

Black Lives Matter: the impact and lessons for the UK dental profession

Tanaka Kadiyo*¹ and Victoria Mellish²

Key points

Discusses evidence of prejudice and racism towards Black patients, students and staff within UK dentistry.

Explores the impact and consequences of Black under-representation in UK dentistry.

Provides anti-racist recommendations for the whole dental community; working together towards equality and inclusivity.

Abstract

Black Lives Matter represents positive action towards equality and inclusivity. The Black Lives Matter protests remind us that, as a society, prejudices and unconscious bias still exist throughout the world. So, how does this inequality impact UK dentistry and what lessons can we learn?

Black British dentists and dental care professionals (DCPs) are greatly under-represented in the UK workforce. The cause is multifactorial, but clearly measures need to be made from an early age, as Black prospective students have a 19% acceptance rate into dentistry, compared with 54% white and 41% Asian.

As a Black British dental student working with my White British dental tutor, we address barriers that affect Black students and offer recommendations. These struggles are not exclusively related to skin colour, but evidence shows that Black British individuals are more likely to experience detrimental factors.

We recognise that it is not the majority that suffer from under-representation, but the minorities; it filters into all aspects of dentistry, including treatment planning and disease diagnosis. Black DCPs and dentists have a contextual understanding of the barriers their communities face and will prove pivotal in workforce diversification. However, we all have a part to play in improving healthcare quality. Together, we can do more.

Introduction

Black Lives Matter (BLM) has been impossible to avoid in the media recently, with worldwide protests, community rallies, high-profile support, and dental organisations such as the Faculty of General Dental Practice (UK), British Dental Association (BDA) and General Dental Council (GDC) promising their commitment to tackling inequality.^{1,2} While the media focus on the BLM movement has pacified, with fewer local demonstrations and reduced media coverage, as a profession, we must still work towards equality within dentistry.

At dental school, we learn to treat diseases of the oral cavity, but also how to behave

professionally and to treat patients respectfully. It is therefore hard to imagine how a profession committed to treating patients equally can improve with respect to the Black population, but studies show that unconscious bias in dentistry still exists and can have severe repercussions.^{3,4,5,6} Increasingly, dental curricula have included communication skills along with equality and diversity training; however, there will always remain a need for reflection and improvement throughout a dentist's career.⁷ As a Black dental student, pictured in Figure 1 at Queen Mary University of London, I felt compelled to discuss and document the issues that I and others have faced. Working with my White British clinical lecturer, who has taught dental and dental care professional (DCP) students in the United Kingdom (UK) and Australia, we aim to address the impact of prejudice against Black people within dentistry.

Although the BLM movement has raised awareness of systemic racism in communities worldwide, there have been negative

connotations. Those who don't experience day-to-day discrimination are less likely to understand the impact of subtle racism and



Fig. 1 T. Kadiyo at Queen Mary University of London

¹BDS4 Dental Student, Queen Mary University of London, UK; ²Oral Surgery Clinical Lecturer, Queen Mary University of London, UK.

*Correspondence to: Tanaka Kadiyo
Email address: ha17194@qmul.ac.uk

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unconscious bias and are therefore less likely to feel the need to reflect and make changes in their lives. The boundaries of what is acceptable in society, however, have changed, leading to differing opinions and potentially increased tension. Race can be a sensitive subject to discuss, but open conversation presents opportunities to learn.

At university, my peers and tutors have rightfully acknowledged that they still sometimes possess certain misjudgements of a patient based on their appearance and skin colour – but this fear should not limit conversation on such an important topic. The successful drive to promote equality in the gender of dentists shows that the profession can adapt and represent the community it serves.⁸ The aim is to reflect the same normalisation of female counterparts in healthcare professions to the under-representation of Black individuals.

Diversity in dentistry

Historically, dentistry in the UK was largely made up of white male dentists and it was rare to see females or anyone of a different ethnicity.^{8,9} Today, although white people are an ethnic global minority, they still hold great power, control and influence on the dental, medical and educational fields.^{10,11} Since 2001, diversity within the UK has increased significantly and the countries now display a much more diverse population.¹² Healthcare must adapt to these changes; the GDC believe that a diverse workforce reflects the local communities, draws on a broader range of talent, and becomes more efficient and productive.¹³

Meeting the unique social, cultural and linguistic needs of a population has been researched in depth both within and outside of healthcare.^{14,15,16,17} Full representation drives efficiency and effectiveness, but also broadens the insight to potential issues in the system that the majority may not have noticed. The need for diversity is recognised globally, with United States (US) research concluding that it 'increases access to high-quality health care services'¹⁴ and the Australian Dental Association (ADA) recognising that 'health care professionals who have not embraced a clear approach towards diversity, both in dealing with co-workers as well as patients, are unlikely to provide optimally effective care'.¹⁸ The ADA also comment on how a practitioner's self-awareness is crucial, by 'checking if your

Box 1 Mark Twain quote

'Whenever you find yourself on the side of the majority, it is time to pause and reflect' – Mark Twain

normal behaviour is compatible with other people's cultural views'.¹⁸

The 2019 GDC annual report states that the majority of registrants are 'white' (dentists 52%, DCPs 75%), followed by 'Asian or Asian British' (dentists 23%, DCPs 5%), with 'Black and Black British' dentists and DCPs at 2%.¹⁹ However, these results are not fully representative, as 18% of dentists and 16% of DCPs did not disclose their ethnicity. If we were to look only at the dentists which disclosed their ethnicities, the percentage of white dentists increases from 52% to 63%, but that of Black dentists remains unchanged at 2%. While reading these figures, it is important to understand that it is not those in the majority that suffer from under-representation, but the minorities; it filters into all aspects of dentistry, including treatment planning and disease diagnosis.

