Stereotype Threat and Health Disparities: What Medical Educators and Future Physicians Need to Know

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Patients' experience of stereotype threat in clinical settings and encounters may be one contributor to health care disparities. Stereotype threat occurs when cues in the environment make negative stereotypes associated with an individual's group status salient, triggering physiological and psychological processes that have detrimental consequences for behavior. By recognizing and understanding the factors that can trigger stereotype threat and understanding its consequences in medical settings, providers can prevent it from occurring or ameliorate its consequences for patient behavior and outcomes. In this paper, we discuss the implications of stereotype threat for medical education and trainee performance and offer practical suggestions for how future providers might reduce stereotype threat in their exam rooms and clinics.

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In an experiment that is now considered a modern classic in social psychology,[1,2] black and white undergraduates at the University of Michigan were given a test comprised of difficult items from the verbal section of the Graduate Record Examination. Half of these students were told that they were taking an intelligence test; the other half was told that the test was not diagnostic of intellectual ability. In a stunning finding (since replicated numerous times), black students performed worse than their white counterparts when the task was framed as an intelligence test, but performed equally well as whites when the test was framed as non-diagnostic of intelligence.

INTRODUCTION

Claude Steele and Joshua Aronson, the authors of the above study, coined the term "stereotype threat" to explain this pattern of results.[2] Stereotype threat occurs when cues in the environment make negative stereotypes associated with an individual's group status salient, triggering physiological and psychological processes–including anxiety,[3] negative cognitions and emotions,[4,5] physiological arousal,[6,7] and reductions in performance expectations,[8,9] effort,[10] self-control,[11] and working memory capacity[12]–that have detrimental consequences for behavior. (See Fig. 1.) Stereotype threat has been shown to lead to lower performance on tests of intellectual ability for blacks,[2,13,14] Latinos,[14,15] and low socio-economic status individuals;[16,17] poorer math performance among women;[3,13,14] poorer social skills among individuals with schizophrenia;[18] and poorer performance on tests of cognitive ability for the elderly,[19–22] drug users,[23] and individuals with mental illness,[24] and head injuries.[18,25] Stereotype threat has also been shown to lead individuals to discount the importance or validity of performance feedback, such as believing that the results of math tests or intelligence tests are unfair.[26,27] Individuals may also "disengage" from domains that are perceived as threatening, in which they view the domain (e.g., academics) as unimportant.[28] In the longer term, stereotype threat can result in *disidentification*, in which minorities define their group's identity in ways that distinguish it from the majority group and no longer view the domain as central to their identity, and as a result, stop expending effort in this domain.[29,30] Stereotype threat has also been shown to alter professional aspirations[31] and to produce more guarded ways that members of different groups interact with each other.[32]

In this article we draw upon empirical studies on stereotype threat, including meta-analyses and systematic reviews,[13,14,33] to gain insight into potential sources, consequences of, and ways to reduce stereotype threat for minority patients and for minority and non-minority medical trainees.

STEREOTYPE THREAT AND MINORITY PATIENTS

Potential Sources of Stereotype Threat in Clinical Settings

Qualitative studies of minority patients suggest stereotype threat is likely to be triggered by features in the clinical setting that makes salient the stereotype of minority patients as unintelligent,

Figure 1. Sources, mechanisms and consequences of stereotype threat.

"second class citizens"; and unworthy of good care (i.e., wasting the provider's time).[34–38] This experience of stereotype threat in healthcare settings is illustrated by the following quotations:

> "My name is... [a common Hispanic surname] and when they see that name, I think there is...some kind of prejudice of the name...there's a lack of respect. They think they can get away with a lot because "Here's another dumb Mexican."
>
> –Mexican American patient (p. 393)[36]

> ...The system gets the concept of black people off the 6 o'clock news, and they treat us all the same way. Here's a guy coming in here with no insurance. He's a low breed.
>
> –Black patient (p. 2071)[35]

