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Addressing and Remedying Racism in Medical Education

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ABSTRACT

There is no denying the prevalence of racial inequity in medicine. For decades, various studies have shown us that racial and ethnic disparities exist, and many have made concerted efforts to promote health equity. However, we continue to see these disparities persist. It is becoming increasingly obvious that the emerging driver of this continued inequity is racism. The insidious nature of racism allows it to seamlessly manifest itself at all levels of healthcare, including medical education. However, medical education is where we may find the most success at mediating racism in healthcare due to our ability to mitigate the biases of students before they become practicing physicians. Within medical schools, racist attitudes can be seen in teaching materials, admissions statistics, and even within schools' own cultures. These displays of racism work against our goals of creating racial equity in healthcare and have detrimental downstream effects as students begin treating patients on their own. These detrimental effects are what we are currently experiencing as we have refused to critically examine how our current systems play into inequitable treatment for people of color. Understanding health disparities and the ways in which they emerge from racist systems is vital to providing comprehensive care. Our medical structure, like the other structures in our society, was created to systematically uphold white supremacy. The discussion surrounding race in medical schools, as it is now, is not sufficient to overcome the prevalence of systemic racism and its impacts on the future physicians we are meant to be nurturing. There is no other option but to work towards providing more comprehensive and accurate portrayals of race in medical education as there are very-real world consequences for our failure to do so.

INTRODUCTION

There is overwhelming evidence on the prevalence of racism within medical education and the impact it can have on students and their ability to provide equitable care as they go on to become practicing physicians. Systemic racism has emerged as a major driver of this continued inequity and can be seen manifesting itself at all levels of healthcare (White-Davis et al., 2018). One particular level of healthcare that shows promise in mediating these inequities is within medical education. When analyzed critically, we see that racism presents itself in every aspect of medical education, from teaching materials to admission statistics (Karani et al., 2017). Even more insidiously, we see it in school cultures and climates in the ways underrepresented students are treated and how they self-report their experiences (Karani et al., 2017). Furthermore, what makes the prevalence of racism in medical education all the more worthy of critical analysis is the downstream impacts it has as the students these institutions produce go on to practice medicine. For example, teaching race as a biological category rather than as a social construct can lead to the creation of stereotypes and racial biases that can cause physicians to make assumptions about a patient and their condition prior to being presented any information from the patient themselves (Karani et al., 2017). It is the responsibility of medical institutions to create competent physicians that provide equitable care to all, and this cannot be accomplished until student physicians are thoroughly educated and versed in the history of the systems in which they now are apart of. Medical schools must be able to confront the ways in which our current system allows for minority patients to receive inequitable level of care and the role they play in that system.

BACKGROUND

There are many levels of healthcare that can be targeted to attempt to understand and mediate inequitable health care. One level of particular importance is at the level of medical education. There are three major areas within medical education that are in need of critical assessment and subsequent reform: school admissions, curriculum, and culture. These areas not only control who has access to becoming a physician in the first place, they also have immense impacts on the attitudes and beliefs medical students will take with them as they go on to become practicing physicians.

School Admissions

Exclusory practices within medical education have a longstanding history in the United States. In fact, the first Black U.S. physician, Dr. James McCune Smith, graduated from the University of Glasgow because he was barred from American medical schools due to the color of his skin (Ufomata et al., 2021). If we look back even 60 years ago, we see the systematic exclusion of Black Americans from most medical institutions in America. This is the historical color line in medical education (Ufomata et al., 2021). Many of us would like to believe the discriminatory practices that contributed to the historical color line have since been remedied. However, the data shows that we are, at best, stagnant, if not regressing in our diversification of who is being admitted to medical school. While the current color line may not show itself as rejection letters that write “we are not authorized to consider for admission a member of the Negro race,” like the one received by, now, Dr. Marion Gerald Hood from Emory University in 1959, it still

continues to disadvantage minority students. Students from racial and ethnic groups that have been traditionally unrepresented in medicine (URM), particularly Black, LatinX, and Indigenous people, are faced with significant barriers due to structural racism from a very early age (Ufomata et al., 2021). These students are more likely than their white counterparts to live in low-income communities and attend underfunded school that have high teacher turnover and offer fewer advanced placement courses. This leads to disparities in standardized test scores which ultimately decreases their chances of attaining a higher education (Ufomata et al., 2021). A critical analysis of both the historic and current color line is essential in understanding the myriad of disadvantages systemic racism imposes on URM students before their applications even arrive to a medical school's admissions office.

