"How can medical education be improved for the benefit of the patient?"

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Introduction

In 2016, a US study by Hoffman et al found that over 60% of the 418 participating White medical students and resident doctors genuinely believed the false biological stereotype that Black people feel less pain because they have thicker skin. And twelve per cent believed Black people have fewer nerve endings[1]. None of these racist myths are explicitly taught in medical school, of course; but, as we will see, they are not discouraged, either. Where, then, do they come from?

The roots of these false racial myths in medicine can be traced back to the nineteenth century, when such theory was used during the transatlantic slave trade to justify the oppression and dehumanisation of enslaved Black people in Western society. Many prominent physicians of the time were complicit not only in propagating this pseudoscience, but also in exploiting it. Take Dr James Marion Sims for example, the so-called 'Father of Modern Gynaecology' and inventor of the eponymous Sims' vaginal speculum[2]. The racial biases detected among the students and residents in Hoffman's study bear a harrowing resemblance to those of Sims. Between 1845 and 1849, Sims conducted a series of controversial surgical experiments on vulnerable enslaved Black women and girls – without anaesthesia or consent – on the false assumption that Black women felt less pain[3].

Of course, the nineteenth century was a long time ago. You'd be forgiven for thinking the negative consequences of racial bias have disappeared since the abolition of the slave trade, the widespread use of anaesthesia and the mandating of informed consent. But you'd still be wrong. In that same 2016 study by Hoffman, the students and residents who believed that Black people had thicker skin, or fewer nerve endings, were less likely to recommend treating Black patients' pain appropriately[1]. In other words, their racial bias could have resulted in inadequate analgesia for Black patients in real life. And for many racially minoritised patients in the UK, this is exactly their reality. A 2022 UK study revealed that non-White Parkinson's Disease patients suffering from chronic pain receive significantly fewer opioid analgesics than their White counterparts[4]. More recently, Black and Asian women were found to be significantly less likely to receive spinal or epidural anaesthesia during childbirth than their White British counterparts[5].

Evidence for racial bias among medical students and doctors is not limited to the stereotypes surrounding pain perception. A similar US study on medical students in 2015 revealed that Black male patients were assumed to be more likely than White male patients to engage in more

unprotected sex if prescribed Pre-Exposure Prophylaxis (PrEP), resulting in students less willing to prescribe PrEP to Black patients[6]. In 2019, a landmark US study found that race influenced every single step of clinical decision making for advanced heart failure patients. Most concerningly, Black men were assumed to be sicker and less compliant than their White counterparts, ultimately leading to Black men being less likely to be offered a heart transplant than White men[7]. As such, the impact of racial bias for minoritised patients goes way beyond analgesic under-prescribing, even extending into mental health care: one staggering example being the fact that Black people in the UK are almost four times more likely to be involuntarily detained on psychiatric wards under the Mental Health Act. They are also over twice as likely to be physically or chemically restrained, or placed in seclusion, while on the ward[8].

It is clear that in order to achieve more equitable care for racially minoritised patients, these root-cause biases left in the wake of a post-colonial society must somehow be addressed. And when better to do so than during medical school?

Anti-bias training

It was the beginning of my core psychiatry training, four years post-graduation, when I received my first, and only, teaching session to date on racial inequalities (in mental health specifically). And I'm still yet to be educated on addressing racial bias – it wasn't part of my medical school curriculum, nor is it formally part of national medical education. But I come bearing good news: we can get to the root of these racial disparities, because unconscious biases can be unlearnt. And it's better late than never for racially minoritised patients. Research from the US shows that when pre-clinical medical students are educated on bias, they begin to reflect on their unconscious prejudices[9]. All the students did was participate in a determinants of health course, in which they learnt about implicit (or unconscious) bias and wrote a reflective essay on the topic.

Although research into anti-bias training is nascent, there are more promising results. In 2021, the effectiveness of an anti-bias workshop for first year US medical students was studied. The workshop consisted of two sessions of up to 90 minutes, held days apart: the first being a lecture on the psychology of implicit bias, and the second an active learning of clinical bias-reduction strategies that could be adopted when seeing patients. The result? This workshop significantly reduced White students' automatic stereotyping of Hispanic patients as non-compliant.

But medical education institutions don't necessarily need to put on an entire course or workshop series to see results. As a minimum, anti-bias training should teach medical students structured

critical reflection and techniques to actively counter stereotypes[10]. Studies show that raising awareness of unconscious racial bias and racial disparities can be achieved within a single workshop or teaching session[11]. Quicker still, merely completing the Implicit Association Test (IAT) can also raise awareness of bias and trigger discussion and reflection[12]. And given medical degrees in this country take at least four years to complete, there is no excuse for institutions not including a single anti-bias teaching session or requiring students to complete the IAT and reflect on their experience. After all, it is clearly of limited benefit to the racially minoritised patient for medical students to be taught solely about pain medications if they are not going to prescribe them due to bias anyway.