A July 2020 Freedom of Information (FOI) report shows that there are currently only 624 (1.48%) Black dentists on the GDC register, with a very gradual increase from 589 (1.41%) in 2017.²⁰ Black DCP figures for the same period fluctuated and remained on average at 1,323 (1.85%).²⁰ Contrastingly, statistics from the latest 2011 Census show that 3% of the British population identify as Black, thus highlighting the significant disparity in the workforce.¹²

The significantly low numbers of Black people applying to dentistry is compounded by an excruciatingly lower proportion of applicants who become accepted. In 2014, when 3,410 prospective students applied to dentistry, of the 135 Black students, only 25 were accepted (19% acceptance rate).²¹ This compares with 460 accepted Asian applicants (41%) and 549 accepted white applicants (54%).²¹ Students from white or Asian ethnicities are therefore significantly more likely to gain a place on a UK dentistry degree.

Measures taken to improve Black, Asian and Minority Ethnic (BAME) representation in the dental workforce have been successful, with the number of 'Asian or Asian British' GDC registrants steadily rising year on year. Between 2017 and 2020, 'Asian or Asian British' dentists rose by 722 compared with 35 Black dentists and DCPs by 553 compared with 30 Black DCPs.²⁰

Although effort is required to improve representation of all minority ethnic populations, these results prove that there are risks associated with not separating the terms 'BAME' and 'Black' in dentistry, whereby classifying Black dental students under the umbrella term BAME would skew the results negatively for Black individuals. BAME studies have taken the forefront in recent months due to the COVID-19 outbreak, where grouping minority ethnicities has been necessary in the early stages of research. However, when specific evidence exists, it is important not to generalise (Box 1).

Why does Black under-representation exist in dental school?

The multifactorial nature of dentistry admissions and career progression means that reliable research and tangible suggestions for improvement are limited. Low numbers of Black dental students make it more difficult to identify the specific challenges that affect their progression into the profession, whether this be at the point of obtaining the correct grades, lack of support in admissions or unconscious bias in the interview. A better understanding of the restrictions and barriers comes from those who applied; why were they successful or more importantly, unsuccessful?

Lack of role models

What makes us choose a career in dentistry? A qualitative study looking into the impact of role models in the early stages of a dentist's career reported positive role models playing a significant influence in their professional development.²² With low representation, it is unlikely that any Black students will: have a family member in the profession; receive a talk at school from a Black DCP; or have a Black orthodontist fit their braces, with only 0.8% of UK orthodontists of Black ethnicity.²⁰ Without professionals that can support and guide students, the continuing cycle of under-representation continues, where young Black British children can't envision themselves becoming a dentist or DCP in the UK. By breaking this cycle, we can truly show that dentistry is open to everyone.

Training more Black dentists and DCPs will help to tangibly demonstrate to Black children what they can achieve. However, with the current low proportion of Black dental professionals, increasing the exposure of dentistry to children requires help from the majority. My clinical tutor vividly remembers how a ten-minute presentation from a local female dentist strongly influenced her decision to apply. Dentists and DCPs from all ethnicities can make a substantial difference to the diversity of applicants. Presentations to low socioeconomic schools or an online interview with a local school on careers day can help to present dentistry as an option to students interested in healthcare.

The study into role models in dentistry focused on dental core trainee (DCT) placements, where the junior dentists are exposed to more DCPs, academics and specialists than normally found in general dental practice.²² A commonly quoted example of local influences pushing us to aim higher is Roger Bannister's four-minute mile.²³ In the 1950s, it was thought to be impossible for anybody to run a mile in under four minutes, until the medical student Roger Bannister ran an impeccable 3 minutes and 59.4 seconds. Fast forward one year and a further three runners broke the four-minute mile in a single race! There was no sudden leap in human evolution or specialised trainers; merely the proverbial bar had been raised which allowed the collective mindset of runners to change.

As a fourth-year dental student, I have many positive role models in dentistry, from fellow students to dental nurses and dental tutors, some of whom work in general dental practice and have achievements outside of dentistry. I do not know what my career will hold, but meeting tutors who have additional degrees in law, business and other academic fields shows how being surrounded by role models can be incredibly inspiring and can open up your mind to the possibilities.

Aspirational role models can be close to home or distant luminaries. Fortunately, the numbers of BAME clinical dentistry academics has increased over the past decade, from 14% in 2005 to 27% in 2016; however, the under-representation still exists at the higher levels of professor, senior lecturer and researcher grades in the UK.⁹ On requesting an FOI report, of the 4,376 specialist dentists shown as registered with the GDC, only 74 are Black (1.7%), with nearly half within the oral surgery field (33).²⁰ Interestingly, oral medicine is well

represented with 4.3% of specialists identifying as Black, while the majority of specialities show under-representation with endodontists at 0.3%, prosthodontists at 0.2% and restorative dentists at 0.7%.²⁰

Advances have been made in widening participation to dentistry, with a broader mix of students from mature, Asian ethnicity and state school backgrounds.¹⁷ However, research shows that measures still need to be focused on broadening the appeal of the career and supporting the admissions process for those who are Black, live outside of London and are from lower socioeconomic groups.^{9,17} Although dental school applications are consistently higher from London than other cities across the UK, this is not surprising as it has the greatest ethnic diversity with a high density of dental schools, therefore providing schoolchildren with more exposure to dentistry.^{9,17,21} I am aware of positive action following the BLM protests at my London dental school, where we have an anti-racism steering committee to actively review any racial bias in the curriculum and ensure the welfare of staff and students. However, with 83% of students coming from outside of London and personal reports of students sharing their experiences of racism in dental schools across the UK, it is important that these headlines do not deter potential applicants.^{21,24,25}

Transparency

Personally, I had limited exposure to dentistry, struggled to gain work experience and did not have any direct connections within the dental community – difficulties to which my Black friends and peers have also attested. Fortunately, when I expressed an interest in healthcare, a friend applying to medicine kindly lent me her book on undergraduate applications, but even with guidance I found on the internet, I was shocked to see other students bringing sculptures and drawings to the dental interview. Many universities do not explicitly outline the specific grading criteria or requirements for the interviews, so I felt intense pressure when asked: 'Have you brought any evidence of your dexterity?' On speaking to fellow dental students, this is advice that they commonly received via word of mouth from teachers, family and friends.

