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Parity representation in leadership positions in academic medicine: a decade of persistent under-representation of women and Asian faculty

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ABSTRACT

Purpose In academic medicine, faculty from minority groups face discrepancy in career progression and few minorities rise to leadership positions in medical schools. The purpose of this exploratory study is to go beyond aggregate numbers and explore parity representation of different minority groups and women in leadership positions in medical schools. The primary research question of this study is: What is the level of parity representation in leadership positions at academic medical centres, examined by gender and by available race/ethnic categories?

Method The Leadership Parity Index (LPI)—adapted from the Executive Parity Index—was used to calculate parity representation using national data obtained from the American Association of Medical College Faculty Roster for 2010–2021. Leadership was represented by department chairs and deans. Comparisons were made by gender and race/ethnicity.

Results Within the datasets studied, the LPI for women and Asians was consistently below parity. Faculty who identified as White had LPIs above parity. When parsed by gender and race/ethnicity, Asian women had the lowest LPI of all race/ethnicities.

Discussion and conclusion The ‘critical mass’ argument holds that when a group constitutes 30%–35% of the total, they would form a critical mass that would lead to more representation in leadership. Despite minority groups constituting said percentage, this study confirms that ‘critical mass’ has failed to lead to diversity in leadership. Furthermore, a focus on ‘critical mass’ obscures other disparities that exist within the system. The findings of this study show that aggregate data may not provide a true picture of equity and parity in medical schools. The variation in LPI within each race/ethnic group suggests that categories such as under-represented in medicine (URiM) and non-URiM, can mask differences within subgroups and should be applied with caution as they can have unintended consequences.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Studies have shown that, in the USA, minoritised groups are poorly represented in the higher ranks of associate and full professor in academic medicine. This study explores minority representation in leadership positions at medical schools that has not yet been sufficiently explored.

WHAT THIS STUDY ADDS

⇒ This study has shown that women and Asians, though well represented in aggregate numbers in academic medicine, are under-represented in positions of leadership.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ This study calls into question the use of broad classifications such as under-represented and non-underrepresented in medicine. Generalised categories can mask differences within subgroups and should be applied with caution.

healthcare access and quality for minority patients and assure a sound healthcare system for all of our nation’s citizens.¹ This was echoed by the Institute of Medicine which recognised that confronting disparities in healthcare required increasing diversity within the healthcare workforce.² However, diversifying the healthcare workforce begins at healthcare educational institutions such as medical, nursing, dental schools, etc. Equity, diversity and inclusivity conversations and practices need to start at educational institutions and continue throughout the pipeline and healthcare system to create a diverse and inclusive healthcare workforce dedicated to the well-being of all.

Diversity in medical schools

Medical schools in the USA suffer from a skewed representation of population groups. Accepted medical school applicants in 2022–2023 comprised 8.17% black and African American students and 6.36% Hispanic, Latino or Spanish origin students in contrast to the national population of 13.6% black and African Americans and 18.5% Hispanic or Latinos.^{3,4} Despite numerous diversity and inclusion initiatives, this representational imbalance persists. This imbalance is also seen in medical school faculties where faculty of colour are predominantly in lower academic ranks of instructor and

INTRODUCTION

The healthcare system is a vast enterprise, including healthcare organisations, professionals and training institutions. Healthcare professionals and the healthcare organisations in which they function are natural focal points for ensuring quality and equitable health outcomes for communities and patients. The 2003 Sullivan Commission on Diversity in the Healthcare Workforce stated that, ‘Increasing diversity in the healthcare professions will improve



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assistant professors. There is minimal minority representation in leadership positions, and senior leadership is ‘overwhelmingly white and largely male.’⁵ This imbalance in diversity representation is seen in various countries, including Canada, Australia and the UK.^{6–8}