Such beliefs are likely to have multiple causes, including experiences of discrimination and disrespectful treatment in healthcare and in other settings, and more subtle perceptions of being perceived stereotypically by healthcare professionals.[39–41] Indeed, evidence shows that healthcare providers hold conscious and unconscious negative stereotypes of non-white patients, tending to view them as less educated and less likely to be adherent than their white counterparts,.[42–46] However, the important point about stereotype threat is it can occur regardless of whether or not the provider holds negative racial stereotypes or manifests racial bias. Rather, stereotype threat is aroused by the *target's* activation of a specific stereotype about a social group to which he or she belongs.[47]

Potential Consequences of Stereotype Threat for Minority Patients

1. Adherence to treatment. Stereotype threat might contribute to racial disparities in non-adherence to treatment in three ways.[48–54] First, numerous studies have shown that stereotype threat reduces working memory capacity[12,55] and cognitive performance.[13] In clinical encounters, this would translate into diminished ability to process information and follow treatment instructions. Second, stereotype threat has been shown to have negative effects on performance expectations,[8,9] and self-control.[11] For patients, this might translate into both lowered self-efficacy regarding ability to adhere to treatment. Third, stereotype threat has been linked to lower effort,[10] potentially translating to lower motivation to adhere to recommendations.
2. Communication. Because it increases anxiety[3] and physiological arousal, [6,7] stereotype threat might impair the patient's communication skills, reducing fluency, self-disclosure, and response to the provider's questions. Stereotype threat, then, might be one factor underlying poorer quality of clinical encounters for black compared with white patients (e.g., lower levels of positive affect, patient participation, shared decision-making; and less time spent by providers in relationship-building behaviors.)[56–59] Poorer and less participatory communication is associated with lower patient adherence, utilization, self-management, and symptom recovery.[60–67]
3. Discounting feedback. Stereotype threat also has been shown to lead individuals to discount the importance or validity of feedback in domains in which he or she feels threatened. [26,27,68] In the context of healthcare. a diabetic patient experiencing stereotype threat might discount feedback about elevated HbA1c levels, or a smoker might dismiss information about the negative effects of smoking.
4. Disengagement. Stereotype threat is an unpleasant experience and may lead to avoidance of and disengagement from situations in which the threat occurs.[33] If going to the doctor engenders feelings of inferiority, the patient might be more likely to avoid those experiences. This might help explain greater likelihood among minorities of missing appointments,[69] and delaying or failing to obtain needed medical care and preventive health care services.[40,53]
5. Disidentification. Disidentification—a long term consequence of stereotype threat in which individuals cease to identify with the domain within which they consistently experience the threat[70]—would help explain the tendency of racial/ethnic minorities to view health promotion behaviors (e.g., exercising and healthy eating) as "white" and unhealthy behaviors (e.g., eating fast food and red meat) as characteristic of their racial/ethnic group.[71] This is problematic since individuals are more likely to engage in behaviors that are central to their self-concept.[72,73] Thus, a minority patient may, because of disidentification, detach her identity from the value of living a healthy lifestyle–no longer viewing health behaviors as important to self-worth. This may reduce motivation to adhere to medication, diet and lifestyle recommendations.

6. Reinforcing of stereotypes. If experiencing stereotype threat leads minority patients to behave in ways that are consistent with stereotypes, the provider's racial stereotypes are likely to be reinforced. Hence, providers may be more likely to use race in making clinical decisions, resulting in racial disparities in processes and outcomes of care.[42–44,74]

Reducing Stereotype Threat for Minority Patients

As Steele has argued, "even though the stereotypes held by the larger society might be difficult to change, it is possible to create niches in which negative stereotypes are felt not to apply."[75] That is, stereotype threat, which is elicited by specific cues in a setting, can be avoided or ameliorated directly by managing the signals present in that context, creating "identity-safe" environments that "challenge the validity, relevance, or acceptance of negative stereotypes linked to stigmatized social identities."[31](p. 278) Even small changes, such as giving an individual the opportunity to affirm his or her valued characteristics,[76,77] can have important, immediate effects. Below (and summarized in Table 1) we explore how physicians can cultivate "identity-safe niches" in exam rooms and clinics.