My tutor informs me that when I graduate, every dental foundation training and DCT post will have specific criteria for the written application and interview. I feel I would have benefited from this when applying to dental school. Had I known more about the

interview, I would have felt less stress and therefore been able to present my true self more confidently. I understand that providing excessive preparatory information could decrease the integrity of the application process; however, the success of recruiting competent postgraduate DCTs and speciality trainee dentists proves that the provision of transparent criteria is viable. Specific essential and desirable criteria are clearly stated on Oriel, COPDEND and NHS Jobs websites, allowing applicants to reflect on their suitability, prepare their CV and collate supporting evidence.^{26,27,28}

Mock interview videos available online are valuable to students who are unable to practise challenging interviews at school or at home. It may be difficult to find a teacher who can guide a student through their application, particularly if they have often moved schools. Videos created for prospective medical students at Cambridge University show that, even with tangible demonstrations, universities are still able to recruit the most high-achieving students.²⁹ The scoring sheet used at interviews can be requested as an FOI enquiry, but it would be beneficial to have an open version on all dental school websites, along with instructional videos, to allow all students a fair opportunity.

Social media is widening the audience and capturing more prospective dental students, with groups such as the African & Caribbean Dental Association (ACDA),³⁰ Budding Black Dentists³¹ and Melanin Medics,³² to name a few. The COVID-19 pandemic highlighted the growing dependence on the internet to deliver teaching and, unfortunately, increased the digital divide. This prompted the UK government to provide laptops to disadvantaged children, in order to prevent them falling further behind in their education.³³ Nearly all UK children should therefore be able to access these online communities, which continue to grow and provide inspiring talks and interviews from Black dentists, which may become crucial in capturing students from minority ethnic groups.

Undergraduate applications

Black students fare much worse in the undergraduate application process; as previously mentioned, low numbers of Black students apply to dentistry but even fewer gain a place, with 81% unsuccessful in 2014.²¹ In order to remove barriers associated with race, it is important to investigate why these applicants did not gain a place and what

they subsequently went on to do. With the proportion of Black DCPs higher than Black dentists, are students underestimating their abilities before applying? Do the unsuccessful Black dentistry students consider other dental roles or instead lose hope with the profession altogether?

My dental tutor was fortunate with her application; her father was a dentist who gave her advice for her interviews and provided opportunities for her to shadow dentists and DCPs. Although guidance from a dental professional isn't a necessity, it makes a big impact on a student's application. It would be interesting to know whether the unsuccessful Black students had any qualitative guidance available, such as tips on preparation, past questions or mark schemes for dental interviews.

Correlations exist between university applications and a student's ethnic, socioeconomic and regional background.²¹ The UK government states that Black people as a whole are the most likely to live in the most deprived 10% of UK neighbourhoods in relation to housing and services, leading to overlap of these detrimental factors.³⁴ We cannot assume and stereotype students according to their skin colour; on an individual level, a white dental student may be facing more barriers than their Black peer, but it does mean that the chances of experiencing these barriers are higher if you are a Black person.

A scheme utilised by the University of Leeds offers additional qualitative support to UK students who fall under detrimental barriers – such as low household incomes, low-achieving high schools, first-generation applicants, living in areas with low progression to higher education – or those that have lived in public care that show academic potential.³⁵ Students who demonstrate the ability to excel but have been marred by environmental factors are provided with a series of study skill workshops and short assignments marked by a university tutor, with full in-depth feedback on any topic they choose. Successful participants of the scheme who have shown an ability to work hard and have excellent aptitude receive a lower offer of ABB to dentistry, compared to AAA.

A key component of the Leeds scheme³⁵ is the time and support provided by the dental academics. Providing this extra tuition enables a more level playing field for applicants; making the students prove that they are competent avoids positive discrimination. There is a drive to improve the diversity

Box 2 Professor Toope quote

'Stormzy has achieved great success in his career but recognises that this was at the expense of his studies and the option of a place at a top university. The scholarships are a beacon for Black students who might otherwise have felt they could not come to Cambridge'⁴¹ – the University of Cambridge's Vice-Chancellor, Professor Stephen Toope

from within universities, but spreading the message and starting to provide this access nationwide has its challenges. It is, of course, unrealistic to suggest that only those who are under-represented hold the responsibility to push for these schemes nationwide, but by recognising that disparities exist and providing unconscious bias training for interviewers, any prejudice in the interview process for staff and students can be eliminated.

Financial barriers

Financial constraints and debt are a real issue for many dental students, but with evidence showing that Black students are more likely to fall under previously discussed detrimental barriers, they are therefore more at risk of having financial limitations. To put this into perspective, the UK government reports that Mixed and Black households are the most likely out of all ethnicities to have a weekly income of less than £400 at 32% and 35%, respectively.³⁶ Although application advice is available online, there is a prevalence of additional 'getting into dentistry' courses, mock interviews and clinical aptitude test guides, which can exceed £1,000; therefore, those from low socioeconomic backgrounds may find these additional barriers dissuading.

Although it is clear that financial struggles affect all ethnicities, a Black or Asian person under the age of 19 in full-time education is significantly more likely to live in persistently low-income households (16% and 27%, respectively) compared to white households (10%).³⁶ In 2017, the BDA estimated that dental students in England who started in 2017/18 could graduate with £76,055 of debt.³⁷ It has been shown that the increase in student fees to £9,000 in 2012, now £9,250 in 2020, resulted in a reduction of dentistry applicants.^{38,39} While student loans are meant to exist, a limited number of bursaries do exist, a 2017 study highlighted the strong dependence on family financial support, with 77% reporting family contributions towards student expenses.³⁸ Have these financial considerations led to fewer students from low-income households?

With the majority of dental schools in city-based campuses where facilities are spread over a wide area, high living and travel costs rule out studying in places such as London or Edinburgh for some prospective students. Many of my peers at school struggled to afford the travel and accommodation costs for interviews and therefore applied to local universities. Relocating to London from Wakefield increased the challenges that I have faced, from finding affordable accommodation to storing my belongings over the holidays due to luggage restrictions on the coach. Dentistry is an all-encompassing degree; therefore, balancing a part-time job may be unsustainable for some and even more difficult to find with the effects of COVID-19 on the hospitality sector. The sacrifices mean that I rarely visit home, only three times per year, and certainly push those from lower socioeconomic backgrounds away from applying to some dental schools.

