The Current State of Diversity, Equity, and Inclusion in Multiple Sclerosis Research, Clinical Trials, and Workforce

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Complete List of Authors:	Amezcua, Lilyana; University of Southern California, Keck School of Medicine, Neurology Hamilton, Roy; University of Pennsylvania, Neurology Ciccarelli, Olga; Institute of Neurology, Dept of Neuroinflammation;
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Abstract:	Increasing the generalizability of research results and improving the health of the MS population are at the heart of diversity, equity, and inclusion (DEI) efforts in MS. Nevertheless, the underrepresentation of women and non-White populations in the clinical and research workforce and non-White populations in clinical trials and research remains a critical challenge. We offer some insights into the current state of diversity and inclusion of racial and ethnic minoritized people in clinical trial participation, the barriers that need to be overcome, and the gaps in the MS workforce.

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Lilyana Amezcua MD, MS,[1]Roy H. Hamilton MD, MS,[2] Olga Ciccarelli, MD, PhD, FRCP[3,4]

Affiliations:

[1]*Corresponding author** University of Southern California (USC), Keck School of Medicine, Department of Neurology, Los Angeles, California, USA.

2

Neurology Department, University of Pennsylvania, Philadelphia, PA, USA.

[3] Queen Square MS
Centre, UCL Institute of
Neurology, Faculty of
Brain Sciences,
London, UK

NIHR University College London Hospitals Biomedical Research Centre

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Corresponding author:

Lilyana Amezcua MD MS, Department of Neurology, Keck School of Medicine, University of Southern California, Los Angeles, CA 90033, USA.

Tel: 323-442-5710

Email: lamezcua@usc.edu

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[1]*Corresponding author** University of Southern California (USC), Keck School of Medicine, Department of Neurology, Los Angeles, California, USA.

2

Neurology Department, University of Pennsylvania, Philadelphia, PA, USA.

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4

Corresponding author:

Lilyana Amezcua MD MS, Department of Neurology, Keck School of Medicine, University of Southern California, Los Angeles, CA 90033, USA.

Tel: 323-442-5710

Email: lamezcua@usc.edu

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Commentary:

Increasing the generalizability of research results and improving the health of the MS population are at the heart of diversity, equity, and inclusion (DEI) efforts in MS. Nevertheless, the underrepresentation of women and non-White populations in the clinical and research workforce and non-White populations in clinical trials and research remains a critical challenge. We offer some insights into the current state of diversity and inclusion of racial and ethnic minoritized people in clinical trial participation, the barriers that need to be overcome, and the gaps in the MS workforce.

A focus on diversity is lacking in MS trials

In countries like the United States (US), where Hispanic or Latinx and Black or African American people comprise approximately 19% and 13% of the population, respectively (Census 2021)[1], clinical trial participation fails to reflect the current state of racial and ethnic diversity. Summary statistics from 21,000 US-based clinical trials conducted in 2022 revealed that only 16% of 4.76 million participants identified as Hispanic or Black (6% and 10%, respectively).[2] Clinical trials in MS are no different.

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Despite the disproportionate burden of disease observed in these racial and ethnic populations, underrepresentation of Black and Hispanic people with MS in both phase III and phase IV clinical trials is dramatic.[4] In the last 25 years, the percentage of non-White persons participating in phase III trials (7.8%) was significantly lower than the representation of non-White persons in the multinational census data (54.8%), despite a significant increase in the geographical distribution of clinical trials sites.[4] Racial and ethnic demographic data are inconsistently reported and often omitted, despite FDA guidance published in 2016 (and reissued in 2023) that emphasizes the importance of this information.[5] Out of 44 phase III trials, 17 (37.8%) did not report race or ethnicity, and about one-third (31.1%) reported 2 or more races or ethnicities.[4] In addition, the racial and ethnic demographics of trials are unavailable on drug manufacturer websites designed intended for patients or health care professionals, making it difficult for non-White persons with MS to determine the degree to which any disease-modifying treatment has been tested in persons of their background. The absence of diversity in clinical trials threatens the applicability of research findings.