1. Elicit the patient's values and strengths. In field and laboratory experiments with female college students,[76] African American seventh grade students,[78] and white college students,[79] those who were randomly assigned to engage in "self-affirmation" (i.e., to focus on and affirm their valued characteristics and strengths) were less likely to experience the adverse effects of stereotype threat on academic performance than those who were not. Moreover, in one study, the benefits of self-affirmation persisted two years after the intervention.[77] This research underscores the importance of giving patients from stigmatized groups the opportunity to demonstrate their competence, intelligence, and worthiness. For instance, in discussing a health problem that will require significant behavioral change, the physician might ask the patient about a time in his life in which he has dealt with a significant challenge, and encourage him to discuss the qualities within himself that helped him overcome it. This emphasizes that the provider cares about and values the patient's unique perspective and hence should help diminish the patient's fear of being viewed stereotypically.[62]
2. Invoke high standards and assurance of the patient's ability to meet those standards. Studies conducted in educational settings suggest that critical feedback that invokes negative racial or ethnic stereotypes related to intelligence or capability is likely to be particularly threatening for members of minority groups.[80] As a result, minority patients might discount this feedback by *disengaging* and eventually might *disidentify* with the domain. In primary care, raising concerns about non-adherence, smoking, or excess weight, then, have the potential to activate stereotype threat, and diminish motivation to change.[80] Evidence from two laboratory experiments suggests that performance feedback is least likely to activate stereotype threat when it communicates high performance standards with assurance that the individual is capable of meeting those standards.[80] The provider then, might emphasize that she is setting "a high bar" for the patient because she is confident that he will be able to be successful (e.g., at behavior change, at achieving health-related goals). This style of feedback is associated with increased acceptance of the feedback and motivation to improve[80] and is likely to enhance patient adherence to treatment protocols.[62]
3. Provide external attributions for patients' anxiety and difficulties. One way in which stereotype threat impairs performance is by engendering anxiety and negative thoughts about one's abilities, such as one's lack of intelligence or competence. Several experiments have been able to reduce stereotype threat by getting individuals to attribute anxiety and/or task difficulty to external circumstances rather than lack of ability.[81,82] In clinical settings this might entail a provider checking in with a patient who seems anxious and distracted, reassuring her that such feelings are widespread among patients and offering her practical coping techniques (e.g., take a friend or family member with her, come into the exam room with a few questions, etc). Similarly, for a patient who has had difficulties adhering to treatment, the provider might explain how these are common problems for patients; help identify barriers to adherence, and work together to come up with a plan to overcome them.
4. Provide cues that diversity is valued. Recent studies point to the importance of creating environments that signal that diverse racial and ethnic groups are valued. In one series of studies, black professionals were presented with corporate materials in which the company's philosophy about diversity (a "color blind" approach in which a diverse workforce was trained to "embrace their similarities" versus an approach that touted the benefits of diversity) and minority representation (low versus high) were systematically varied.[83] Identity threat was most activated in settings in which there was a low minority representation *and* when the company advocated a color blind philosophy. Interestingly, explicit information that the company valued diversity offset the stereotype threat associated with low minority representation. To the extent that providers have some control over how their particular clinic or facility is run, they might be able to create an identity-safe environment by signaling that they value racial and ethnic diversity. Steps should be taken to ensure high standards of treatment by all employees so that all patients feel valued. Physicians might consider posting "mission statements" that state their commitment to diversity, which could be reinforced by cues in the physical environment, such as images of highly valued ethnic minority role models and artwork that reflects the achievements of the community. Finding ways to communicate an inclusive and welcoming environment is integral to reducing stereotype threat and promoting optimal health and health-seeking behaviors, especially for underserved and minority patients.[84]
5. Recruit and retain underrepresented minority providers. In a number of experiments, exposure to African American and female role models who behaved in counter-stereotypic ways reduced the effects of stereotype threat on performance among women and African Americans.[85–91] This underscores the importance of recruiting and retaining medical students from underrepresented minority (URM) groups, since the presence of URM physicians will help provide an identity-safe environment. Unfortunately,

