scientific responsibility to initiate meaningful internal reforms.





Do No Harm

DoNoHarmMedicine.org