It's high time Canada started collecting race-based performance data on medical training and careers

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Keywords: **Differential attainment; Attainment gap; Racism; Medical education; Equity diversity and inclusion; Prejudice; Racial bias; Minority group**

The Lancet Regional Health - Americas 2022;14: 100326
Published online 15 July 2022
https://doi.org/10.1016/j.lana.2022.100326

As three racialised researchers, the following commentary and call to action is personal. Candid discussions with our racialised colleagues regarding experiences of racism, discrimination, and prejudice throughout their education, training, careers, and personal lives are magnified by our own mirrored stories. But anecdotal stories are hard to conceptualise within the broader Canadian medical landscape and beg the question: *Is there a way to measure the impact of racism on medical training and career progression?* Recently, the United States (US) and the United Kingdom (UK) have made large strides in affirmative action plans and targets to eliminate the impacts of racism on medical careers.[1,2] We have watched with interest as the field of differential attainment (DA) research quickly evolved in these western countries, highlighting the paucity of discussions and recognition of this important phenomena in the Canadian medical landscape.

Inaction is one of the most powerful forms of oppression. Our profession's failure to collect race-based performance data, and the resulting permission this grants us to dismiss the possibility of racism within our profession, works to actively uphold the trauma of racism within medicine. Herein, we hope to convince readers that the collection of race-based performance data is an essential process within all equity, diversity, inclusion, and decolonization (EDID) work that cannot be overlooked.

What is race?

Race is socially constructed and self-defined, reflecting a self-identity formed through cumulative personal experiences and built on the foundation of inherited narratives. Racial identity encompasses the lived experiences of racism, prejudice, discrimination, disadvantage, culture, and traditions within racialised communities. The process of racialisation is simultaneously complex, in its composition, yet over-simplified through society's need to label, summarise and categorise the racial identities of people. The legacy of racial trauma, colonialism, prejudice, discrimination, and deep pain are inherited and passed on from our ancestors through storytelling, verbal history, and upbringing. Racialisation describes the dynamic processes of social interactions that reinforce these narratives of racial trauma and highlight an individual's perceived race as inferior to the dominant social group, maintaining and reinforcing historic power differentials and racial hierarchies. Racialised peoples identify with these inherent processes, as they are socialised within the White-dominated, colonial culture of the western world. Though racialised identities include a history of trauma and pain, they also encompass the inspirational resilience, deep pride, and rich cultures within racialised communities.

Race is differentiated from historical and superficial epidemiological terms such as *ethnicity*, which merely describes the geographic, cultural, and historical origins of an individual's ancestors, while failing to capture the lived experiences of racial trauma, discrimination, and self-perceptions of the actual individual in question. In the Canadian context, race-based data is not widely collected and has never been collected in federal censuses. Instead, the census collects data on the number of Canadians who identify as a visible minority. The term *visible minority*, enshrined in the Employment Equity Act (1995), is defined as non-Indigenous persons, "non-Caucasian in race and non-White in colour".[3] It implies an identity assigned by society to describe individuals based on their appearance, assigning perceived cultural norms, and assumed ethnic and national origins while ignoring the self-perceptions of the individual to which they are assumed to apply to (i.e. you aren't Brown until you are *visibly* Brown under the White lens). As a

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metric, it is not comparable to any international standard,[3] including race, thus limiting any meaningful measurement or comparison of race and the impacts of racism internationally for all Canadian population-based research. The explicit collection of racial identity sets a clear objective of measuring racism and the impacts of racialisation in our society.

An understanding of the processes of racialisation is paramount in understanding racial differences in achievement, as racialisation is a dynamic process that continues throughout the lives of racialised peoples, including the time spent in medical training.

What is differential attainment?

