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Got Pain? Racial Bias in Perceptions of Pain

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Abstract

In the days of slavery, White people assumed that Black people felt less pain than did White people. This belief was used to justify slavery; it was also used to justify the inhumane treatment of Black men and women in medical research. Today, White Americans continue to believe that Black people feel less pain than do White people although this belief has changed from its historical, explicitly racist form. Racial attitudes do not moderate the bias, suggesting that racial bias in perceptions of others' pain is not rooted (solely) in racial prejudice. Moreover, Black Americans too believe that Black people feel less pain than do White people, suggesting that the bias is no longer grounded in intergroup dynamics. Rather, contemporary forms of this bias stem from assumptions that Black people face more hardship and "thus" can withstand more pain and assumptions that Black people's bodies are not only different but also superhuman. Although this new instantiation of the pain perception bias is decidedly more "benevolent", it can nonetheless lead to negative outcomes. Here, we consider how racial bias in perceptions of others' pain may affect racial disparities in health care and intergroup relations more generally. We also discuss potential avenues for interventions aimed at preventing this bias among children and reducing this bias among adults.

Black Americans are more likely to be ill, to be injured, and to die prematurely relative to White Americans (Centers for Disease Control and Prevention, 2011). These racial disparities stem in part from racial bias in health care (Agency for Healthcare Research and Quality (AHRQ), 2011), a bias that is particularly striking in the area of pain management. Numerous studies have shown that Black patients are systematically undertreated for pain (Bernabei et al., 1998; Bonham, 2001; Drwecki et al., 2011; Green et al., 2003; Ng et al., 1996b; Ng et al., 1996a). Relative to White patients, they are less likely to receive pain medications, and when they receive pain medications, they receive lower doses. Quantifying racial disparities in pain management is a difficult endeavor; estimates vary from study to study. Still, sample estimates provide useful information about the potential scope of these disparities. In the context of postoperative pain, for example, Ng and colleagues have found that Black patients received 6 mg of morphine per day whereas White patients received 22 mg of morphine per day (Ng et al., 1996b; Ng et al., 1996a). Importantly, Black patients are undertreated not only relative to White patients but also relative to WHO guidelines (Cleeland et al., 1994; Cleeland et al., 1997). What this means is that Black patients are undertreated relative to White patients, not (only) because White patients are over-treated for their pain. Black patients are suffering.

A primary goal of health care is to reduce suffering (Cassell, 1982; Morrison & Meier, 2004), and patients with untreated pain are suffering. Moreover, suffering has serious implications for patient health. Untreated pain is associated with depression, sleep disruption, skin ulcers, and weight loss; it can worsen co-existing medical and psychiatric problems; and it can lead to chronic stress (Agency for Health Care Policy & Research (AHCPR), 1992; Corbett et al., 2012; DeLuca, 2008; Lane et al., 2003; Magni et al., 1993; Pasero & McCaffery, 1996;

Thernstrom, 2001; University of Texas, 2009). Understanding the causes of racial disparities in pain management is thus crucial.

Broadly speaking, racial bias in pain management might emerge for two reasons: (1) Black patients' pain might be recognized but not treated, and/or (2) Black patients' pain might not be recognized in the first place. The first explanation has received some attention and empirical support. Researchers have theorized that prejudice and stereotypes affect Black patients' pain treatment and data suggest that at least some physicians assume that Black patients cannot afford pain medications, will abuse and/or sell their pain medications, and/or will not adhere to medication regiments (Green et al., 2003; Shavers et al., 2010; see also Balsa & McGuire, 2003; van Ryn & Burke, 2000). The second explanation – that Black patients' pain might not be recognized in the first place – has received less attention. One study by Staton and colleagues (Staton et al., 2007) has shown that physicians are more likely to underestimate the pain of Black versus non-Black patients (cf. Todd et al., 2000). Because this paper was not an experiment, however, it is not clear whether this bias was the result of patient race, physician characteristics, and/or characteristics of the patient–physician interaction (e.g., awkward patient–physician interactions resulting in mistrust). Whether physicians and people more generally assume that Black people feel less pain than do White people remains unclear. In the present review, we begin to fill this gap. We start by exploring historical roots of this assumption and then detail our own work on its modern manifestations. We conclude with implications of this bias for health care and race relations more generally.