The lack of minority representation in medical school leadership is problematic. Leaders such as medical school deans play a large role in moving forward a diversity agenda.⁹ Diversity in leadership enables the inclusion of diverse voices and viewpoints in policy decisions.¹⁰ It also bridges the gap between the face of leadership and the healthcare workforce and larger population.⁵ Minoritised groups need to be included in leadership positions to facilitate equitable distribution of power and enable the disruption of systemic inequities.¹¹ The lack of minoritised groups in leadership positions can be seen as an ‘exclusion and denial’ of their voices and a failure of inclusion and engagement.⁹ Without these voices, their issues, concerns and achievements may not be explored or addressed, directly impacting any attempts to create an equitable environment.¹² This lower representation at higher academic ranks and leadership positions potentially further affects the retention of minority faculty, creating a ‘leaky pipeline.’¹³

Unfortunately, there is insufficient research into diversity in leadership in academic medicine.¹⁰ This negatively impacts structural change, which requires a clear picture of the baseline and the desired state.

Parity representation

Since the 1970s, diversity and inclusion initiatives have addressed the pipeline into medical school matriculation, faculty promotion and clinical practice. The ‘critical mass’ argument has been that when a group constitutes 30%–35% of the total, they would form a critical mass that would trigger sociocultural changes, which would lead to more representation in leadership.⁶ However, studies in Canada and the UK have shown that achieving critical mass does not necessarily lead to sociocultural change.^{6,7}

The parity lens is helpful in exploring equitable access to leadership in the presence of representation. Equity begins with parity in representation, that is, equal percentage representation of a group at lower and higher organisational levels. In the context of diversity in educational leadership, parity metrics look not just at diversity based on population numbers but at diversity in the context of the faculty population. In the USA, parity studies in academic medicine have found that minority faculty are predominantly located at lower academic ranks (instructor, assistant professor), and parity drops as academic ranks advance (associate professor, professor).^{14,15} While it might be tempting not to prioritise parity in favour of first achieving representation, achieving parity is essential for ensuring ongoing improvements in representation, inclusion and engagement. Sustaining the recruitment and retention of a diverse healthcare workforce requires equity in academic promotion and career advancement, and leadership parity.¹⁶

To obtain a clear picture of the current leadership landscape in academic medicine in the USA, we conducted an exploratory study of gender and racial parity representation between medical school faculty, department chairs and deans in the USA. The guiding research question was: What is the gender and racial/ethnic parity representation in leadership positions at medical schools in the USA?

METHODS

Data sets

We used the US Medical School Faculty (USMSF) data from 2010 to 2021 based on 10 January 2022 snapshot of the American Association of Medical Colleges (AAMC) Faculty Roster. We decided that 12 years of data would allow us to see recent trends in minority representation at leadership levels of department chairs and deans.

We focused on three specific USMSF data sets that are collected annually: (1) USMSF by sex, race/ethnicity and rank, (2) the distribution of department chairs by sex, race/ethnicity and (3) US medical school dean trends by dean type and gender. These data sets are composed of self-reported data compiled annually by AAMC from all medical schools in the USA. In all three datasets, gender was represented as a binary value of women or men.

The race/ethnicity categories that were identified in the first two data sets were: (1) American Indian or Alaska Native, (2) Asian, (3) black or African American, (4) Hispanic, Latino or of Spanish origin, (5) Native Hawaiian or other Pacific Islander, (6) white, (7) other, (8) multiple race—Hispanic, (9) multiple race—non-Hispanic and (10) unknown race/ethnicity. We excluded other, multiple race—Hispanic, multiple race—non-Hispanic and unknown race/ethnicity from our calculations to maintain clarity in the representation of ethnicities which might become unclear when unknown and multiple race categories were included. We used data set 3 (US medical school dean trends by dean type and gender) to obtain a comprehensive overview of recent trends for medical school deans.