The Association of American Medical Colleges (AAMC) outlines the racial and ethnic characteristics of total enrolled students in U.S. medical schools from 2020-2021. White and Asian students accounted for majority of enrollment, with 45,738 and 21,510 students enrolled, respectively. Black students only made up 7,126 of those enrolled, while those that identify as Hispanic, Latino, or of Spanish Origin account for 6,295 students and only 183 students enrolled in a U.S. medical school during the 2020-2021 school year were American Indian or Alaska Native (Table B-3: Total U.S. Medical School Enrollment by Race/Ethnicity (Alone) and Sex, 2016-2017 through 2020-2021, 2021). Despite these numbers being higher than previous years and the overall proportion of Black, Hispanic, and American Indian or Alaska Native medical school matriculants having increased between 2002 and 2017, it is not increasing at a rate faster than their age-matched counterparts in the U.S. population (Lett et al., 2019). Essentially, despite

the absolute number of minority physicians having increased over time, the physician workforce is still not demographically representative of the United States population (Lett et al., 2019). This decrease in representation has severe implications in our quest for health equity. Producing diverse groups of physicians is essential in improving health care access for underserved populations and is vital in providing high-quality and culturally effective care (Lett et al., 2019). One study found that Black patients were more likely to trust and take the advice of Black physicians. They also found that Black doctors reduced the cardiovascular mortality gap between Black and white patients by 19% (Evans et al., 2020). Furthermore, a study by Phelan et al. found that the percentage of underrepresented minority students at a medical school also impacted how many students maintained interest in caring for primarily minority patients upon graduation. The research has continuously outlined the importance of having a physician workforce that is demographically diverse and we need to ensure that our medical school admission process reflects this need.

After years of persisting disparities in medical school admissions due to our current admission practices, how can we reform the process to make our physician pool more representative? The first step is adopting a health equity focus within the admissions process. This posits that considerations of race and ethnicity are fundamental components of our identity that should be allowed in the decision process. The United States is a racially and ethnically structured society, to ignore these components of a student would be to deny the structural racism that produced their identities (Ko, 2020). A health equitable admissions process directly translates to creating more equitable healthcare. Our identities affect how we see the world and in turn how and where we will

practice as physicians. The research has shown that underrepresented minorities are more likely to serve communities in need (Ko, 2020). Reforming the admissions process is one of the first steps medical schools can take to create a more representative group of physicians and make health more equitable.

School Curriculum

Medical schools, like all systems, are a direct reflection of the society in which they exist. When critically analyzing the institution of medicine today, we cannot deny its longstanding history of whiteness and its roots in white supremacy (Beagan, 2003). One of the greatest ways this history affects the curriculum is through the teaching of race as a biological concept rather than as a social construct. Scientific research irrevocably shows us that the genetic differences between races are far smaller than those within each race category (Lim et al., 2021). Furthermore, this lack of distinction is exacerbated as race is presented as an independent risk factor for disease in current teaching materials (Ufomata et al., 2021). This presentation can greatly contribute to the creation of bias and subsequent unequal care. Take, for example, the current format of most clinical vignettes that are presented to medical students. They typically begin with the patient's age, gender, and race, but only if the patient is not white (Khan & Mian, 2020). For one, the simple omission of race in these vignettes implies that white is the "normal" and every other patient is a deviation from such (Krishnan et al., 2019). This selective usage of race as an identifier promotes the idea of using automatic associations to help students link specific conditions with a certain stereotypical patient (Khan & Mian, 2020). These

associations then go on to perpetuate stigmas, like when we always present a rash on a patient with white skin but continuously show syphilis on a patient with black skin (Ufomata et al., 2021). This presentation creates unconscious biases within medical students which serve not only to reinforce stereotypes, but also perpetuates knowledge gaps (Khan & Mian, 2020). Another example of how this phenomenon presents itself is in the teaching of sickle cell disease as "an autosomal recessive disease that primarily affects persons of African Ancestry" (Lim et al., 2021). Sickle cell disease is often talked about as a "Black disease" within the medical field and beyond. However, the discussion often left out when teaching about sickle cell disease is the protective nature of the sickle hemoglobin allele against malaria. Students are not taught that those with the sickle hemoglobin allele were less likely to die from malaria so those with the allele, from an evolutionary perspective, had a survival advantage. Considering that malaria endemic regions happen to be in West and Central Africa, where majority of the population is Black, we can see where the correlation originated. However, allowing sickle cell disease to be reduced to being a "black disease" perpetuates harmful stereotypes as the sickle hemoglobin allele is not found solely in Black populations. It is a gene associated with a biological disease, not race and the failure to teach it as such can lead to the creation of harmful stereotypes. While it can be helpful to provide students with common presentations of diseases, it is imperative that medical students are also given social contextualization to prevent biases that can result in missed diagnoses for their future patients (Lim et al., 2021).