the considerable evidence that stereotype threat diminishes the academic performance of URMs,[13,92] suggests that the same processes occur in graduate medical education, diminishing the goal of increasing the number of URM physicians – a point which we expand upon in the following section.

STEREOTYPE THREAT AND UNDERREPRESENTED MINORITY TRAINEES

Stereotype threat might also influence patient outcomes through its effect on diversity of the health care work force. Many policy-makers and medical educators have postulated that racial disparities in healthcare could be decreased by increasing the number of physicians from underrepresented minority groups (blacks, Native Americans, Mexican Americans, and mainland Puerto Ricans), who currently comprise only about 6% of practicing physicians.[93–96] In addition to the potential of URM physicians to reduce stereotype threat, they also are more likely to practice in underserved areas, treat minority patients, and have greater cultural competency with members of their own minority group.[93–95]

Unfortunately, there are a number of barriers to increasing the number of URM physicians in the workforce in the United States—some of which may be caused or made greater by stereotype threat. These barriers include lower rates of college matriculation and graduation among URM groups;[93] lower acceptance rates to medical school due largely to lower scores on the Medical College Admission Test (MCAT);[93] and poorer performance in and higher rates of attrition from medical school.[97–100] Moreover, because they tend to score lower than non-URMs on Step One of the United States Medical Licensing Exam (USMLE), they are less likely to be offered a residency interview.[101] In addition, members of URM groups tend to perform less well in medical school than their MCAT scores predict, in contrast to whites who tend to perform better than predicted by MCAT scores.[14,73,98]

Numerous studies documenting the deleterious effect of stereotype threat on academic performance[13,14,33] suggest that stereotype threat might play a role at each of these junctures–reducing the performance of URM undergraduates in college, decreasing their likelihood of graduating, diminishing their performance on the MCAT, USMLE, and other tests,[14] contributing to apprehension and reticence during clinical clerkships, and potentially reducing evaluation of their clinical performance.[102] In addition to the sources of stereotype threat present in standardized testing situations, URM trainees are likely to experience other cues that activate threat, such as being mistaken for housekeepers, orderlies, and nurses; feeling socially and numerically isolated among white-majority medical school cohorts, experiencing a lack of URM faculty role models, discrimination, and feeling pressure to represent their entire race in the classroom and in clinical settings.[103,104] The following quotation exemplifies the predicament in which URM trainees may find themselves.

> There were 150 students in my class, 13 were black, five of the blacks graduated…It was hard to stay focused. I had to put extra energy into the work. People were looking, people were watching. The assumption was, 'You're dumb." You have to maximize everything. For example, a white boy goes into class to take a test and he just has to worry and concentrate on the test. Every time a black boy goes into the class he has to try hard to stay focused on the work, on the content, because he's worrying about what the professor thinks of him, what the other students think of him, whether or not he has on the right clothes, or is acting the right way…etc…There's just a lot of garbage that you end up fighting off and trying to spend all your energy being focused.
>
> –African-American female physician[105] (pp. 807–808)

Reducing Stereotype Threat for URM Trainees

There has been little attention to stereotype threat among medical students, with only one published article describing an attempt (unsuccessful) to reduce stereotype threat among URM medical students.[106] Studies conducted with other populations suggest potential strategies to reduce stereotype threat among medical students and trainees (See Table 1).