High-achieving students from low socioeconomic backgrounds have been shown to underestimate their suitability for selective universities and generally apply to less prestigious institutions than richer peers with similar attainment.⁴⁰ The Stormzy Scholarship introduced last year awards £18,000 per year to two Black UK students to attend Cambridge University.⁴¹ Encouraging and publicising high achievers undoubtedly motivates future applicants, seeing these prestigious institutions as more of an option to under-represented groups (Box 2).

Academic performance

Once at university, statistics on the performance of Black students, specifically in dental school, are limited. However, research in medical education has shown that students of minority ethnic groups, on average, perform significantly worse during their medical degrees, failing medical examinations more than twice as much than their white counterparts.⁴² This phenomenon is classified as 'differential attainment' and persists following graduation, with poorer outcomes seen in UK medical recruitment.⁴² Medicine and dentistry are competitive degrees, with all

successful applicants possessing high cognitive abilities, so why are the students in minority ethnic groups struggling more than their peers in majority ethnic groups?

Further investigation into the specific successes and pitfalls of gaining a dentistry degree will help governing bodies and academic institutions to understand why Black under-representation in the dentistry workforce exists, along with differential attainment.⁹ Effective policies, guidelines and strategic planning to improve Black representation in dental school and beyond will require input from those of Black ethnicity to gain a qualitative understanding of the barriers. The BLM movement has highlighted the need for people to be listened to and heard; opinions may differ, but by working together, the diversification of the dental workforce will be successful.

The impact of racial prejudice in dentistry

What we can't see, can't hurt us?

'Although one in four NHS staff are from a BAME background, they were found to be significantly more likely to be disciplined by white staff members and experience harassment, bullying and discrimination at work from colleagues and managers compared to their white colleagues.'⁹ Each patient, DCP and dentist has their own story of experiences shaped by their local communities, producing individuals who have a contextual understanding of the needs of their community. There are many unseen struggles that every person faces; only through conversation can we start to understand and respect our differences.

The BLM movement has opened the dialogue further and I am pleased that my dental tutor has worked with me on this article, for a lack of research is hindering proactive plans in tackling Black under-representation. Parallels in the consequences of under-representation can be drawn with the online algorithm used for checking British passport photos.⁴³ The automated tool checks the uploaded photo, looking for neutral expressions and closed mouths, but surprisingly it has been found that faces with black skin are less recognised.⁴³ The cause, however, is easy to see – when data are collated from a predominantly white population, then the automated system will become biased. The computer scientists may not have been aware of their unconscious bias or realised the impact of their behaviours, but it is encouraging to see that the service strives to improve.

Direct racism

My tutor and I have experienced both unconscious bias and racism within the dental profession. My tutor had a colleague who claimed that the style of a Black female student's hair was unprofessional; on questioning, the colleague had misunderstood the difference between dreadlocks and braids. She also reports that, while working in Australia, she was sometimes shocked by comments regarding the Aboriginal and Torres Strait Islander population (hereafter referred to as Indigenous). However, she is proud to have worked at a university where the dental school were actively tackling the under-representation of Indigenous dentists.⁴⁴

It is difficult for those who have not experienced any racial abuse or prejudice to imagine that this still exists. The level of systemic racism prevalent in the UK really hit home when listening to fellow students speak on a panel discussing BLM with key members of the GDC, who govern education, policy and research. I have heard of students being addressed with excessive slang words and 'fist bumps' by tutors, and of peers feeling hurt after receiving racial comments from fellow students, but many times people don't feel comfortable in reporting issues and instead dismiss comments as 'jokes'. Social media is again opening up the discussion, where students can anonymously or openly reveal their experiences and it is encouraging to see dental organisations holding open forums to listen to first-hand accounts.

Misconceptions

John Brown, an enslaved man on an American plantation, was lent to physician Dr Thomas Hamilton in the 1800s, who used Brown as an experiment, trying to determine how deep black skin went by blistering it repeatedly, as he believed it was thicker than white skin. He obsessed over trying to prove that physiological differences between Black and white people existed. Brown escaped to England and recorded his experiences in an autobiography to educate the world of the tortures he suffered and to promote anti-slavery. His book *Slave life in Georgia* is deeply moving, even more so when listened to as an audiobook.⁴⁵ This shocking story has only been told due to his remarkable escape; with so many untold stories, it is perhaps unsurprising that many misconceptions still exist within healthcare.

It is widely recognised that some physiological differences do exist between ethnicities; for

example, Black individuals are more likely to develop heart disease and diabetes, and to have increased bone density.^{46,47} Black UK communities have also been disproportionately affected by COVID-19, with the number of hospital deaths being four times higher than expected within Black African populations, 2.5 times higher within Black Caribbean groups and 1.6 times higher within 'other BAME' groups.⁴⁷ Although these statistics do not indicate whether the increase is due to physiology or environmental factors, we can use these facts to tailor our approach when taking medical histories, treatment planning patients and discussing risk assessments with staff.

Healthcare professionals are adept at adhering to evidence-based guidelines and working with scientific facts. It is therefore surprising to read results of a 2016 study in America which discovered that belief in falsehoods still exists in the community, such as 'white people have larger brains and more efficient respiratory systems than Black people' and 'Black people have stronger immune systems'.⁴⁸ Shockingly, participants were medical students and qualified doctors, thus highlighting the need to address racial misconceptions in depth at a university level, in order to dispel harmful myths, and to research whether these views exist in neighbouring populations such as the UK.

Clinical misdiagnosis

While revising oral medicine and human diseases, I have often thought that the words I read in my textbooks and e-learning resources, such as 'pallor', 'reddening' and 'blushing', are not as applicable to many of the students on my course in Whitechapel. Clearly, skin and mucosal surfaces are affected by different skin tones, but I and my peers at university have noticed that, although the ethnicity of patients is discussed, there is a limit to the depth of knowledge on this topic.