The history of white supremacy also persists through multiple racist misconceptions that continue to haunt our medical curriculum and create deep-seeded

biases among our future physicians. Dr. James Marion Sims, who is often credited as "the father of modern gynecology," earned his title by performing surgical experiments on enslaved Black women without anesthesia. His justification being that Black people did not feel as much pain as their white counterparts, a stereotype that exists among medical professionals to this day (Lim et al., 2021). A 2016 study assessing the viewpoint American medical students and residents had about biological differences between Black and white patients' pain tolerance found that over half of them concluded that Black patients may have higher pain tolerances (Lim et al., 2021). These misconceptions go on to have very real consequences on the level and quality of care Black patients receive. In fact, we see that Black patients are less likely to be given the same volume of analgesia as white patients, if they are even given any at all (Lim et al., 2021). It seems incredulous that any educational material that perpetuates such antiquated thinking is still in use, however the persistence of bias among students and healthcare providers proves its existence.

The persistence of race-based medicine is again found in our usage of race correction in clinical algorithms. These race-based algorithms are practice guidelines that adjust or "correct" their outputs based on the patient's race or ethnicity (Vyas et al., 2021). However, it seems that many of these adjustments lead to increased attention or resources to white patients and fewer for racial and ethnic minorities (Vyas et al., 2021). One such algorithm is the the Vaginal Birth after Cesarean (VBAC) algorithm that predicts what the risk of labor is for a patient that has previously undergone cesarean section. One variable used in predicting whether it was safe to deliver vaginally was race, predicting that African American and Hispanic women were more at risk (Vyas et al.,

2021). Research has shown that there are numerous benefits to delivering vaginally, including faster recovery time and fewer complications during subsequent pregnancies (Vyas et al., 2021). However, nonwhite U.S. women continue to have higher rates of cesarean section when compared to white U.S. women, and the use of the VBAC algorithm could be exacerbating these disparities (Vyas et al., 2021). Another race-based algorithms can be found in urology through the usage of STONE scores that predict the likelihood of kidney stones in patients that arrive to the emergency room for flank pain. The algorithm adds 3 points to nonblack patients, causing a higher score and subsequently more emphasis placed on evaluating for kidney stones (Vyas et al., 2021). The creators of the STONE scores provided no basis on why black patients would be less likely to have kidney stones. In fact, it was later found that race is not predictive of the risk of kidney stones (Vyas et al., 2021). We have reached a point in medicine that the emphasis on race as being a biological construct as opposed to the social one it is has become both normalized and legitimized. While the other forms of racism in medical teaching we have seen are more covert, race-based algorithms show us their racial bias outright. We can make every effort to reduce racism in medical teaching by refusing to teach or inadvertently suggest that race is a biological construct. However, we will not be able to definitively reduce the creation of bias' and stereotypes among medical students until we also address how we have allowed those exact stereotypes to pervade the diagnostic and predictive tools they will use as clinicians one day.

While an immense undertaking, it is possible to incorporate an anti-racist curriculum into our medical schools. This curriculum requires us to not only look at the current effects of structural racism on health disparities, but also provide the historical