Methodological framework

Gender and racial/ethnic parity representation were calculated using the Leadership Parity Index (LPI). The LPI was adapted from the Executive Parity Index which was originally developed to assess parity in workforce leadership representation.¹⁷ The LPI is calculated as:

$$\text{Leadership Parity Index} = \frac{\text{A group's percentage representation as leaders}}{\text{The group's percentage representation as faculty}}$$

The parity index metric has been used to calculate the global gender gap, health disparity index, corporate leadership gaps and rank equity in academic medicine.^{14,15,17–19} Parity studies in academic medicine have found that minority faculty representation at the levels of associate and full professor or in leadership (department chairs and deans) are not in parity with their representation at the lower levels.^{14,15} Specifically, the LPI has been used to calculate the leadership parity of Internal Medicine faculty and department chairs.²⁰

Studies into parity move beyond aggregate numbers to provide a more nuanced data analysis. An LPI of 1.00 represents parity in the percentage of leaders and faculty. A value below 1.00 indicates under-representation and a value over 1.00 indicates over-representation. The goal is to have a parity index of 1. Parity indices are useful for evaluating inequality in specific areas, in setting goals and in assessing change.²¹ In this study, the parity index is used as a surrogate for equitable access to leadership.

Data analysis

We calculated descriptive statistics for the medical school faculty, department chair and dean datasets. We calculated the proportion of department chairs against total faculty by race/ethnicity for each year (2010–2021) and used this data to calculate the LPI by race/ethnicity for each of the six race/ethnicity categories. We

also calculated the LPI by gender and then by gender and race/ethnicity for each year. Finally, we graphically plotted the LPI by year to show the LPI trends over time.

We followed a similar process to calculate LPI at the dean level. We calculated the proportion of deans against the total faculty by gender for each year (2010–2021) and used these data to calculate the LPI by gender. These data were then graphically plotted to reveal LPI trends for deans from 2010 to 2021.

RESULTS

Demographic distribution

From 2010 to 2021, the AAMC Faculty Roster noted a total of 1 859 089 entries for medical school faculty members and 35 953 entries for department chairs in the 6 race/ethnicity categories. Whites and males were the majority for both groups, and Native Hawaiian or other Pacific Islander were the smallest group. The aggregate data for the deans noted a total of 293 entries for female deans and 1453 for male deans (see [table 1](#) for details).

Race/ethnicity LPI at department chair level

An LPI of 1 represents parity representation of a group at faculty and department chair levels. The LPI for whites has consistently been above 1 across the 12 years with LPI ranging from 1.17 to 1.18. Hispanic, Latino or of Spanish origin is the other group that has achieved LPI greater than 1 (0.99–1.18). Black or African Americans have placed closer to parity representation (0.86–1.04), achieving parity representation over the last 2 years. Native Hawaiian or other Pacific Islanders have moved towards parity representation from LPI=0 in 2010 to LPI=0.7 in 2021. Asians are the furthest from parity at LPI=0.49 in 2021 showing a 51% gap in achieving parity representation (see [figure 1](#)).

Gender LPI at department chair level

The LPI for men is constantly above 1 (1.35–1.39) while the LPI for women remains below 1 ranging from 0.36 to 0.49 (see [figure 2](#)).

Gender and race LPI at department chair level

[Figures 3 and 4](#) show the LPI trend by gender and race from 2010 to 2021. When examining the data for men alone, the representation of Hispanic, Latino or of Spanish origin men has dropped from a high of 1.11 to 0.80 in 2021. Black or African American and white men show similar trends hovering around

Table 1 Racial and gender distribution of faculty and department chairs from 2010 to 2021

	Faculty no (%)	Department chairs no (%)	Dean no (%)
American Indian or Alaskan Native	3186 (0.17)	45 (0.13)	Data unavailable
Asian	386 704 (20.80)	2990 (8.32)	
Black or African American	71 429 (3.84)	1320 (3.67)	
Hispanic, Latino or of Spanish origin	65 892 (3.54)	1382 (3.84)	
Native Hawaiian or other Pacific Islander	2031 (0.11)	14 (0.04)	
White	1 329 847 (71.53)	30 202 (84)	
Women	736 801 (40)	6012 (17)	293 (17)
Men	1 122 288 (60)	29 941 (83)	1453 (83)