Historical Roots

The belief that Black men and women feel less pain than do their White counterparts has a long history in the United States. In the days of slavery, slave owners believed that Black slaves were impervious to pain, a belief "confirmed" by the claims of medical professionals (Washington, 2006). Noted physician Samuel Cartwright, for example, catalogued "Negro diseases" such as *dysaesthesia aethiopis*. According to Cartwright, this disease caused a number of deviant behaviors including destroying property and creating trouble without cause or provocation. It also made Black people "insensible to pain when subjected to punishment". Cartwright blamed Black people' lack of exercise, causing their blood to be so "highly carbonized" and "deprived of oxygen" that it could not stimulate nerve endings (Cartwright, 1851; see also Guillory, 1968). Cartwright was not alone in these claims. Dr. Charles White, a well-respected surgeon in his time, believed that Black people

> bear surgical operations much better than White people and what would be the cause of insupportable pain for White men, a Negro would almost disregard…[I have] amputated the legs of many Negroes, who have held the upper part of the limb themselves. (Washington, 2006, p. 58)

And Jon Simms, the father of gynecology, experimented on Black women because he believed "Negresses…will bear cutting with nearly, if not quite, as much impunity as dogs and rabbits" (Pernick, 1985, p. 156). The belief that Black men and women feel less pain than do White people (and in some cases that they feel no pain at all) excused inhumane treatment of Black men and women in medical research by neurologists and surgeons and justified inhumane treatment of Black slaves by White slave owners (Guillory, 1968; Washington, 2006).

Contemporary medical research on racial differences in pain thresholds tells quite a different story. Research on clinical pain has shown, quite consistently, that Black people report more, *not less*, pain than do White people (for reviews, see Campbell & Edwards, 2012; Edwards et al., 2001; Green et al., 2003). This is true across illnesses and types of pain: pain related to

glaucoma, AIDS, migraine headaches, angina pectoris and arthritis, jaw pain, postoperative pain, myofascial pain, joint pain, and nonspecific daily pain. It is also true across populations: young children, healthy college/young adults, and disabled elderly individuals. These racial differences in self-reported pain are significant even after controlling for demographic factors such as age, gender, socioeconomic status, education, employment, marital status, and other potential confounds including medical comorbidities and disease duration. In our own work, we have found that Black participants report that they would feel more pain in various hypothetical situations (e.g., slamming one's hand in a car door, hitting one's head, getting a paper cut) than do White participants (see Table S1 in Trawalter et al., 2012). Of course, self-reports of pain cannot provide *prima facie* evidence that Black people feel more pain than do White people.

Studies examining the effect of racial group identity on experimental pain – that is, studies administering painful stimuli to healthy participants – provide more conclusive evidence. Two reviews of studies from 1944 to 2011 found systematic differences in pain tolerance and thresholds between Black and White Americans over that time period (Rahim-Williams et al., 2012; Zatzick & Dimsdale, 1990). These studies have shown that, relative to White Americans, Black Americans feel more, *not less*, pain; Black Americans have lower pain thresholds (i.e., they perceive pain at lower levels of intensity) and lower pain tolerance (i.e., they find the pain unbearable at lower levels of intensity). Again, this racial difference is true across types of pain: thermal pain (i.e., placing a burning-hot probe on the forearm), cold pressor pain (i.e., immersing the hand in ice-cold water), ischemic pain (e.g., tightening a tourniquet around the arm), electrical stimulation (e.g., applying high voltage to the thigh), temporal summation (i.e., examining changes in pain perception across successive administrations of painful stimuli), and conditioned pain modulation (AKA diffuse noxious inhibitory control; i.e., identifying when pain inhibits further pain). The reasons for these racial differences remain elusive and controversial. It is not clear what biological, social, and/or cultural factors play a role (see Campbell & Edwards, 2012, for a review of potential factors). Regardless, the evidence that Black Americans may feel more pain than do White Americans is troubling given evidence that people, including medical personnel, continue to believe that Black people feel less pain than do White people (Mathur, Richeson, Paice, Muzyka, & Chiao, 2010; Staton et al., 2007; Trawalter et al., 2012).