context behind how we have reached a place in which racism has been declared a public health emergency. In a 2003 study, Dr. Brenda Beagan investigated the impacts of addressing social and cultural issues in medicine on third-year medical students. While the results of her study are not applicable to our discussion of racism within medical schools in the U.S. in 2021, many aspects of her conclusions are applicable. One such conclusion is the inefficiency of taking a "color-blind" approach when dissecting issues of race and racism. Anti-racism curriculum is certainly not "color-blind" teaching. Despite it being a social construction, there is no denying that race profoundly impacts the everyday experiences and life chances of whole groups of people and plays a role in their health (Beagan, 2003). Many, including medical students, faculty, and patients alike, do not have the privilege of ignoring race. Instead, we need to acknowledge the differences while ensuring we do not reinforce hierarchies of racial superiority and inferiority through our teachings (Beagan, 2003). It is still imperative that students be taught about race-based health disparities so that we can move towards reducing them. However, we need to take special care to ensure that racialized health disparities are not just simply named. We must analyze the power and privilege behind why they exist and combat the beliefs they reinforce about racialized groups (Sharma & Kuper, 2016). Medical students should understand that the differences in disease rates and outcomes cannot be attributed to biologically-based racial and ethnic differences, but rather that they are due to disproportionate impacts of structural racism (Ufomata et al., 2021). If students are not made aware of the history and continuation of racism in medicine, the racist ideals that have been perpetuated all these years will continue to not be critically

examined and will live on in medicine, continuously contributing to the disparities we see.

Currently, medical schools have sought to address racism in their institutions through cultural competency. This approach posits that medical students and physicians alike can improve their patient-provider communication by better understanding their patients' race and culture (Krishnan et al., 2019). However, research has shown us that this approach may actually inadvertently reinforce stereotypes and lead to an increase in racial or culture profiling (Krishnan et al., 2019). Researchers Krishnan et al. propose that we instead move towards a structural competency approach to teaching race in medical schools. Structural competency, as defined by Metzl and Hansen, is "the trained ability to discern how a host of issues defined clinically as symptoms, attitudes, or diseases also represent the downstream implications of a number of upstream decisions about such matters as health care and food delivery systems, zoning laws, urban and rural infrastructures, medical inaction, or even about the very definitions of illness and health." Essentially, students must be taught about the continuing manifestations of structural racism through power, privilege, and policy, and how they are all linked to health outcomes (Ona et al., 2020). In addition, cultural competency teaching generally posits that overcoming racial inequities can be accomplished on an individual level, an idea that can lend to a false perception of change and progress.

Beyond moving from a cultural competency to structural competency anti-racist teaching in medical curriculum, we must also incorporate historical awareness. We have seen that much of today's medical teachings are rooted in ideas of white supremacy because those were the systems in which they were created. However, it is not enough

just to combat racist stereotypes in regard to disease pathologies, we must teach students to critically examine the perpetuation of racism in all facets of their future patients' lives. Researchers David and Collins propose we do this by emphasizing that student doctors know the systems that have brought us, and their patients, to where we are now. This includes teaching the policies, laws, and customs that have deprived some groups of opportunities to advance both educationally and financially (David & Collins, 2021). A doctor that is unable to draw on these contexts and has not faced similar disadvantages will be more likely to see their disadvantaged patients as having shortcomings, rather than seeing them as a good person on an uneven playing field (David & Collins, 2021). If we can shift a future physicians focus from the disadvantaged person to the system that continuously disadvantages them, we can create a workforce of physicians that can relate to their patients with solidarity rather than sympathy (David & Collins, 2021).

School Culture

A medical schools' admissions and curriculum both play an integral role in the overall school culture. However, the role medical school faculty play in creating and cultivating this culture by setting the precedent for how race is taught as well as how racism is addressed cannot be understated. We can also predict the effectiveness of a medical school's commitment to creating an anti-racist culture by analyzing the thoughts and feelings of their students of color as well as non-minority students. Overall, looking at the culmination of a medical school's culture is extremely important in determining the

attitudes and beliefs the student doctors will take with them as they become practicing physicians.

Despite being one of many players, medical school faculty play an immense role in the overall culture. At the educator level, faculty are the direct connection between students and the curriculum, including formal and informal instruction, as well as assessment (Karani et al., 2017). Due to their prestige and subsequent influence, the information educators provide sets the foundation for the beliefs and attitudes of their students. However, many educators are not fully prepared to have dialogues about race or racism (Karani et al., 2017). In some cases, this is not the fault of the individual educator as they are often tasked with modeling behaviors and facilitating discussions that have not properly been modeled or taught to them (Karani et al., 2017). In fact, up until very recently, there have seldom been efforts focused on anti-racist teaching and the dialogue surrounding race, racism, and white privilege (Ufomata et al., 2021). However, the structure of our current system makes it so that the simple implementation of anti-racist teaching and dialogue is not enough to cultivate an anti-racist culture within our medical schools. The issue that arises is that our current medical school faculty and educator cohort are predominantly white (Braun, 2017). In 2015, only 7% of full-time faculty at U.S. medical schools identified as Black or Latino, despite their making up 31% of the U.S. population (Karani et al., 2017). So, even in institutions where race and racism dialogue are encouraged, this discrepancy generally leads to white faculty, who have little personal exposure to the complexity of the issue, teaching it to students of color (Braun, 2017). This can lead to the development of stigmatizing or offensive narratives about people of color, including students, patients, and providers of color (Braun, 2017). This is