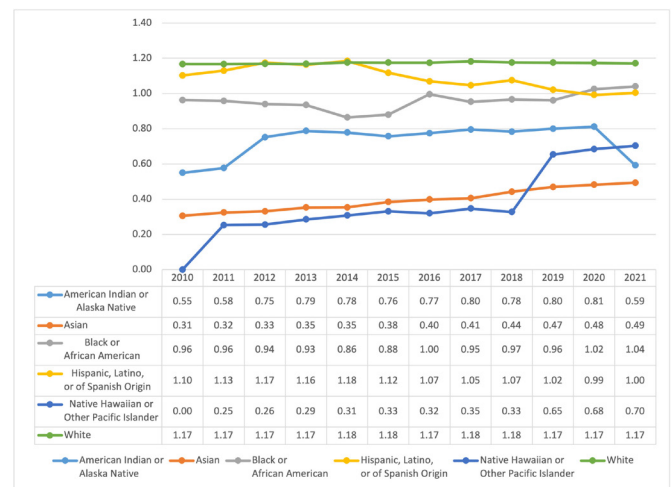


Figure 1 Leadership Parity Indices of US medical school department chairs and faculty by race/ethnicity.

parity representation ranging from LPI=0.97–1.11. The LPI for Asian men has increased steadily but remains below parity at 0.43. Native Hawaiian and other Pacific Islander men are also below parity in leadership, but they have moved closer to parity with an LPI=0.67–0.71 between 2019 and 2021.

Examining the data for women alone, in comparison to their numbers at the level of faculty, women of all races achieved parity representation except Asians, Native Hawaiians or other Pacific Islanders, and American Indian or Alaska Natives. There have been no female Native Hawaiian or other Pacific Islander and American Indian or Alaska Natives women department chairs from 2010 to 2021, putting them the furthest from parity at 0. While the LPI for Asian women increased from 0.33 in 2010 to 0.43 in 2021, it is still the lowest among the different racial groups that have been represented as department chairs (see [figure 4](#)).

Parity in leadership representation at the level of school deans

We also studied parity in representation at the level of school deans. As with department chairs, overall, women are consistently below 1 with LPI=0.56 in 2021. Men, however, are consistently above 1 across the 12 years, with LPI generally around 1.4 (see [figure 5](#)).

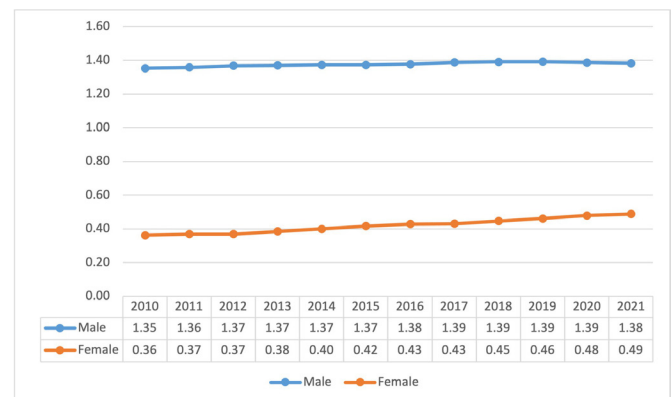


Figure 2 Leadership Parity Indices of US medical school department chairs and faculty by gender.

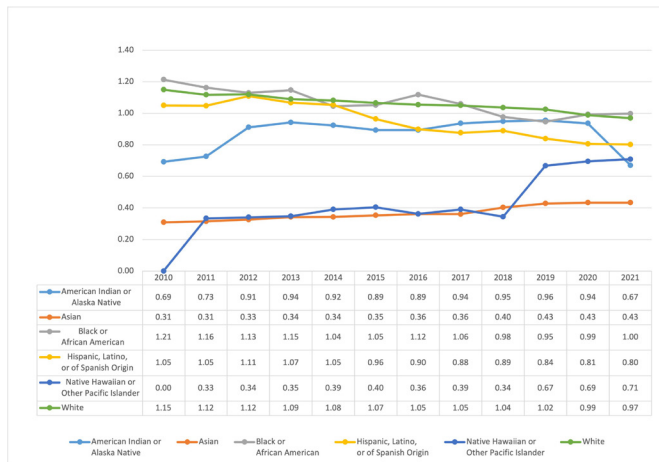


Figure 3 Leadership Parity Indices of male US medical school department chairs and faculty by race/ethnicity.