Contemporary Manifestations

Over the last decades, racial attitudes have improved dramatically (Bobo, 2001; Devine & Elliot, 1995; Madon et al., 2001). Discrimination is now illegal and deemed immoral. Racial prejudice and discrimination still exist, of course, but often in variant forms. Contemporary prejudice and discrimination are often subtle, sometimes unintentional, and even non-conscious (Devine, 1989; Dovidio, 2001). Today, few people would admit to believing that Black people feel less pain than do White people because of "inferior blood". Like racial attitudes more generally, beliefs about Black people's bodies and pain have changed. Yet, although (many) people today may reject notions that Black people have inferior blood, they continue to believe that Black people's bodies are fundamentally different from White people's bodies (Williams & Eberhardt, 2008). And, in our own work, we find that people continue to assume that Black people feel less pain than do White people (Dore, Hoffman, Lillard, & Trawalter, 2014; Hoffman & Trawalter, 2014; Trawalter et al., 2012; Waytz, Hoffman, & Trawalter, 2014).

In a first study (Trawalter et al., 2012, Experiment 1) examining this phenomenon, White participants saw a picture of a Black or White target person and then rated how much pain this person would feel in various situations (e.g., slamming their hand in a car door, hitting their head, getting a paper cut). Participants reported that the target person would feel less pain if they

saw a picture of a Black versus White target person. In subsequent studies, Black participants (Trawalter et al., 2012, Experiment 2) and medical personnel (Trawalter et al., 2012, Experiment 3) showed the same bias; they too reported that the target person would feel less pain if they saw a picture of Black versus White target person. In another study (Waytz et al., 2014), White participants saw a picture of Black and White target persons and made relative pain judgments. Again, participants reported that the Black target person would feel less pain than would the White target person. Finally, in another study (Dore et al., 2014), White and racial/ethnic minority children saw pictures of Black and White target children and then rated how much pain each child would feel in various situations. Consistent with previous findings, they too reported that the Black target would feel less pain than would the White target. Across participant populations, then, we find strong and consistent evidence that people assume *a priori* that Black people feel less pain than do White people.

More recently, Mathur and colleagues (2010) conceptually replicated and extended these findings. They asked Black and White Americans to read vignettes about patients suffering from pain. Just prior to reading the vignette, participants were presented with a Black or White target face. These faces were presented either very quickly (i.e., outside of awareness) or more slowly. Participants were then asked to estimate the amount of pain each patient felt. Results revealed that participants assumed Black patients felt less pain than did White patients when the target faces were presented very quickly. Mathur and colleagues took this as evidence that racial bias in pain perception operates in a relatively automatic fashion.[1]

Taken together, these studies imply that racial bias in perceptions of pain in healthcare settings (e.g., Staton, Panda, Chen, Genao, Kurz, et al., 2007) is not likely, or at least not only, the result of patient characteristics or patient–doctor dynamics. It is not likely the result of Black patients under-reporting their pain or White patients over-reporting their pain, and it is not likely the result of negative patient–doctor (Black patient-White doctor) interactions that foster miscommunication and misunderstanding. Medical personnel's assumptions about Black patients' pain (or lack thereof) may well contribute to racial bias in pain management. Understanding the mechanisms underlying this bias is therefore imperative.

