To Be Seen and Heard:

The BIPOC Experience in STEM

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Introduction

Over the course of several decades, there has been an overall improvement in health outcomes and access to healthcare for Black Americans and yet, they still face major disparities relative to their White counterparts. From life expectancy to chronic disease burden to maternal mortality, the disparities that Black, Indigenous, and people of color (BIPOC) face are disturbing. However, such stark contrasts do not stop with healthcare and health outcomes. BIPOC are exceedingly underrepresented in most academic disciplines, most notably science, technology, engineering, and mathematics (STEM). Unsurprisingly, disproportionate representation becomes more prominent among higher levels of leadership. As women of color who are engaged in public health and health outcomes research, we have firsthand knowledge of why representation matters, not only as researchers but as healthcare consumers as well. The issue of racial disparities in health outcomes and research is built upon an archaic foundation steeped in systemic racism.

We all have a duty and responsibility to be a part of dismantling systemically unjust structures and policies, and rebuilding a new construct. As healthcare researchers and scientists, it is our duty to address systemic racism and subsequent impact on BIPOC communities. Furthermore, it is critical for us to engage in transparent conversations about implicit bias and representation at all levels of leadership.

The Impact of Bias

Bias is inherent to our existence as humans. It is created and shaped by life experiences and our daily living environment. Implicit bias can be conceptualized as reflecting mental processes that occur unintentionally and outside of conscious awareness. In contrast, explicit bias reflects deliberate mental processes that are available through conscious introspection.[1]

Everyone has implicit biases; those in STEM fields are not immune, despite the idea that such fields are thought to be objective and impartial.[2] Without an acknowledgement and correction of these biases, it can unduly influence the diagnosis of disease, medical and treatment decisions, and patient interactions or bedside manner. However, it is not just present within the healthcare workforce but also in how the system measures healthcare quality, access, and utilization. For example, commercial prediction algorithms that use common clinical and financial inputs to predict healthcare utilization and cost have been found to have negative bias towards Black patients.[3]

If the inevitable goal of the healthcare system is to address racial and social disparities and their effect on health outcomes, shifting and correcting implicit bias is imperative. Interactions between BIPOC as healthcare consumers and the healthcare system are further complicated by historical distrust. The perpetual cycle of marginalization, inefficient systems of care, and

mistrust create a complicated feedback loop. Inequitable experiences with medical providers and the healthcare system only serve to drive away patients who have the highest need and who are most at-risk.

Where does the medical community begin to address implicit bias, in order to best repair these fractured relationships and ensure an equitable experience for all? Some have suggested that the change begins with offering training in implicit bias to providers.[4] By training providers and all who work within healthcare, biases can not only be identified but also addressed.[4]

A Seat at the Table

Implicit bias not only has affected how the healthcare community relates to BIPOC, but it has also impacted the racial composition of our healthcare researchers and scientists. Bias impacts which job applications are seriously considered and which perspectives we take seriously when making decisions. Unfortunately, it is not until sobering reports and statistics are released that we see the implications of those day-to-day decisions over time.

One such report was "Women and Men in STEM Often at Odds Over Workplace Equity," a Pew Research Center report published in 2018. This report found that one of the many reasons for the under representation of Black individuals in STEM roles is discrimination in recruitment and promotions.[5] An upcoming publication in Social Psychological and Personality Science by researchers from Duke University's Fuqua School of Business provides results that support this form of implicit discrimination. The experiment found that Black women with natural hairstyles (afros, locs, twists, braids) were perceived as less professional than Black women with straightened hair or White women with straight or curly hair.[6] We, the authors, have experienced direct pressures, both in our personal and professional lives, to change the appearance of our natural hair to better assimilate with the majority culture.