Decolonising the curriculum

But while anti-bias training is clearly important, it is by no means enough to undo the racial inequalities at hand. Because our current medical education system isn't just failing to address racial bias. It's actively reinforcing it. Take the use of race in 'most likely diagnosis' exam question vignettes, for example, which teaches students to use racial assumptions in their assessment of patients[13]. Racial bias is therefore not only going unchallenged throughout medical school, but is encouraged by the mention of race in exams. This could lead to racially minoritised patients being misdiagnosed, and so the cycle of racial bias in healthcare and medical education continues. But breaking the cycle here is simple: medical education has to distance itself from the use of race in exam questions and revision question banks[13].

The mention of race in exams also propagates the false idea of race being a biological construct[13]. Although race has been conclusively shown to be a social, rather than genetic, construct – since the Human Genome Project showed that human beings are 99.9% identical[14] – medical schools still treat race as a biological concept. They continue to do this by presenting race as an independent risk factor for various diseases[15]. Most notably, sickle cell disease. It is still seen as a 'Black disease', even though the HbS allele is not actually associated with race, but rather the biological disease malaria, which just so happens to be endemic in West and Central Africa – where the majority population is Black. Without such social context, medical students may believe there are inherent differences between individuals of different races, thus perpetuating racial bias[13].

In order to counteract this, medical education must be decolonised. That is, removing all traces of these historical racial assumptions from current teaching materials. So, as well as removing race from exam questions, medical students need to be taught the *whole* story when it comes to disease risk factors. Instead of misrepresenting race as a biological risk factor, it has been proposed that

education about the wider social determinants of health and political and historic forces on an individual's health should be formally incorporated into medical curricula[16].

Diversifying the curriculum

So, how else can medical education be improved for the benefit of the patient? The next place to start would be training its future doctors to sufficiently assess the 18.3% of the UK population who identify as non-White[17].

On a late summer afternoon not long ago, I was a senior house officer reviewing a middle-aged Black female patient in a dermatology clinic. When she showed me the dark, irregular skin lesion her GP was worried about, I panicked. I'd never seen a lesion that looked like *that* before. In a hurry, I went to fetch my consultant from next door. But to my surprise, with one quick glance at the lesion, my consultant smiled and said to the patient, 'It's nothing to worry about, it's only a benign lesion called a seborrheic keratosis.' Just before leaving the room, my consultant gave me one last look, her face now filled with disappointment at my false alarm.

Having been a doctor for over three years, and a medical student for six years before that, I should have known better. But it wasn't until the relieved patient left the clinic room that it finally dawned on me: I'd never actually seen a seborrheic keratosis on Black skin before. In fact, I couldn't remember having seen *most* common skin lesions on Black skin. As a Black woman myself, I felt ashamed at the time. But now I know I was far from alone in my incompetence assessing dermatological conditions in people of colour. Yes, I *should* have known better – or, more accurately, I should have been taught better.

For almost two decades now, it has been widely known that dark skin tones are underrepresented in medical images in major dermatology educational resources and general medical textbooks[18,19]. A 2023 UK study found Imperial medical students to be significantly more confident and competent in diagnosing common clinical dermatological presentations (such as shingles, cellulitis and meningococcal disease) on White skin versus non-White skin[20]. This underexposure to clinical presentations on dark skin tones during medical school undoubtedly has negative implications for non-White patients, again putting them at risk of misdiagnosis. It should therefore come as no surprise that one study revealed that 47% of dermatologists report insufficient exposure to patients with darker skin during their medical training[21].

It is unacceptable that a person of colour essentially has a 50:50 chance of meeting a dermatologist adequately trained to accurately diagnose their skin rash. Medical education institutions must do better by sourcing or creating teaching resources with a greater representation of dermatological clinical signs on darker skin. Rather than leaving it up to their racially minoritised students to drive change, such as Malone Mukwende who in 2020 published *Mind the Gap*, a handbook of clinical signs and symptoms in Black and Brown skin, while he was a medical student at St George's, University of London[22].

Conclusion

The patients we treat within the NHS are not only White. And medical education needs to reflect as much. Until this happens, we are underserving at least 18.3% of our patients (all the racially minoritised ones). If medical education's ultimate intent is to benefit the patient, then it must first break free from medicine's racist past before it can step towards a more equitable future. Racial biases remaining in the wake of a post-colonial society must be addressed head-on through training. They must not be perpetuated through medical school exam materials and inadequate context on the wider determinants of health. Institutions must ensure their resources are diverse enough to train their medical students to be competent and confident in managing *all* patients – whatever the colour of their skin. Until these improvements are made, racially minoritised patients will continue to be disadvantaged by biased medical education and healthcare systems.

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