Potential Mechanisms

Although the assumption that Black people feel less pain than do White people is consistent with a number of social psychological phenomena related to racial prejudice, including stereotyping, infra-humanization, and the intergroup empathy gap, studies suggest that these race-related phenomena are not likely the source of the racial bias in perceptions of others' pain (Mathur et al., 2010; Trawalter et al., 2012). In these studies, racial bias in perceptions of others' pain was not associated with explicit or implicit racial attitude measures, concerns about appearing prejudiced, or White guilt. Rather, contemporary forms of this racial bias stem from beliefs about Black people that, on the surface, seem to elevate Black people and their plight. To date, we have identified two such beliefs: the belief that hardship leads to strength and the belief that the Black body has superhuman qualities.

In the United States, people commonly believe that pain has its rewards – a belief captured by the saying "no pain, no gain". Many also believe that hardship is only bestowed upon those who can endure it ("God doesn't give you more than you can handle"), and that enduring hardship bestows strength ("That which does not kill us makes us stronger"). Because Black Americans, on average, have lower status and, hence, endure greater hardship (Bobo, 2000; Sidanius et al., 1996), people may assume that they feel less pain than do White people. Consistent with this possibility, we find that perceptions of a target person's hardship predict perceptions of that target person's pain and mediate the effect of target race on perceptions of pain (Trawalter et al.,

2012, Experiment 5). Not only that, we find that racial bias in perceptions of others' pain can be eliminated and even reversed if and when people are given information that a White person has endured *more* hardship than a Black person (Hoffman & Trawalter, 2014). In this paper should be study, participants read about Black and White targets. Half of the participants read that the Black target had endured immense hardship whereas the White target had not (consistent with people's stereotypes about Black and White people and hardship). The other half of participants read that the White target had endured immense hardship whereas the Black target had not (counter to people's stereotypes about Black and White people and hardship). All participants were then randomly assigned to rate the pain of either the Black or White target. We found that racial bias in pain perception emerged only when the hardship information was consistent with people's stereotypes; when the Black target was described as having endured hardship and the White target as not having endured hardship, participants rated the pain of the Black target as less than that of the White target. However, when the hardship information was inconsistent with people's stereotypes – when the White target was described as having endured hardship and the Black target as not having endured hardship – then the bias was reversed; participants rated the pain of the White target as less than that of the Black target. This paper demonstrates that perceptions of others' hardship shape perceptions of others' pain and can operate independent of race. More generally and importantly, this paper shows that racial bias in perceptions of others' pain can be eliminated.

If people indeed infer strength from low status and the hardship often associated with low status, then increasing the status of Black (versus White) target individuals ought to reduce and perhaps eliminate racial bias in pain perceptions. Indeed, that is what we find. In one study (Trawalter et al., 2012, Experiment 6), participants imagined working at a company with a target person, "Jordan". They imagined that Jordan was of lower, equal, or higher status. For example, in the higher-status condition, participants read,

> Imagine that you and Jordan both work at the same company. He is your superior. He dictates and oversees your day-to-day tasks. You depend on his recommendation for promotions and salary increase.

Then, they rated the amount of pain Jordan would feel if she or he stapled her or his hand with an industrial stapler. Results revealed that participants thought Jordan would feel significantly less pain if/when Jordan was of equal or lower status rather than higher status. In other words, it appears that people believe that Black people feel less pain than do White people because Black people tend to have low status and, relatedly, because Black people tend to face greater hardship.

Even in the absence of hardship, however, people may continue to believe that Black people feel less pain than do White people if and when they super-humanize the Black body. Many people believe that race is a biological construct (Williams & Eberhardt, 2008). They believe that the Black body is fundamentally different from the White body. A surprising number of people, for example, believe that Black people (versus White people) have an extra muscle in their legs, breathe in more oxygen, have denser bones, and age more slowly (Fleming, 2001; Hall, 2001; Price, 1997; see also Table 1). They believe that the Black body is stronger and more efficient. In our own work, we find that White Americans preferentially associate Black people (versus White people) with superhuman words on implicit measures (Waytz, Hoffman, & Trawalter, 2014). For example, in one study, White participants were asked to categorize words related to the concept word "human" (e.g., person, citizen) and words related to the concept word "super-human" (e.g., magic, wizard). Before each word, a picture of a Black or White face appeared just briefly, outside of conscious awareness. Results

Table 1. "Magical beliefs" about the Black body. Percentage of people who endorsed these items as possibly, probably, or definitely true (vs. untrue).