1. Create identity safe environments. As discussed above, the likelihood stereotype threat will occur is reduced in the presence of cues indicating an identity-safe environment (e.g., high minority representation, valuing of diversity) but is increased by cues indicating identity threat (e.g., indications of prejudice; low minority representation; "color blind" philosophy). [83,107] In creating identity-safe environments, an obvious place to start is to reduce the discrimination, harassment, verbal abuse, and disrespectful treatment that is experienced by many trainees but is most likely to be experienced by blacks.[108–110] Although such mistreatment is harmful for all students, it is likely to be particularly threatening for members of minority groups, who are faced with the possibility that such mistreatment is due to their race. Medical schools might also emphasize that the program values multiple perspectives and views diversity as an asset;[73] and increase efforts to recruit and retain minority faculty. There is also evidence that cues indicating "high fairness" (in this case, auditing practices that guard against discrimination) can increase trust and reduce identity threat among ethnic minorities, even in settings with cues that invoke stereotype threat.[83]
2. Incorporate strategies to reduce stereotype threat in standardized testing situations. It is recommended that existing stereotype reduction strategies that have successfully reduced the racial achievement gap in standardized testing and academic performance be incorporated in graduate medical education and existing programs designed to prepare undergraduate URM for medical careers. This includes modifying test instructions to reduce the salience of race and ethnicity by having individuals identify their demographic characteristics at the end rather than the beginning of a standardized test,[111,112] and teaching students about stereotype threat before taking the test.[82] It is important to note, however, that the single study we were able to locate, which adapted a prior intervention that successfully reduced the negative effects of stereotype threat among African American adolescents

Table 1. Strategies to Reduce Stereotype Threat for Minority Patients and Minority and Majority Trainees

	Target of strategy		
Interventions that reduced stereotype threat	Minority patients	Minority trainees	Majority trainees
Self-affirmation exercise[76–79]	Teach providers to elicit the patient's values and strengths in clinical encounters	Provide opportunities to affirm values and strengths during medical education	Provide opportunities to affirm their egalitarian values before activities that may activate fears about own racism (such as cultural competency training)
Performance feedback that communicates high standards with assurance that the individual is capable of meeting those standards[80]	Teach providers to invoke high standards and assurance of the patient's ability to meet those standards	Teach medical school faculty to provide feedback to trainees that invokes high standards and assurance of the trainee's ability to meet those standards	
Encouraging individuals to attribute anxiety and/or difficulty to external causes[81]	Teach providers to provide external attributions for patients' anxiety and difficulties	Create opportunities for trainees to attribute difficulties to external causes	
Education about the possible effects of stereotype threat on performance[82]		Educate minority trainees about the effects of stereotype threat on academic performance	Educate white trainees about the effects of stereotype threat on communication with minority patients
Cues indicating an identity-safe environment (e.g., high minority representation, valuing of diversity)/absence of cues indicating an identity threatening environment (e.g., indications of sexism; low minority representation; "color blind" philosophy) [83,107]	Provide cues that diversity is valued and ensure respectful treatment by all staff	Provide cues that diversity is valued and recruit/retain minority faculty and students. Reduce discrimination, harassment, verbal abuse, and disrespectful treatment	
Cues indicating "fair practices" (auditing practices to guard against discrimination)[83]	Provide cues (e.g., signs) indicating that the clinic is committed to fair and equal treatment	Put into place and make students aware of procedures to monitor potential instances of discrimination	
Exposure to role models who exhibit counter-stereotypic behavior[85–91]	Recruit and retain minority providers	Recruit and retain minority faculty	
Having individuals identify their demographic characteristics at the end rather than the beginning of test.[111,112]		Modify test instructions to reduce stereotype threat	
Promote interracial friendship and communication[29,73,127]		Structured interracial "dialogue groups"[113–115]	Structured interracial "dialogue groups"[113–115]
Adopt a promotion rather than a prevention focus[128]			Frame interracial interactions as opportunities to learn rather than situations in which one will be judged[32]

(a written self-affirmation intervention)[77,78,92] for use with UK medical students was not effective at reducing ethnic disparities in performance on written and clinical assessments,[106] highlighting potential challenges in translating such interventions.