DISCUSSION

This study explored diversity by examining parity representation in the US medical school leadership. Findings reveal patterns and gaps that exist in the parity representation of women and different minority groups in positions of leadership (department chairs and deans) at medical schools. Within the datasets studied women appear consistently under parity in these leadership positions. Looking at race/ethnicity in department chair roles, faculty who identify as white consistently appear over-represented in leadership positions. Those who identify as Hispanic, Latino or of Spanish origin and black or African American are at or close to parity in leadership representation. American Indian or Alaskan Native and Native Hawaiian or other Pacific Islander are moving closer to achieving parity in leadership while Asians rank lowest in leadership parity.

Under-representation in leadership

Two groups in this study are disproportionately under-represented in leadership: women and Asians. Women and Asians have achieved critical mass representation within medical school faculty and student body. However, this has not translated into a proportional increase in leadership representation. Over the past 12 years, women have made minimal gains and have only achieved 50% leadership representation in leadership

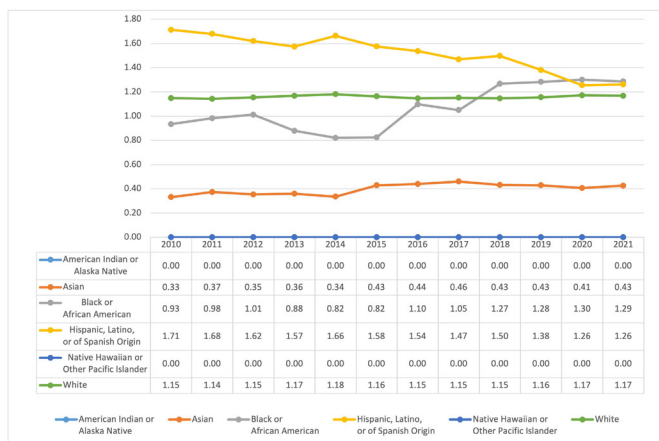


Figure 4 Leadership Parity Indices of female US medical school department chairs and faculty by race/ethnicity.

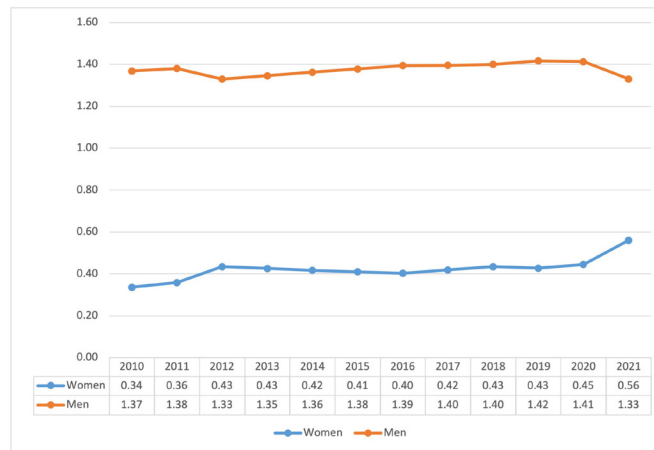


Figure 5 Leadership Parity Indices of US medical school deans and faculty by gender.

positions of department chairs and deans. This contrasts with men who are 30%–40% over-represented in these leadership positions. The findings of this study reinforce the existence of the ‘glass ceiling,’ and by sheer numbers, women’s voices are muted at tables of power.

The low LPIs associated with Asian faculty, both men and women, are similar to findings in other fields.²² Asians are the least likely to be promoted to leadership positions,²³ and while there may be more Asians in aggregate percentages, their representation at leadership positions is the most unbalanced. Particularly notable is that men of all race/ethnic groups except Asians have achieved parity representation in leadership positions.