	Sample 1	Sample 2	
	n = 125	*n* = 115	Average
White people have larger brains	14	12	13.00
White people have a better sense of hearing	17	10	13.50
White people have more efficient respiratory systems	17	14	15.50
Black people have a more sensitive sense of smell	15	18	16.50
Black people's nerve-endings are less sensitive	16	21	18.50
Black people have stronger immune systems	22	17	19.50
Black people are better at detecting movement	22	19	20.50
Black couples are significantly more fertile	26	18	22.50
Black people age more slowly	33	27	30.00
*White people are less likely to have a stroke	38	29	33.50
*Black people have denser, stronger bones	35	38	36.50
Black people's blood coagulates more quickly	38	39	38.50
*Black people are less likely to have multiple sclerosis	38	40	39.00
*White people are less susceptible to heart diseases	45	43	44.00
Black people's skin has more collagen; it's thicker	52	58	55.00

Note: The participants in these samples were Mechanical Turk workers; see Buhrmester, Kwang, and Gosling, 2011, and Paolacci, Chandler, and Ipeirotis, 2010 for evidence regarding the representativeness and data quality of Mechanical Turk samples. Items marked with an asterisk are true/factual.

revealed that participants were significantly faster at categorizing superhuman (versus human) words following the presentation of Black faces but not following the presentation of White faces. This pattern of results suggests super-humanization of Black people. In subsequent studies, we find that this super-humanization bias occurs explicitly too. We find that White Americans preferentially attribute superhuman capacities to Black versus White people; for example, they report that Black people are better able to suppress hunger and thirst and that their skin can withstand extreme heat (e.g., heat from burning coals). These beliefs, in turn, predict racial bias in pain perception; that is, people believe that Black people feel less pain than do White people to the extent that they believe that Black people's bodies have superhuman qualities.

The super-humanization of Black people has been especially notable in the world of sports (Bogle, 1989; Carrington, 2010; Entine, 2000). Black athletes are routinely depicted as having supernatural strength and talents. It is not uncommon, for example, to see ad campaigns featuring Black (but not White) athletes "hawking sneakers and soft drinks while performing superhuman physical feats" (Gerdy, 2002), p. 69; see also (Hoberman, 1997; McCall, 1994). Given this, one might expect Black athletes to play while injured because their pain might go unrecognized. Injury reports from the National Football League lend some credence to this possibility (Trawalter et al., 2012, Study 1). In an archival study of NFL injury reports, we asked research assistants to record players' injuries and the likelihood that they would be able to play in the next game using injury reports from the 2010 and 2011 seasons. The next-game status was coded as Out (definitely not playing), Doubtful, Questionable, or Probable. Results revealed that injured Black (versus White) players were rated as more likely to play in the next game, controlling for age, experience in the NFL, position, and injury type.

Taken together, the available evidence paints a bleak picture. People believe that Black people feel less pain than do White people. This bias stems from the belief that Black people's hardship has made them strong and the belief that their bodies are superhuman, impervious to the pain mere humans might feel. On the surface, both of these beliefs seem to "elevate" Black people and their plight. They seem to celebrate the strength and resilience of Black people. However, we would argue that these beliefs are dehumanizing and system-justifying. The belief that hardship leads to strength implies that Black people can endure and even tolerate racial disparities that make their lives harder than White people's lives. And the belief that Black people's bodies have superhuman qualities implies that they are not human, and that we need not worry about harm done to their bodies. Ultimately, what is clear is that both beliefs deny Black people the experience of physical pain.

Interventions: Preventing and/or Reducing the Bias?