Differential attainment, sometimes referred to as the 'achievement gap', describes the differences in academic and career achievement between different equity-seeking groups, but increasingly refers to specific *racial* disparities in attainment. The spotlight was first shown on this field of research within medicine in 1995 when the BMJ reported that every single student who had failed medical school final exams that year was a male with an Asian last name.[4] Following this report, considerable research efforts and funding in the UK focussed on studying this phenomenon. To date, DA remains one of five key projects for the General Medical Council (GMC), the medical regulating body of the UK.[5]

In 2011, the BMJ published a foundational systematic review and meta-analysis of DA in UK medical students and doctors.[6] The pooled effect from 22 studies comparing White and non-White candidates found non-White candidates underperformed compared to their White colleagues with a moderate effect size, of statistical significance. Subgroup analyses found an effect of the same magnitude and direction in: undergraduate assessments only; postgraduate assessments only; machine marked written assessments only; practical assessments only; and White vs Asian candidates only.[6] This review laid the groundwork for the measurement of the effectiveness of anti-racism strategies: clear targets that can be measured and compared when it comes to the impact of racism within the medical profession.

DA in medical education persists when accounted for broad demographic variables such as age, gender, maternal education level, MCAT scores, undergraduate GPA, citizenship, socioeconomic status, and English as a second language status.[7–9] It additionally persists when adjusted for broad psychological factors such as study habits, experiencing a negative life event, psychological morbidity, personality, and motivations to entering medical school.[9]

More than an opportunity gap

There has been a recent shift in DA dialogue in the US where "opportunity gap" has been proposed as the preferred term over "attainment gap", highlighting the importance of understanding the social hierarchies and systemic structures that cause differentials in opportunities afforded to racialised learners.[10,11] Educational and employment opportunities are closely related to attainment. The opportunities received throughout a lifespan influence the preparation and resources at our disposal throughout our education. This in turn influences certain, more fully supported learners to reach their full potential of academic achievement. Further, achievements in medical school, assessment results, trainer recommendations, and exam performance, all influence the employment opportunities that are available upon graduation. Drawing attention to differentials in opportunity is warranted as it advocates for system changes and a deliberate dismantling of the colonial and systemic structural racism that underlies racial disparities in any outcome. However, solely focussing our attention on differences in opportunities overlooks the ongoing impacts of racialisation within the educational environment and excuses us from examining racism within our profession. Complex psychological and interpersonal processes brought about by the experience of racism can have significant influences on a trainee's inherent ability to learn and perform well in a medical educational environment. We propose continued use of the UK terminology of differential attainment as an umbrella term encompassing the differentials in learner opportunities as well as academic achievement that shape the overall career attainment of aspiring physicians.

In their ground-breaking paper in 1995, Steele and Aronson coined the term *stereotype threat* to denote the psychological stress experienced by Black university students.[12] In a series of experiments, they showed that when Black undergraduate students were tasked with a test framed as an intelligence test, they fared significantly worse than their White counterparts when presented with the same circumstances. Astoundingly, the attainment gap was erased when the test was framed as non-diagnostic of intellectual abilities.[12] Stereotype threat illustrates how learners who do not visibly resemble the default norm of their environment (the White dominated medical culture), experience the added psychological stress that their academic performance will be viewed as representative of the abilities of their entire community. This added psychological stress influences academic achievement.

Sense of belonging with the dominant White culture of education and medicine has been shown to negatively impact racialised learners' ability to learn.[13,14] In a report on DA in higher education in the UK, racialised learners were found to be less likely to seek additional educational supports from their educators, devising instead strategies of "getting by" without direct contact with lecturers.[13] White middle-class students on the other hand were more likely to seek out and demand additional help, with stronger peer support systems,

social capital, increased willingness to use organisational support systems and an overall more collaborative approach to learning.[13] These studies indicate that DA is not the result of cognitive deficiencies, nor can it be fully explained by differentials in educational opportunities. Focussing only on opportunities afforded to learners will fail to address the full problem of DA.

Evidence-based interventions to reduce differential attainment

Addressing perceived sense of belonging through the expression of personal values and identity, Cohen et. al. demonstrated that a 15-minute self-affirmation exercise at the beginning of a semester reduced the racial achievement gap in end-of-term transcripts by roughly 40%.[15] This study design was replicated in third year UK medical students and again showed a narrowing of the achievement gap.[16]

In 2015, the Higher Education Funding Council of the UK commissioned and published a report on the causes of DA in the broader UK higher education system.[13] While the cause of DA was found to be multifactorial, it should be noted that at no point did the report outline any evidence of cognitive deficiencies as a cause for the achievement gap. Importantly, this extensive report outlined that success in reducing DA was closely linked with an institution's willingness and capacity to be inclusive and highlighted supportive peer-relationships and mentorship as protective factors in reducing the gap, factors confirmed by Woolf et. al. in a GMC-commissioned report in the postgraduate medical training setting.[13,14]