not to say that every faculty member of color would share a singular worldview on race and racism. However, the lack of a diverse faculty can distort even the most well-intentioned reform initiatives (Braun, 2017). Ultimately, the manifestation of racism within our medical school faculty is two-fold. On one end, many educators are not adequately prepared to have constructive conversations on race, racism, and the prevalence of white privilege in our medical schools. On the other end, these exact factors are what contribute to a lack of diversity amongst the faculty, which greatly impedes any efforts to cultivate an anti-racist culture within a medical school.

As highlighted previously, there is a severe lack of diversity in medicine which is due, in part, to the disproportionate number of underrepresented minority students that do not gain admission into medical school. However, those that do gain admission seldom feel as if their experiences are similar to those of their white counterparts. Underrepresented students have been found to have a greater risk of poor personal well-being, increased stress, depression, and anxiety while in medical school (Karani et al., 2017). Many even reported that their race and/or ethnicity adversely affected their medical school experience (Karani et al., 2017). A study conducted by Ona et al. found that there were also very different experiences of what race and racism meant between white students and students of color in medical school. White students often cited feeling "privileged" in not having to be aware of issues about race and that they had the "luxury" of simply learning about racism. Alternatively, students of color reported that they consistently felt like they were "surviving" and felt challenged in thriving because of the many ways they had to be aware of racism in their everyday lives (Ona et al., 2020). Students of color also described the burden of everyday encounters with racism,

encounters that would leave them “emotionally drained; consistently worried, anxious, or hyper vigilant; and continually distracts them from their medical studies” (Ona et al., 2020).

We also see racism manifest itself in more quantitatively identifiable ways amongst minority medical students. A study found that the odds of attaining membership in the Alpha Omega Alpha National Medical Honor Society for white students was two times greater than for Asian students and six times greater than those for black students. Those rates were calculated after controlling for numerous demographics and educational covariates (Karani et al., 2017). It has also been found that white students were more likely to be described as “outstanding” or “exceptional” on the Medical Student Performance Evaluation (MSPE) than Black medical students (Ufomata et al., 2021). Both of these discriminatory practices impact minority students’ competitiveness on future residency applications (Ufomata et al., 2021).

The evidence of the incredible burden racism places on underrepresented and minority students within medical school is clear. What may be not be as clear is that this burden also affects the choices of non-minority students and the populations they choose to serve as practicing physicians. A study by Phelan et al. found that students lost interest in practicing in underserved areas if they felt less encouraged to interact with those from a different culture or racial group and if they witnessed micro aggressions against minority students. This demonstrates that racism within medical education does not just affect minority students while they are in medical school, it also has negative downstream impacts on patient care as well.

A medical school's culture is vital in creating future physicians that are trained to care for diverse populations. While a seemingly broad concept, this culture can be evaluated through looking at both the attitudes and beliefs of faculty as well as their demographic makeup and the impact current manifestations of racism have on both minority and non-minority students. A school's culture is indicative of their core values and beliefs. It is what teaches students the behaviors they will later seek to emulate as practicing physicians. If we do not take special care to evaluate the areas in which we are getting it wrong, we will continue to nurture medical students that are ill-prepared to face, let alone advocate for, their future patients.

The Impacts of Racism in Medical Education in Clinical Practice

There is overwhelming evidence that racism is present within medical schools. It is in the admissions process, rears its discriminatory head within the curriculum, and even goes so far as to imbed itself within a school's overall culture. The culmination of these factors, among many others, leads to the inadvertent creation of explicit or implicit biases among student doctors. Biases that they continue to carry with them as they become practicing physicians. Biases that ultimately lead to adverse patient outcomes for people of color. These adverse outcomes are something we are already seeing: infants of color die at higher rates, adults of color receive poorer quality care, and children of color tend to get less needed care than their white counterparts (Romano, 2018). The current disparities we are seeing in healthcare will continue to deepen if we fail to confront

racism within the entire medical profession, and medical schools are an especially valuable place to start this conversation. We have seen that the behaviors observed by students in medical school go on to become the behaviors they emulate as practicing physicians. It is our responsibility to remedy the current manifestations of racism within medical school so as not to foster the creation of either explicit or implicit biases within our student doctors going forward. If we do not, we risk further exacerbating the already inequitable care we see today.