For many racial disparities, improving racial attitudes is often one effective but difficult solution. Interventions aimed at improving racial attitudes are unlikely to reduce racial bias in perceptions of others' pain, however, because racial attitudes do not appear to be related to this bias (Mathur et al., 2010; Trawalter et al., 2012). Instead, interventions will need to challenge popular assumptions – assumptions about Black Americans and status, Black Americans and hardship, and the relationship between hardship and pain. Changing these assumptions will be difficult because, as a matter of fact, Black Americans do have lower status in U.S. society and they do experience more hardship on average relative to White Americans. To pretend that this is not the case is to deny the lived realities of Black Americans. Interventions will also need to challenge popular notions about the Black body. Interventions might then focus on (1) reminding people that what is true of groups of people on average is not necessarily true of individuals specifically and (2) helping people realize that some people endure more hardship than others *in spite of weakness we all share*, not because of extra strength they have. Future work will need to develop and test such interventions.

Given the robustness of the bias, interventions might be more effective at preventing rather than changing these beliefs. Our work suggests such interventions will need to take place relatively early. In a conceptual replication of our original paradigm (Dore et al., 2014), 5-, 7-, and 10-year old children saw pictures of Black and White children and rated the pain of each child. Results revealed no racial bias in children age 5 years. However, by age 7 years, children showed some evidence of this bias, and, by age 10 years, they showed a reliable bias; they assumed the Black child would feel less pain than the White child. These findings suggest that interventions should target children aged 7 years or younger. Future research will need to test whether interventions can prevent this bias from developing in children.

Consequences and Implications

Health care

The present findings on racial bias in perceptions of others' pain may have important implications for health care, and pain management more specifically. Our findings suggest that one reason Black patients may receive less pain medication is that medical professionals assume Black patients feel less pain than do White patients. This interpretation is more benevolent than the interpretation that (at least some) medical personnel withhold medication from Black patients. Still, this interpretation opens up other serious issues. It suggests that interventions will need to target multiple phases of the medical treatment process: at both the pain assessment and pain management stages. More specifically, the present work suggests that the pain assessment

process might benefit from more objective methods, although, as of yet, it is unclear what those methods might look like.

One intervention has shown some promise: studies have shown that having medical personnel engage in perspective-taking can reduce racial bias in pain treatment and improve the quality of doctor–patient interactions (Blatt, LeLacheur, Galinsky, Simmens, & Greenberg, 2010; Drwecki et al., 2011). Our findings suggest, however, that perspective-taking will work only if it challenges doctors' assumptions about patients' status and life hardship. One way to challenge assumptions about patients' status might be to change current models of patient–doctor interactions. Current models of doctor–patient interactions tend to be paternalistic (Parsons, 1951; Pilnick & Dingwall, 2011). Patients depend on the doctor for her or his treatment. Patients have low status. Doctors have high status. According to our findings, such a status differential could exacerbate the racial bias in perceptions of others' pain. There are other models of patient–doctor interactions, however. Many medical institutions are promoting more collaborative models, where patient and doctor work together to come up with the best diagnosis and treatment plan for the patient (Emanuel & Emanuel, 1992). According to our findings, this kind of model should reduce racial bias in perceptions of others' pain. Future work will need to explore this possibility.

Racial bias

The present findings also have important implications for understanding and reducing racial bias. They shed new light on previously-documented biases. Consider, for instance, the finding that White Americans condone police brutality against Black men (Goff et al., 2008). One possible explanation is that White people condone police brutality against Black men because they condone harm against Black men; they do not care about Black men. Another possibility, however, is that at least some White Americans condone police brutality against Black men because they assume that Black men feel less pain; they fail to recognize the extent of the brutality. As another example, consider the finding that White people do not appear to be distressed when witnessing harm inflicted upon Black people; specifically witnessing harm inflicted upon Black people does not activate the so-called pain matrix, a circuit of neural regions associated with pain processing (e.g., Avenanti et al., 2010; Forgiarini et al., 2011). Again, one possibility is that White people do not care about Black people and their pain. Another possibility, however, is that at least some White people assume that Black people do not feel much pain, making harm and injury seem less serious and less alarming. Although still problematic, obviously, this possibility is decidedly different from the claim that White people simply do not care about Black people.