Findings from this study highlight the added challenges experienced by those who occupy intersectional identities.^{24,25} Within the subgroup of women, for example, our data found no American Indian or Alaska Native or Native Hawaiian or other Pacific Islander department chairs in the last 12 years. Asian women appear to be the furthest from parity in leadership positions. With multiple subordinate-group identities, Asian women and American Indian or Alaska Native or Native Hawaiian or other Pacific Islander women can suffer double-jeopardy—dual and compounded discrimination based on race and gender.²⁶

A powerful aspect of discrimination—whether implicit or not—is the ability to limit a minority group’s access to leadership positions.²⁷ The under-representation of women and Asians in leadership positions creates a gap between the face of leadership and the healthcare workforce and larger population since they are not reflective of the faculty body nor society at large.^{5,28} This disparity also results in women and Asians not having an equal voice in decision-making discourses which have the potential to meaningfully influence policies for achieving equity and parity across the medical education spectrum.²⁹ Gender diversity in leadership has been shown to influence the productivity, creativity and profits of an organisation. Under-representation of women in leadership could impact the prestige of an organisation and its profit margin.²⁸

This lack of parity also means that women and Asian faculty may not have sufficient role models and mentors in leadership positions. Seeing minorities in leadership positions sets an example for trainees and new faculty and exemplifies what they can achieve.³⁰ When women and Asians are predominantly represented at lower academic ranks, there may be an implicit message that women and/or Asians in leadership positions are not a priority for the institution. A lack of role models and

mentors in leadership positions can be a self-perpetuating cycle where the lack of role models leads to disparities that perpetuate further lack of role models.³¹ Furthermore, the lack of diversity in leadership also perpetuates stereotypical assumptions about how leaders should look and behave.

The discourse around diversity and inclusion has focused on recruitment and retention through inclusion and engagement. Medical schools are constantly trying to identify ways to recruit students and faculty from groups that are under-represented in medicine (URiM).³² Given the low numbers of URiM individuals entering medical education, these conversations are essential, and diversity interventions continue to be necessary as we try to increase the aggregate numbers and percentages of URiM faculty. However, it is insufficient to open the door and usher in more URiM faculty. Rather, URiM faculty need to be supported throughout their career, including adequate preparation for leadership positions. The LPI findings in this study show that it is important for diversity initiatives to also attend to leadership parity. Inequity in promotions and leadership opportunities will impact the ability to improve and sustain gains in the recruitment and retention of women and minority faculty.²⁹

New perspectives are needed to address globally persistent health disparities. A change to the systemic racism that undergirds these disparities needs to start in medical schools and specifically with medical school leaders.³³ If we are to design antiracist medical research, innovation and quality improvement, a diversity of voices is not only needed at the tables of power but should be supported, heard and legitimised in these discussions and then acted on.

The complexity of numbers and categorisation

The findings of this study show that aggregate data do not provide a true picture of equity and parity in medical schools and may have unintended consequences. The variation in LPI within each race/ethnic group suggests that classifications such as URiM in the USA; black, Asian, minority ethnic (BAME) in the UK; and culturally and linguistically diverse (CALD) in Australia are too broad and fail to accurately reflect the differences within these groups. In the USA, faculty who identify as black or African American and Hispanic, Latino or of Spanish origin have achieved parity representation in leadership in medical schools. However, American Indian or Alaska Native and Native Hawaiian or other Pacific Islander have remained under-represented across the 12 years to the extent that there have been no women department chairs from these minority groups. Generalised categories, such as URiM, BAME and CALD, can mask the heterogeneity of experiences and struggles within subgroups. These terms can perpetuate ‘othering’ and exclusion and are further problematised because they are fluid in the scope of ‘who’ is given these labels.^{34 35}

The Asian population occupies a unique space in the US demographics. More than 50% of Asians have a bachelor’s degree or higher, and Asians account for the highest median household income of all ethnic groups.³⁶ This economic success has led to Asians being termed the ‘model minority.’³⁷ As a consequence, Asians are seen as white adjacent and sharing in the privileges of the white majority as ‘these are ‘WASPs’ (White Anglo-Saxon Protestants) with brown skin.’³⁸ The lens of the model minority has led to Asians being combined with the majority white population as non-URiM. Identifying Asians as non-URiM has demoralised them, obscuring disparities experienced by Asians and marginalising them from both the majority and minority communities. Since they are non-URiM, the Asian population

broadly and specifically within medical education is under-researched,^{39 40} and their experiences of discrimination remain invisible.