3. Structured opportunities for dialogue among URM and white/non-URM trainees. Structured "dialogue groups" that allow individuals of different races and ethnicities to share and reflect upon their experiences with one another, over a sustained period of time, can help foster interracial/interethnic friendships and increase comfort and understanding between group members.[113–115] Providing white and minority students the opportunity to discuss their academic difficulties also allows minority students to see that the problems they experience are a common consequence of the stresses of medical education rather than due entirely to their race or their individual deficiencies.[29,73]

4. Teach faculty how to provide effective feedback. Medical schools might also teach faculty how to provide effective feedback that emphasizes that the faculty member is using high standards and has confidence in the students' ability to meet those standards, which (as described in the previous section) has been shown to reduce stereotype threat experienced by racial minority students when receiving critical feedback.

STEREOTYPE THREAT AND WHITE TRAINEES

Several studies have shown that white individuals are aware of the stereotype of the "white racist,"[116–119] and that the anxiety associated with this threat has negative cognitive and behavioral consequences: the impairment of working

memory[120] caused by self-regulatory behaviors (e.g., monitoring or regulating one's behaviors to avoid appearing prejudiced),[117,118,120,121] "distancing" behaviors (e.g., fidgeting, avoiding eye contact), and increases in implicit (unconscious) pro-white bias.[79,120,122] In one series of experiments, the threat of appearing racist activated the "white racist" stereotype and led whites to physically distance themselves from African American conversation partners.[32] Interestingly, this distancing behavior was not associated with implicit or explicit racism,[32] suggesting that stereotype threat alone is a sufficient condition for racial bias. Within the domain of healthcare, a recent study found that physicians experience anxiety when interacting with black or Latino patients and that self-reported ratings of interracial anxiety were associated with lower patient ratings of encounter quality among non-white patients.[123]

These consequences of stereotype threat are, ironically, likely to reduce the quality of communication with minority patients and increase the extent to which white providers' diagnostic and therapeutic decision-making will be influenced by racial stereotypes.[42–44,74] It may be that the same patient behaviors that result from the minority patient's experience of stereotype threat (e.g., exhibiting unease, speaking little) are perceived by the provider as evidence of mistrust or disengagement, setting up negative expectations for the clinical encounter.

Reducing Stereotype Threat for White Trainees

Although more research is needed, it is prudent that training aimed at improving the care of minority patients are constructed in a way that minimizes stereotype threat associated with the fear of being perceived as racist. Table 1 provides examples of potential strategies, based on the stereotype threat literature. One study has shown that affirming one's egalitarian values reduced the negative consequences of stereotype threat related to "white racism." Trainees could be given the opportunity for self-affirmation before activities, such as cultural competency training, that might activate stereotype threat among whites. In addition, trainees might be taught about stereotype threat, because this can help reduce it.[124]

It is further recommended that formal and informal educational activities adopt a "promotion focus" aimed at promoting equal treatment of all races/ethnicities rather than a "prevention focus," aimed at avoiding bias. A prevention focus involves a sensitivity to negative outcomes, arouses negative emotions such as guilt and anxiety, and produces an avoidance motivation. An example is "strategic color blindness," in which whites try to "avoid" noticing or mentioning race—a strategy that can increase stereotype threat.[124] By contrast, a promotion focus directs attention to potential positive outcomes and benefits, elicits positive emotions associated with making progress, and generates an approach orientation. This might involve teaching trainees to view interracial interactions as opportunities to learn rather than a situation in which they will be judged.[32] Finally, increasing the number of minority medical students *and* providing structured activities to foster the type of sustained, interracial dialogue that can lead to interracial friendship among medical trainees[125,126] is a particularly powerful, promotion-oriented approach for reducing stereotype threat among white and non-white trainees.

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