These studies point towards a complex issue that could be influenced by simple interventions, often missing from EDID strategies: support and mentorship for racialised learners. It should also draw into question the more recent focus on pre-matriculation courses in medical schools as a main strategy for addressing DA,[17,18] as focussing on knowledge gaps in racialised learners fails to address the complex processes of racialisation that continue throughout their training. As the evidence outlines the indisputable existence of DA, and innovative interventions have been established to reduce the achievement gap, Canada is importantly missing from the conversation because of our failure to collect race-based data.

Institutional actions addressing differential attainment

In May 2021 the GMC announced an ambitious plan to eradicate disadvantage and discrimination in medical education and training by 2031.[1] Their announcement follows an eight-year history of the DA GMC project initiative that has provided funding, research, and incredible leadership in raising awareness of, and tackling discrimination and disadvantage faced by minority physicians in the UK.[5]

In 2020, a similar phenomenon started in the US when the Federation of State Medical Boards and the National Board of Medical Examiners announced that the USMLE Step 1 exam results would now be reported as pass/fail (instead of a numerical score).[2] This followed the 2019 preliminary recommendation from the Invitational Conference on USMLE Scoring which boldly recommended the USMLE exam outcomes be changed to pass/fail scoring to "minimize racial demographic differences that exist in USMLE performance."[19] These USMLE exam changes are welcome steps in addressing the resulting opportunity gap experienced by racialised graduates seeking residency training because of lower exam scores. But while modifications to the influence and interpretation of academic achievement in employment and training decisions should be made in light of our understanding of DA, the continued measurement and monitoring of race-based performance data in medical training is essential, as we further develop our understanding of its causes and begin the important next step of testing the effectiveness of EDID work in reducing racial demographic differences in medical training.

There have been no comparative targets set by Canadian medical education institutions or licensing bodies. This likely points to our failure to collect race-based performance data in medicine, limiting our ability to identify, let alone research, the very existence of DA in the first place.

Landscape of the collection of race-based data in Canada

While our focus is on medical education, it is important to understand the landscape and status of the collection of race-based data in Canada. Canada has historically resisted the collection of race-based data for understandable fears of its misuse. The Canadian long-form census, which includes questions on *ethnic origin*, is distributed to a sample of 25% of the population.[20] The purpose of collecting this limited data from a minority of the population is to "derive counts for the visible minority population" to monitor standards set in the Employment Equity Act with respect to equal opportunity.[20] While the existence of and intentions set by the Employment Equity Act are welcome in supporting the opportunities afforded to racialised Canadians, it is also limited in its scope as it only includes data on employment in certain sectors, notably excluding medicine.

In Canada's anti-racism strategy, *Building a Foundation for Change: Canada's Anti-Racism Strategy 2019-2022*, the federal government committed $6.2 million to "increase reliable, usable, and comparable data and evidence regarding racism and discrimination" and enhance the collection of disaggregated race data.[21] This strategy also aims to strengthen measurement and performance data, and assess the effectiveness of

community programs and government initiatives, prioritising resources for those with the most impact.[21] Despite this strong and meaningful commitment, there were no changes made with respect to the collection of race-based data in the Canadian 2021 census, creating significant doubt that the objectives of this strategy are to be met by the end of this year.

Canada's slow response in the collection of race-based data during the COVID-19 pandemic highlighted the importance of this practice in addressing racial disadvantage and discrimination in healthcare. Data on the racial disparities in COVID-19 morbidity and mortality first emerged from the US in April 2020,[22] closely followed by the UK.[23] Amidst these alarms, Canada stated it had "no plans" to collect race-based data on COVID-19 morbidity and mortality.[24] While proxy measures, such as neighbourhood diversity, were used to establish trends, race disaggregated data was not available for analysis.[25] Three public health units in the Canadian province of Ontario, including the ethnically diverse region of Peel, took it upon themselves to independently collect and publicly report this data.[26] Through this data, Peel region was able to implement tailored interventions, including targeted vaccine and education campaigns, for racialised communities.[27] In October 2020, six crucial months after the first US reports, the Public Health Agency of Canada announced a national socio-demographic data collection initiative.[28] Almost two years later, the Canadian Institute for Health Information (CIHI) released guidance on the collection of race-based data in Canadian health research.[29] While the publication provides excellent guidance on the standardised collection of race-based data, it remains voluntary and intended for the collection of patient data, neglecting the much needed collection in the medical training and physician workforce settings.