In addition to implicit discrimination at the application level, there are also barriers the BIPOC face upon entering the STEM workforce. The Pew Research Center reports that of those surveyed, 57% of Black STEM employees say that too little attention is given to increasing workplace racial and ethnic diversity compared to 15% of their White counterparts. The report also shows that 40% of Black STEM employees felt that their race or ethnicity made finding success at their jobs harder compared to just 5% of White STEM employees.[5] Many provided qualitative data to support their survey answers:

> "As a Black woman I get looked over for promotions or advancement because of stereotypes. It is believed that Black people are lazy and unqualified which is totally the opposite. Sometimes I feel that people are threatened by me because they know I am capable, qualified and competent to do the job." - Black woman, nurse, 34[5]

> "There are not many people of my race in my industry. It requires me to go the extra mile to fit in or be accepted because many of the employees don't share my background or life experiences. I can do the job just fine, however, there are other factors of one's life that are considered whenever they are in a critical and highly competitive environment." - Black man, systems administrator, 30[5]

These wide disparities in treatment, from recruitment to promotion and beyond, highlight barriers that prevent BIPOC from even being 'in the room' where important decisions in healthcare are made. It is important that all perspectives are given a seat at the table. We need to be very intentional about seeking out others who are not represented and lifting them up. Creating a safe space and opportunities for difficult conversations, that extend beyond the scope of standard messages of support and inclusivity, can help set the tone for positive visibility and empowerment. Additionally, cluster hiring, where multiple positions are advertised at once without stipulating specific fields to increase the applicant pool, can open doors for BIPOC in research fields, especially if the communities we serve look more like those who are underrepresented than those in the majority.[7]

Conclusion

Getting to the table is critical, but it is only the first step. Being seated in silence will not advance the movement forward. We need to reconstruct the current culture to encourage an open platform where all can be heard without flippant dismissal. Ostensibly, being seen but not heard can deter and inhibit someone from wanting to speak up and participate. Diversity for the sake of optics alone discourages the inclusion of different perspectives and ideas, which can stifle innovation and problem solving within the workplace.

We would like to use this article as a call to action for all in STEM fields. Diversity and inclusion should be consciously embedded in everything we do, and thus the responsibility falls on all of us to do our part. While the STEM fields have seen historic gains in BIPOC inclusion and involvement, our work is far from over. The acknowledgement of our biases and the elevation of voices that are frequently underrepresented are two of many approaches to tackle systemic racism in STEM. We must continue to strive for equity and equality for all populations, no matter how uncomfortable the journey may get.

> "Not everything that is faced can be changed, but nothing can be changed until it is faced." -*James Baldwin*

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References

1. Hehman, E., Calanchini, J., Flake, J. K., & Leitner, J. B. (2019, June). Establishing construct validity evidence for regional measures of explicit and implicit racial bias. *Journal of Experimental Psychology. General*, *148*(6), 1022–1040. PubMed https://doi.org/10.1037/xge0000623

2. FitzGerald, C., & Hurst, S. (2017, March 1). Implicit bias in healthcare professionals: A systematic review. *BMC Medical Ethics*, *18*(1), 19. PubMed https://doi.org/10.1186/s12910-017-0179-8

3. Obermeyer, Z., Powers, B., Vogeli, C., & Mullainathan, S. (2019, October 25). Dissecting racial bias in an algorithm used to manage the health of populations. *Science*, *366*(6464), 447–453. PubMed https://doi.org/10.1126/science.aax2342

4. Agrawal, S., & Enekwechi, A. (2020). It's time to address the role of implicit bias within health care delivery. Health Affairs Blog. https://doi.org/10.1377/hblog20200108.34515

5. Funk, C., Parker, K., & Center, P. R. (2018). Women and men in STEM often at odds over workplace equity (Issue January). Retrieved from: https://www.pewsocialtrends.org/2018/01/09/women-and-men-in-stem-often-at-odds-over-workplace-equity/

6. Duke University. (2020). Research suggests bias against natural hair limits job opportunities for Black women. Fuqua School of Business. Duke Fuqua Insights. Retrieved from: https://www.fuqua.duke.edu/duke-fuqua-insights/ashleigh-rosette-research-suggests-bias-against-natural-hair-limits-job

7. Gewin, V. (2020). Fighting racism demands more than just words. *Nature*, *583*, 319–322. PubMed https://doi.org/10.1038/d41586-020-01883-8