With the large Asian population in Whitechapel, paired with bilingual members of staff and students, it has become easier to understand the transcultural presentation of habits such as paan consumption, allowing raised awareness throughout the entire profession. Authors of dentistry textbooks and learning resources are those in academia, but with low numbers of Black dental academics and specialists, there may be a relationship between the under-representation of Black individuals in dentistry and the low volume of educational resources regarding darker skin tones.^{9,20}

My views are also reflected in medicine; one Black medical student studying in London has successfully released a 2020 handbook focusing on clinical manifestations of disease in black and brown skin.⁴⁹ The author comments on how he noticed a lack of teaching about conditions on darker skin tones and is using the success of the handbook to further education in this subject around the world.⁴⁹ Medical doctors reporting on the handbook have expressed their insights into how a 'lack of awareness about skin of colour could lead to misdiagnosis or incorrect treatment.'⁵⁰ The Australian Medical Council has welcomed the resource, where disparities in healthcare exist regarding the Indigenous population, who make up 3% of the total population.⁵¹ The handbook has also been recognised by the General Medical Council medical director, who states 'we will work with the UK's medical schools on guidance that includes ethnically diverse examples of case presentations in their curricula.'⁵²

In dentistry, it is important to be able to recognise inflammation, which manifests distinctly in white skin due to its redness, but is subtler in darker skin.⁵⁰ The red area not only tells the clinician the location, but also 'the severity of the rash and how deep within the skin a rash goes. In patients that have Chinese skin or Indian or African skin, this eczema is often seen as little small micro dots around hair follicles, so its actual morphology is different. It's not just colour, it's the shape of the rash that can be different as well.'⁵⁰ When you look at these photos of skin pathology, do they evoke different reactions? Do the conditions on the white skin look more painful than that on black skin, even though they are the same size with equal disease severity? (See Figures 2 and 3).

My clinical tutor remembers the time that she recognised the oral manifestation of leukaemia in an undiagnosed patient while working as a GDP: 'It had been years since I had seen the photo in an old textbook, but somehow I was able to recollect the image. Fortunately, this early recognition meant that the patient could receive treatment quickly'. Increasing the volume of pictorial evidence of oral pathology in different skin tones is needed. More evidence will help myself and others to understand and recognise how lichen planus looks on black skin (Fig. 3) and how perioral pigmented lesions manifest differently. This will not only benefit students but also the wider dental profession, with information

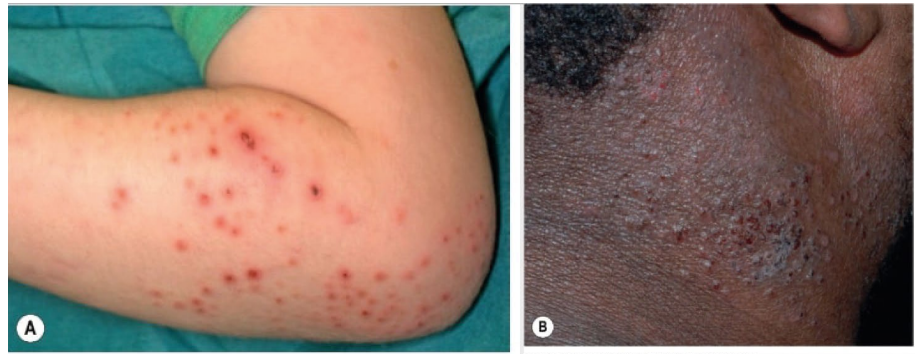


Fig. 2 Eczema herpeticum; grouped punched-out monomorphic erosions with haemorrhagic crusts, reproduced with permission from J. Bolognia et al., *Dermatology*, 2017, Elsevier⁵³

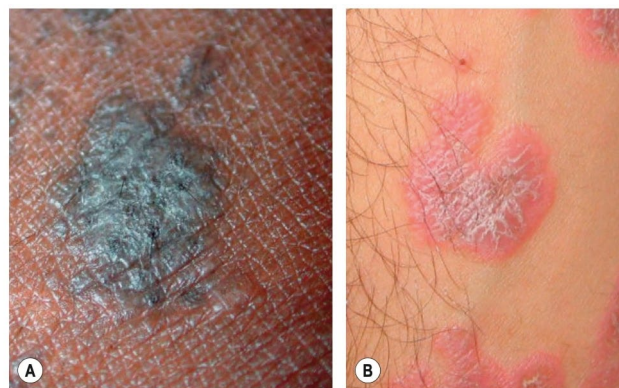


Fig. 3 Lichen planus; the erythematous hue appears brown-black in darker skin tones, with Wickham striae (lacy white pattern) more difficult to see, reproduced with permission from J Bolognia et al., *Dermatology*, 2017, Elsevier⁵³

being distributed through CPD for dentists and DCPs.

With a large proportion of photographs picturing disease on white skin, it follows that misdiagnosis can occur for patients with different skin tones, as clinicians are less exposed to the variations. Although being the minority globally, photographs of white patients dominate medical imagery, with a 2018 study analysing more than 4,000 images in medical textbooks discovering that only 4.5% showed dark skin.⁵⁵ Textbooks such as *Common skin diseases in Africa*⁵⁴ and *Dermatology*⁵³ are breaking this tradition, with authors ensuring that their images show a broad spectrum of skin tones that represent the wider population.

Even in 2020, medical imagery is biased, with the British Association of Dermatologists' website on COVID-19 skin rash containing only two out of 400 images featuring black or brown skin.¹⁰ BLM has raised awareness of the need for inclusivity and has therefore helped to drive the initiative for more educational resources on patients with darker

skin. Mukwende's handbook supports the collection of images from all clinicians; the Black & Brown Skin website (<https://www.blackandbrownskin.co.uk/>) encourages submissions and provides easy access to patient consent forms.⁴⁹

While oral medicine consultants have vast experience and specialist knowledge in recognising differences in the presentation of pathology, it is still the GDP who first examines a patient and holds the responsibility in recognising early signs and symptoms of disease. Clinical examples of misdiagnosis in dentistry could include failure to notice an urticarial response to antibiotics on darker skin, diagnosing leukoedema as leukoplakia, or misdiagnosing a severely infected hair follicle due to folliculitis on a beard as a tooth infection. Creating an online dentistry database of images would help to bridge the knowledge and recognition gap on how ethnicity affects the mouth. Simplifying the process of uploading digital images and gaining consent will increase the utilisation of such a website while maintaining its integrity.