Despite this slow response, the eventual success in the appropriate collection of this important data highlights that collective, targeted, and informed calls to action can be successful in moving Canada closer to the equitable standards of other western nations. We can do the same for the collection of race-based data in medical training and careers.

A call to action

It is anxiety provoking, and potentially harmful to start collecting race-based performance data *if* steps are not taken to sensitively collect, store, and interpret them. Without context and an explicit understanding of how racialisation impacts educational and career outcomes in a multitude of ways, racial disparities in outcomes may be mistaken as evidence of racial differences in abilities. As evidenced by research dating back to the 1950 UNESCO publication of *the Race Question*,[30] reinforced by the UK extensive examination of DA in higher education,[13] there is no evidence of racial differences in intelligence or ability. Rather, DA exists because of the impacts of racialisation before and during training, that influence racialised trainees' ability to learn and perform in assessments and exams. The risk of fuelling these mistaken perceptions must be mitigated by including and prioritising the voices and work of racialised researchers in every step of the process, and an appreciation and understanding, as the UK and US have demonstrated, that complex, historical, and powerful structures underpin systemic racism in our profession.

As we graduate from medical school and finish our medical training, we not only inherit the prestige, privilege, and power of the title of "Doctor", but the legacy of racism, discrimination, and trauma in medical history. As representatives of the profession, we each hold the responsibility to acknowledge and address the inequities in medicine. It is high time for the Canadian medical community to acknowledge our social accountability by measuring, researching, and addressing the impact of racism on medical career progression.

Today, we, as the founders of the Differential Attainment REsearch Group (DARe), call on Canadian medical schools to begin to collect race-based *performance* data on its student body, as the magnitude of the attainment gap must be studied on the level of individual academic institutions to understand the breadth and degree of this phenomenon within the micro-cultures of each school. We also boldly call on the Medical Council of Canada, the Royal College of Physicians and Surgeons of Canada, and the College of Family Physicians of Canada to begin collecting race-based performance data for their qualifying exams. This data collection must align with national and international standards such as those set by the CIHI,[29] avoiding dated, subjective, and inaccurate terms such as *visible minority* persons, so that meaningful cross-institutional and international comparisons can be made. Each institution must make efforts to include the leadership of *racialised researchers* in these initiatives, to develop sensitive and acceptable methods for the collection, interpretation, and dissemination, of this data. Once the degree of this problem is known in Canada, focussed exploration through qualitative studies on the underlying causes, both from the learners as well as the educators' point of view, can begin. Both data sets will be invaluable in the development of actual evidenced-based EDID initiatives with academic and career attainment used to measure program success.

Anecdotal stories provide the narratives of the lived experiences of racialised communities. The numbers, however, tell a different story. They tell the story of the long-overlooked impacts of structural racism in medicine. If we never stop to look further than the anecdotal, if we never stop to measure, document, and study the impacts of racism, we fail to examine the structures that exist to uphold racism in our profession. The study of

differential attainment gives us the blueprint for dismantling racism and assessing the effectiveness of our efforts to do so.

Contributors

Anjali Menezes: Conceptualization, literature search, writing- original draft, editing, final approval of manuscript Shayna Henry: Substantial contributions to the drafting and revising the work for important intellectual content, final approval of manuscript
Gina Agarwal: Critically revised for important content, final approval of manuscript.

Declaration of interests

Anjali Menezes: Co-authored and received payment for a faculty development workshop on supporting racialised medical learners at the Canadian Conference of Medical Education in April 2022.

Shayna Henry: Co-authored and received payment for a faculty development workshop on supporting racialised medical learners at the Canadian Conference of Medical Education in April 2022.

Gina Agarwal: None.

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