The more sinister of the two biases, because of its ability to forego detection, is implicit bias. Implicit attitudes are thoughts and feelings that often exist and are activated outside of our conscious awareness but can be quantitatively measured through instruments such as the Implicit Association Test (IAT) (Hall et al., 2015). A study conducted by Hall et al. found that implicit bias amongst health care providers, in which they had stronger positive attitudes towards white people and more negative attitudes towards people of color, was significantly related to patient-provider interactions. Within these interactions, implicit bias against people of color manifested itself as patients of color experiencing longer wait times for assessment and treatment, providers spending less time with them once they were seen, and lower levels of collaboration between the physician and patients of color (Hall et al., 2015). While less prevalent because of its distinct ability to be seen and more readily corrected, explicit bias amongst physicians does also exist. It has been shown that white health care providers see Black American patients as less intelligent, more likely to engage in risky health behaviors, and less able to adhere to treatment regimens. These providers also saw Hispanic patients as noncompliant and unlikely to take responsibility for their own care (Hall et al., 2015).

However, because of its overt nature, discrimination due to explicit biases has declined. Covert discrimination, however, has been sustained by implicit biases and has furthermore shown to influence provider behavior in ways that perpetuate disparities and inequities in care (Hall et al., 2015).

RESEARCH STRATEGIES

My approach to compiling the information for this paper was to start broadly and narrow my search as I found the most relevant information. I utilized various online journal resources, including PubMed.gov and Walters Kluwer, to find articles from various journals. I also utilized resources such as the American Association of Medical College's website for data on medical school admissions. In some cases, I was prompted to search for an individual journal after it was referenced within an article I was reading. Due to the large numbers of articles offering many perspectives on racism in medical education, I chose to create the outline of my manuscript based on articles that were both especially informative and that were currently relevant. Most of the articles I decided to incorporate into this paper also provided a substantial amount of background as well as actionable steps to remedy the issues they spoke about.

DISCUSSION

The immense disparities in care and outcomes we are currently seeing between patients of color and their white counterparts have become far too great to not be addressed. As the cultivators of future physicians, medical schools must grapple with the role they play in the kind of physicians they wish to create. It may once have been enough to simply acknowledge the racist ideologies and tendencies present in medical school. However, acknowledgement is no longer enough. Medical schools must create policies and reformations within their admissions, curriculum, and culture that are actively anti-racist. In some of these reformations, we may also need to go beyond the four, or so, walls of our individual schools. We have seen how URIM students are disproportionally impacted by structural racism from the moment they are born. While this paper evaluated the impacts of racism in medical school, we could take it even further back to evaluate how the negative effects of structural racism can be mediated. Providing mentoring programs and allocating greater resources for minority students interested in medicine would be a small step in moving towards creating a more equitable playing field. Currently, medical schools are in a unique position in that they have an immense influence over our future physicians and are capable of preventing the creation of negative biases within them *before* they wreak havoc on patient-provider interactions and patient outcomes. Medical schools are the gatekeepers and as such have the greatest capacity to change our current system. The research has shown its necessity and also outlined many avenues on how to do it. To continue on the path we are currently on would be, at best, ignorant and, at worst, lethal.

RECOMMENDATIONS FOR FUTURE STUDIES

It would be my suggestion that future researchers delve deeper into the implicit biases that incoming medical schools have prior to matriculation. While it is extremely beneficial to see the ways our current institutions can create these biases and what can be used to prevent their creation, different methods may be necessary to diminish existing biases among incoming students. In some cases, incoming students have never been exposed to racially and ethnically diverse populations before arriving to medical school. This is especially true if their hometowns or colleges were extremely homogenous, and their medical school is not. This sudden shift in culture can cause extreme anxiety as these students feel ill-prepared to relate to someone racially or ethnically different from themselves. In these situations, many students will already come in with their own set of implicit biases. Research in how to reverse these biases as these students matriculate into medical school could be of especial importance.

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