Patches in the mouth are difficult to diagnose, particularly when it is a new patient with a limited history and/or language barrier. Darker skin tones are more prone to hyperpigmentation following any trauma, such as a graze or biting the cheek, and can look more worrying as patches may appear between check-ups. Racial and hyperpigmentation are taught as part of the undergraduate curriculum within the normal anatomy component, but it is worrying to hear that my tutor still sees racial pigmentation being referred to the oral medicine and oral surgery departments on two-week wait referrals, despite no sinister signs or symptoms.

Although rare, there are cases when the opposite happens and sinister features are not acted upon. One such case report displays oral malignant melanoma being misdiagnosed as racial pigmentation for two years before being referred to the oral and maxillofacial surgery (OMFS) department.⁶ Examples such as this can add additional stress and worry for general dentists. It seems that, after dental school, confidence in disease diagnosis may decrease, thus strengthening the need for more research, educational resources and CPD on these topics.

Bias within dentistry

Unconscious bias is present within everyday life and in dentistry. It is difficult to fully eliminate; however, learning about the impact of implicit bias in your decision-making enables you to recognise it in your workplace and make steps to avoid it. My tutor has experienced bias in job interviews, where she was asked whether she was due to start a family soon. She is also aware that many of her students have names that she struggles to pronounce; therefore, to eliminate bias, she asks questions in alphabetical order to ensure that she doesn't focus on anglicised names.

Bias can also manifest in positive discrimination, whereby staff or students are recruited due to their protected characteristics rather than their skill. Universities and workplaces must ensure that they do not set quotas for the number of Black students or staff members, as this is unlawful and violates the Equality Act 2010, but rather ensure that positive action is followed by recruiting candidates on merit.⁵⁶ It is important that all dental professionals recognise the difference between equality and equity, where examples

Table 1 Anti-racist recommendations for the dental team

Role	Recommendations
Clinicians and non-clinical staff	<ul style="list-style-type: none"> Do not assume that you are unbiased Disclose your ethnicity on your GDC profile Do not be blind to skin colour; recognising differences and open discussion is the path to eliminating inequality Dedicate time in your GDC personal development plan and CPD to become more aware of issues related to discrimination, microaggressions, unconscious bias, racial profiling and racism. Suggestions: reading first-person narratives, online unconscious bias tools, online CPD courses and practice meetings to openly discuss views on ethnicity and race Contact local schools to volunteer guidance to under-represented students interested in dental careers. Suggestions: online webinars, in-person or online presentations, attending career days, providing shadowing opportunities and connecting with students on social media⁶⁰
Academics	<ul style="list-style-type: none"> Greater inclusion of black skin examples in undergraduate teaching, examinations and recommended resources^{49,53} Research the student journey; focus on why ethnicity affects university applications and progress throughout training, along with the financial issues affecting prospective and current students Adapt current and/or create new CPD, which includes more discussion on ethnicity. Suggestions: disease manifestation in different skin tones, transcultural oral health, unconscious bias, work experience, managing racist comments, clinical photography and student engagement
Education institutions	<ul style="list-style-type: none"> Improve the transparency of dentistry and DCP application processes Increase online support for students applying to dental courses, through the institution's own website or social media²⁹ Unconscious bias training for interviewers Support schemes and scholarships for students from under-represented communities³⁵ Support creation of a UK online database of dental photographic case examples, in which all dental professionals can contribute⁴⁹
Governing bodies and dental associations	<ul style="list-style-type: none"> Support further research, focus groups and CPD Support local dental professionals on engagement and interaction with under-represented communities Stronger emphasis on anti-racist training in GDC personal development plans and recommended CPD topics

for 'equality' include treating every student exactly the same, but 'equity' would mean that high-achieving students from difficult backgrounds gain more support in order to have a level footing.

Racial bias in dental treatment planning is evident worldwide.^{4,5,57,58} A 2019 cross-sectional survey conducted at King's College London concluded that a patient's race affected the dentist's decision-making.⁴ The survey discovered that, for the same clinical vignette of irreversible pulpitis symptoms, photographs and radiographs, 86% of the dental participants would recommend a root canal treatment for the white patient but only 61% for the Black patient.⁴ Participants were also more likely to say that the white patient would be fearful of dental procedures and well educated!⁴ A similar study in Brazil discovered that Black patients were more likely to be referred for cheaper and more simple procedures.⁵⁷ While a patient has many factors to consider when opting for treatment, the dentist and DCP have a responsibility to provide

unbiased information. Is it informed consent if the clinician has modified the available treatment options due to a patient's skin colour?

Harmful outcomes from racial disparities have been extensively researched in the US, with one 2019 OMFS study investigating the patient's choice of treatment for oral squamous cell carcinoma between different ethnicities.⁵ The study found that, despite statistically significantly better outcomes with surgery rather than chemoradiotherapy, the Black patients were significantly less likely than the white patients to receive surgery.⁵ Further to this, a blinded retrospective analysis to determine the independent effect of ethnicity on analgesic prescriptions in A&E found that Black patients received less analgesia than white patients.⁵⁸ Although they had the same fractures and reported similar pain levels, 66% more Black patients than white received no analgesia.⁵⁸ These results are alarming to see in a westernised population and raise the case for further research in the UK.

Conclusion

I and my tutor feel the presence of Black prejudice and racism, both in and outside the dental community. BLM has been a springboard for further discussion on inequalities within our profession and it is promising to see the increasing visibility of successful Black dental professionals.^{25,59} The evidence, however, clearly shows that the pathway to a dental career is starkly different depending on a student's background and that the consequences of under-representation filter into all aspects of dentistry. Utilising digital resources, providing qualitative support to under-represented students, encouraging local role models, and creating more structured and transparent admissions processes will improve equity in the dental profession.