Furthermore, Asians are not a homogeneous monolith. They comprise diverse populations, some representing the most affluent in the US society, such as Indians and Chinese. But Asians also comprise the poorest populations in the US society, such as Hmong, Vietnamese and Cambodians, who are URiM.⁴¹ However, falling under the broad umbrella of Asians, they are consistently overlooked and further marginalised.

This study calls into question the use of classifications in studying populations and the use of URiM versus non-URiM classifications when applied to minority populations. If we define inclusion as ‘a work environment in which all individuals are treated fairly and respectfully, have equal access to opportunities and resources, and can contribute fully to the organisation’s success,’⁴² any group that does not have equal access to leadership opportunities is marginalised. Research in medical education has focused primarily on URiM and women. As Asians have been overlooked, other minority populations have also been overlooked and historically included with the white population group. One example is persons of Middle Eastern descent, who have been treated as culturally other and with discrimination and fear, particularly in recent years. Yet their experiences, career progression and leadership opportunities in medical education have not been explored. As we move towards equity and parity, it is time to reassess the use of terms such as URiM, BAME or CALD and potentially consider dropping these terms just as the British government dropped its use of BAME in 2022.³⁵

LIMITATIONS OF THE STUDY

This study is based on datasets that limit our definition of leadership. It does not capture other leadership roles within an academic medical centre, such as division chiefs, associate deans, programme/course directors, etc. It is possible that the LPI results would be different if a greater number of leadership positions were included. However, this study does provide a look at the LPI for two significant leadership roles—that of department chair and medical school dean.

While medical schools should aim to improve parity for all groups, we must acknowledge that not all faculty might want to be in these specific leadership positions. However, one would not expect such an argument to account for the large 50% gap in representation of women in leadership or the 70% gap in representation of Asian women in leadership.

This study did not include faculty who self-identified as ‘other,’ ‘multiple’ or ‘unknown’ race. The complexities of multiple racial identities are currently not captured successfully in the data sets. With an increasing percentage of the population identifying as multiracial, this statistic needs further exploration. Furthermore, other dimensions of identity that are prone to discrimination (eg, religion, sexual orientation) are not addressed in this study. Intersectional identities face unique challenges that should be considered.

Finally, this study identified parity gaps at a national level. It is important to remember that the parity gap shifts as representation changes. Therefore, individual medical schools should regularly monitor parity gaps within their academic promotion pipeline, in addition to addressing overall representation. These metrics need to be analysed in combination to ensure equity.

CONCLUSION

The unchanging URiM numbers of medical school students, faculty and physicians show that significant progress still needs to be made in recruiting URiM students and residents into medicine and specifically academic medicine. Furthermore, the diversity initiatives that are currently in place are not sufficiently addressing gaps in leadership representation. The existing perspective on diversity that focuses on recruitment and retention is proving insufficient.^{11 43} The conversation around diversity now needs to broaden and encompass a commitment to equity, parity and justice.^{11 43} We need to move away from the concept of ‘critical mass’ since it has failed to lead to diversity in leadership. A focus on ‘critical mass’ also obscures other disparities that exist within the system.

Equity includes providing equal access to career progression and leadership opportunities, affording equitable treatment and experience, and sharing and reallocating power.⁴³ Caution must also be taken against broad classifications of minority populations that can hide systemic issues and disadvantages for less visible or overlooked groups. Further research into groups with low LPIs to explore potential unique barriers to moving into positions of leadership as well as additional studies using other classifications of populations, may help uncover these systemic issues.

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