Race relations

Lastly, the present findings may have important implications for race relations. Acknowledging the hardship Black people have faced and continue to face is an important step toward redressing racial disparities. It may, however, come with unintended consequences. It may lead to the assumption that Black people actually feel less pain than do White people and serve to justify the neglect and exploitation of Black Americans. If we presume that Black people feel less pain, then we might feel justified providing less aid to disadvantaged Black people. This may have been the case in the wake of Hurricane Katrina. Research has shown that participants were less likely to help Black versus White victims of Hurricane Katrina to the extent that they dehumanized Black people, to the extent that they denied Black people the human experiences of emotional and perhaps physical pain (Cuddy et al., 2007).

Moreover, if we presume Black people feel less pain than do White people, we might feel justified exposing Black people to harmful conditions. Wallace (1990), a feminist author, has

alluded to this in the case of the Strong Black Woman. She notes, "Because she is not simply a woman or a human being but a 'superwoman,' she cannot be victimized and therefore does not suffer under her circumstance, no matter how extreme" (p. 25). Research suggests that this sort of complacence is common and could affect the lives of Black people more generally. For example, research suggests that people are more willing to place a chemical plant near a Black (versus White) neighborhood (Bonam, 2010; Bullard, 1990). One reason might be that people assume that Black people will be less affected than White people.

To be clear: we are not advocating that people not acknowledge the hardship Black people have faced. Rather, we are suggesting that people acknowledge that *everyone* faces hardship – some more than others – in spite of our shared capacity to feel pain. In doing this, we can acknowledge that those who face more hardship need *more*, not less aid.

Final Remarks

The belief that Black people feel less pain than do White people remains in our collective consciousness in spite of changing cultural mores. People assume that, relative to White people, Black people feel less pain in part because they assume Black people have faced more hardship. At first blush, this assumption seems benevolent, even progressive. It acknowledges the hardship Black people have faced and glorifies their resilience and strength. Indeed, some believe that Black people have superhuman strength. The problem with these seemingly complimentary beliefs is that they may lead to racial disparities in pain management, leaving Black patients to endure more suffering. Interventions to reduce this bias will need to occur early in development and/or challenge basic assumptions about race, status, hardship, and the relationship between hardship and pain. These assumptions are embedded in our cultural narratives, and as such, reducing this bias promises to be difficult. But in time, research developing and testing interventions aimed at reducing this bias in pain perception may decrease racial disparities in health care and health and improve race relations more generally.

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Short Biographies

Sophie Trawalter is an Assistant Professor of Public Policy and Psychology at the University of Virginia. She studies intergroup relations. The aim of her work is to understand the pitfalls, challenges, and opportunities of diversity. Trawalter earned a BA in Psychology and BS in Mathematics at the University of North Carolina at Wilmington, and an MA and a PhD in Psychological and Brain Sciences at Dartmouth College. She was awarded a National Institute of Health NRSA postdoctoral fellowship at Cells to Society: The Center on Social Disparities in Health at the Institute of Policy Research, Northwestern University. Before joining the Frank Batten School of Leadership and Public Policy at the University of Virginia, she was an Assistant Professor of Psychology at the University of North Carolina at Chapel Hill.

Kelly Hoffman received her BA in Psychology and English from Bucknell University and is currently a PhD student in the Department of Psychology at the University of Virginia. She studies prejudice and discrimination, and people's perceptions of prejudice and discrimination more specifically. Her work aims to close the "perception gap" between majority and minority group members, which may in turn reduce intergroup tensions.

Notes

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[1] Results revealed the opposite pattern when the target faces were presented more slowly. Mathur and colleagues proposed that participants may have been compensating for known racial disparities in suffering. While entirely plausible, it is not an effect we find in our own work. Future research will need to examine whether methodological and/or conceptual differences (e.g., between- versus within-participants designs, absolute versus relative judgments) might account for these differences.

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