There is a need for further research into the causes and consequences of Black under-representation in UK dentistry, along with more extensive theoretical and photographic education on the manifestations of disease in black skin. Greater representation will increase the contextual knowledge and understanding of how minority ethnic groups are affected differently in dentistry, both from a patient and clinician perspective. Our governing bodies and universities are actively working on their equality policies, but the wider dental community needs to share this responsibility. For ideas, we have included a range of anti-racist recommendations for the dental team in Table 1, starting with disclosing your ethnicity on your GDC profile. Although our dental profession is under immense strain due to the COVID-19 pandemic, increased awareness and understanding through online education and open discussion is achievable by all and will make a great difference collectively.

References

1. Anonymous. BDA and FGDP(UK) commit to tackling racism and discrimination. *Br Dent J* 2020; **229**: 81.
2. British Dental Association. Black Lives Matter: our commitment, our plan. 2020. Available at <https://www.bda.org/news-centre/press-releases/Pages/Black-Lives-Matter-Our-commitment-our-plan.aspx> (accessed October 2020).
3. Brignardello-Petersen R. There seems to be racial bias when making treatment recommendations for patients with irreversible pulpitis and borderline restorable molars. *J Am Dent Assoc* 2019; DOI: 10.1016/j.adaj.2019.03.014.
4. Patel N, Patel S, Cotti E, Bardini G, Mannocci F. Unconscious Racial Bias May Affect Dentists' Clinical Decisions on Tooth Restorability: A Randomized Clinical Trial. *JDR Clin Trans Res* 2018; **4**: 19–28.
5. Lewis C, Ajmani G, Kyrillos A et al. Racial disparities in the choice of definitive treatment for squamous cell carcinoma of the oral cavity. *Head Neck* 2018; **40**: 2372–2382.

6. Martinelli-Klät C P, Laporte M L, Martinelli C R, Martinelli C, Lombardi T. Oral Malignant Melanoma Initially Misdiagnosed as a Racial Pigmentation: A Case Report. *Dermatopathology (Basel)* 2016; DOI: 10.1159/000444049.
7. Gonzalez M, Abu Kasim N, Naimie Z. Soft skills and dental education. *Eur J Dent Educ* 2013; **17**: 73–82.
8. Sellars S. Diversity matters. *Br Dent J* 2020; **229**: 79.
9. Neville P. Exploring the ethnic diversity of UK dentistry. 2018. Available online at <https://www.mededpublish.org/manuscripts/1496> (accessed December 2020).
10. Geddes L. Covid-19 skin rash website criticised for lack of BAME examples. *The Guardian* (London) 2020 September 28.
11. Singh N. Decolonising dermatology: why black and brown skin need better treatment. *The Guardian* (London) 2020 August 13.
12. UK Government. Population of England and Wales. 2018. Available at <https://www.ethnicity-facts-figures.service.gov.uk/uk-population-by-ethnicity/national-and-regional-populations/population-of-england-and-wales/latest> (accessed October 2020).
13. General Dental Council. Equality, Diversity and Inclusion Strategy 2017–2020. 2020. Available at <https://www.gdc-uk.org/docs/default-source/equality-diversity-and-inclusion/equality-diversity-and-inclusion-strategy-2017---2020.pdf> (accessed October 2020).
14. Cohen J J, Gabriel B A, Terrell C. The case for diversity in the health care workforce. *Health Aff (Millwood)* 2002; **21**: 90–102.
15. Reynolds A, Lewis D. Teams Solve Problems Faster When They're More Cognitively Diverse. 2017. Available at <https://hbr.org/2017/03/teams-solve-problems-faster-when-theyre-more-cognitively-diverse> (accessed August 2020).
16. Deloitte and Victorian Equal Opportunity & Human Rights Commission. Waiter, is that inclusion in my soup? A new recipe to improve business performance. 2013. Available at <https://www2.deloitte.com/content/dam/Deloitte/au/Documents/human-capital/deloitte-au-hc-diversity-inclusion-soup-0513.pdf> (accessed August 2020).
17. Niven V, Andiappan M, Cabot L, Gallagher J. Embarking on a professional career: social advantage in dentistry and medicine. UK dental and medical student applications and admissions, 1996–2011. *Br Dent J* 2019; **227**: 411–418.
18. Australian Dental Association. Diversity in dentistry: The evolving nature of the Australian workplace (1). 2019. Available at [https://www.ada.org.au/News-Media/News-and-Release/Latest-News/Diversity-in-dentistry-\(part-1\)](https://www.ada.org.au/News-Media/News-and-Release/Latest-News/Diversity-in-dentistry-(part-1)) (accessed October 2020).
19. General Dental Council. Registration statistical report. 2019. Available at <https://www.gdc-uk.org/docs/default-source/registration-reports/gdc-registration-statistical-report-2019---final-30-09-2020.pdf> (accessed October 2020).
20. General Dental Council. Information released under the FOI Act. 2020. Available online at <https://www.gdc-uk.org/about-us/freedom-of-information/information-released-under-the-foi-act> (accessed October 2020).
21. Gallagher J, Calvert A, Niven V, Cabot L. Do high tuition fees make a difference? Characteristics of applicants to UK medical and dental schools before and after the introduction of high tuition fees in 2012. *Br Dent J* 2017; **222**: 181–190.
22. Mohamed Osama O, Gallagher J. Role models and professional development in dentistry: an important resource. *Eur J Dent Educ* 2017; DOI: 10.1111/eje.12261.
23. Bannister R. *The Four-Minute Mile*. Guilford: The Lyons Press, 1994.
24. BBC News. Cardiff dental school accused of racism and bias. 2020. Available at <https://www.bbc.com/news/uk-wales-53063867> (accessed August 2020).
25. Bissett G. Black Lives Matter – experiences from the dental profession. 2020. Available at <https://www.dentistry.co.uk/2020/06/16/black-lives-matter-experiences/> (accessed August 2020).
26. Oriol. Oriol landing page. Available online at <https://www.oriol.nhs.uk/Web/Account/LandingPage> (accessed October 2020).
27. COPDEND. UK Committee of Postgraduate Dental Deans and Directors. Available online at <https://www.copdend.org/> (accessed October 2020).
28. NHS. NHS Jobs. Available online at <https://www.jobs.nhs.uk/> (accessed October 2020).
29. Q&J. Medicine Mock Interview (1) – Peterhouse, Cambridge University. 2019. Available at <https://www.youtube.com/watch?v=LaGnlJzpWQ&feature=youtu.be> (accessed October 2020).
30. African & Caribbean Dental Association UK. Homepage. Available online at <https://acda-uk.org/> (accessed August 2020).
31. Budding Black Dentists. Instagram homepage. Available online at <https://www.instagram.com/accounts/login/?next=/buddingblackdentists/> (accessed August 2020).
32. Melanin Medics. Homepage. Available online at <https://www.melaninmedics.com/> (accessed August 2020).
33. UK Government. Get help with technology. 2020. Available online at <https://get-help-with-tech.education.gov.uk/> (accessed December 2020).
34. UK Government. People living in deprived neighbourhoods. 2020. Available at <https://www.ethnicity-facts-figures.service.gov.uk/uk-population-by-ethnicity/demographics/people-living-in-deprived-neighbourhoods/latest> (accessed August 2020).
35. University of Leeds. Access to Leeds. 2020. Available online at https://www.leeds.ac.uk/info/130588/access_to_leeds (accessed August 2020).
36. UK Government. Household income. 2019. Available at <https://www.ethnicity-facts-figures.service.gov.uk/work-pay-and-benefits/pay-and-income/household-income/latest> (accessed December 2020).
37. British Dental Association. Evidence to the Review Body on Doctors' and Dentists' Remuneration for 2018/19. 2017. Available at <https://bda.org/about-the-bda/campaigns/Documents/BDA-evidence-DDRB-2018-19-FINAL.pdf> (accessed December 2020).
38. Boyles, J, Ahmed B. Does student debt affect dental students' and dentists' stress levels? *Br Dent J* 2017; **223**: 601–606.
39. Sá F. The effect of tuition fees on university applications and attendance: evidence from the UK. 2014. Available at <http://ftp.iza.org/dp8364.pdf> (accessed December 2020).
40. Hoxby C M, Avery C. The Missing "One-Offs": The Hidden Supply of High-Achieving, Low-Income Students. 2013. Available at <https://www.brookings.edu/bpea-articles/the-missing-one-offs-the-hidden-supply-of-high-achieving-low-income-students/> (accessed December 2020).
41. University of Cambridge. Stormzy Scholarship for Black UK Students. 2020. Available at <https://www.undergraduate.study.cam.ac.uk/stormzy-scholarship> (accessed August 2020).
42. Woolf K. Differential attainment in medical education and training. *BMJ* 2020; DOI: 10.1136/bmj.m339.
43. BBC News. UK passport photo checker shows bias against dark-skinned women. 2020. Available at <https://www.bbc.com/news/technology-54349538> (accessed October 2020).
44. James Cook University. JCU's record number of Indigenous graduate health professionals. 2019. Available at <https://www.jcu.edu.au/college-of-medicine-and-dentistry/our-people/newsletter/december-2019/jcus-record-number-of-graduate-health-professionals> (accessed October 2020).
45. Brown J. *Slave life in Georgia*. Lexington, KY: CreateSpace Independent Publishing Platform, 2012.
46. Trivedy C, Mills I, Dhanoya O. The impact of the risk of COVID-19 on Black, Asian and Minority Ethnic (BAME) members of the UK dental profession. *Br Dent J* 2020; **228**: 919–922.
47. Renton T, Smeeton N, McGurk M. Factors predictive of difficulty of mandibular third molar surgery. *Br Dent J* 2001; **190**: 607–610.
48. Hoffman K, Trawalter S, Axt J, Oliver M. Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites. *Proc Natl Acad Sci U S A* 2016; **113**: 4296–4301.
49. Black & Brown Skin. Mind the Gap. 2020. Available online at <https://www.blackandbrownskin.co.uk/mindthegap> (accessed December 2020).
50. ABC News. Medical student Malone Mukwende's book on why brown skin matters meets with 'phenomenal' response. 2020. Available at <https://www.abc.net.au/>

- news/2020-09-01/malone-mukwende-mind-the-gap-handbook-sees-success/12601190 (accessed December 2020).
51. Australian Institute of Health and Welfare. Profile of Indigenous Australians. 2019. Available at <https://www.aihw.gov.au/reports/australias-welfare/profile-of-indigenous-australians> (accessed December 2020).
 52. General Medical Council. GMC statement on ethnically diverse medical school teaching materials. 2020. Available at <https://www.gmc-uk.org/news/news-archive/gmc-statement-on-ethnically-diverse-medical-school-teaching-materials> (accessed December 2020).
 53. Bologna J L, Schaffer J V, Cerroni L. *Dermatology*. 4th ed. CITY: Elsevier, 2018.
 54. Hees C, Naafs B. *Common Skin Diseases in Africa*. Voorburg: Stichting TrodermaVan Hees, 2009.
 55. Louie P, Wilkes R. Representations of race and skin tone in medical textbook imagery. *Soc Sci Med* 2018; **202**: 38–42.
 56. Government Equalities Office. Equality Act 2010: what do i need to know? A quick start guide to using positive action in recruitment and promotion. 2011. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/85014/positive-action-recruitment.pdf (accessed December 2020).
 57. Chisini L A, Noronha T G, Ramos E C *et al*. Does the skin colour of patients influence the treatment decision-making of dentists? A randomized questionnaire-based study. *Clin Oral Investig* 2019; **23**: 1023–1030.
 58. Todd K, Deaton C, D'Adamo A, Goe L. Ethnicity and analgesic practice. *Ann Emerg Med* 2000; **35**: 11–16.
 59. Bissett G. Black Lives Matter – have we seen any progress in dentistry? 2020. Available at <https://www.dentistry.co.uk/2020/10/26/black-lives-matter-progress-dentistry/> (accessed December 2020).
 60. Dental Schools Council and Health Education England. Filling you in: Dental work experience toolkit. 2016. Available at <https://www.hee.nhs.uk/sites/default/files/documents/NADentistToolkitv9.pdf> (accessed October 2020).