Healthcare disparities drive the absence of diversity in clinical trials

Historically, the designs of clinical studies have unintentionally prevented the delivery of valid and valuable evidence that can be used across diverse patient populations. Most patients in MS trials are younger, do not have comorbidities, and are less varied, which does not represent real-world clinical practice. Because of social determinants of health, such as poverty, unequal access to health care, and racism, comorbidities tend to be more common in disadvantaged populations, many of whom are minorities.[6] For example, Black American MS patients were recently found to have a 31% increased odds of uncontrolled hypertension compared to White patients despite being on antihypertensives.[7] A recent scoping review of MS rehabilitation trials published since January 2002 found that out of the 243 included studies, most used a single MS Clinic (65%) for recruitment, and 88% of the studies lacked recruitment from remote or rural communities.[8] Exclusion criteria limited people with physical or mental comorbidities, and social determinants were hardly accounted for.[8] Most patients are also recruited from large institutions, which involves care by specialists, but if Black and Latinx people in the US are about 30%-40% less likely to see a neurologist for a neurologic indication,[9] they are more likely to miss out on the invitation to participate. Enrollment bias at recruitment sites (e.g., a potential participant is deemed too risky to invite because the researcher fears loss to follow-up or overall noncompliance) also endangers efforts to increase the diversity of trial populations. Future studies should consider broadening trial eligibility criteria and involve clinical trial recruitment sites that consider where the communities of interest are more likely to receive care to prevent disparities from widening. These changes would allow for a more diverse patient population, increasing the generalizability and relevance of trial and research findings.

Consider the historical, cultural, and socioeconomic barriers to clinical trial enrollment

To better evaluate the efficacy and safety of novel or existing treatments, researchers must consider barriers that hinder participation, such as access, awareness, discrimination and racism, and workforce diversity.[10] Perceptions and experiences in MS that are particularly noteworthy among Hispanic and Black patients include concerns for legal status and being taken advantage of.[11] These perceptions may underscore historical atrocities that engendered mistrust of participation in clinical research and medical institutions.

Cultural attitudes influence the ability to communicate effectively across racial and ethnic, cultural, and socioeconomic differences. Promoting cultural competence and reflection about personal biases in study teams can create more trusting environments to optimize participant engagement. Research tool kits, such as the Minority Engagement in MS Research Patient Recruitment Toolkit for Research Professionals, designed by community leaders, MS clinicians, and researchers, could be helpful.[12] This tool kits is intended to create awareness of racial and ethnic diversity in MS, offer insights into the perceptions and concerns, and guide community engagement and cultural humility. Implicit bias training modules are widely available for researchers and clinicians and are becoming increasingly required at most institutions. Hence, with proper training and the use of multifaceted tool kits, we can help diversify the recruitment of future research and clinical trials.

Leveraging community partnerships throughout the life cycle of the study enhances DEI

Incorporating processes that facilitate DEI is imperative to designing and conducting inclusive clinical trials that are representative of the overall population, both regionally and globally. This includes incorporating those populations experiencing inequities who have not been well represented in research and clinical trials in the planning and implementation of clinical trial designs and the systems that support them. The CHIMES trial provides an example of collaboration, inclusivity, and consideration of the social conditions at the inception of the study of ocrelizumab in Black and Hispanic people with MS.[13] By engaging with diverse stakeholders, including advocacy and community leaders early on, faster enrollment rates were observed. Providing access to translators and making study-related patient materials available in multiple languages minimized linguistic problems and health literacy issues. Allowing for flexible scheduling options, compensation for loss of earnings, childcare and travel reimbursement, accommodation, and meals decreased participant burden and improved retention. The study thus far has proved that advanced planning and implementation of health equity tools reduce access barriers and participation burden.

Diversity in the clinician and scientist workforce helps to address health disparities.

Addressing these disparities also must encompass the creation of opportunities that generate a diverse workforce and foster a culture of inclusivity in science. Underrepresented clinicians are more likely to serve underserved communities.[14] Medical environments with more racial diversity are better at identifying and mitigating racism and eliciting greater trust from underserved patients. In addition, underrepresented researchers are more likely to incorporate community and population health into proposed investigations. Hence, the pipeline of neurologic disparities researchers needs to be broadened. The National Institute of Neurological Disorders and Stroke working group recently updated its guidance to ensure more significant development and training of neurologic researchers but also prioritizes the diversification of the funding agency staff.[15] Accounting for the diverse lived experiences and exposures of various populations, diversity in the workforce can foster greater innovation, communication, and better risk assessment of our patients.[16] Future clinical trial and research should be more inclusive of racial and ethnic minority groups, as well as other populations experiencing health disparities, including sexual and gender minority or socioeconomically disadvantaged populations.

Women in the neurology and MS workspace remain disproportionately underrepresented.

Despite the extensive and growing evidence, gender disparities in neurology careers and MS researchers are still present in the 21st century. Women neurologists are paid 11% less a year than men neurologists, receive fewer American Academy of Neurology recognition for similar achievements, and are less likely to serve as journal editors[17] and speak at major conferences.[18] A recent study found that 39% of US neurologists are women, and 31% of practice guideline authors are women, including only 18% of first authors.[19] The estimated annual salary for women was 10.7% less ($p \le 0.001$, 95% CI −4% to −16%) after controlling for race, region, years of practice, practice setting, call status, leadership role, and subspecialty-wage category. In addition, when applying equivalent metrics, grant funding, access to training, mentorship, first and last author publications were fewer for women (less often middle author), 10% fewer women presented research at grand rounds or a national/international conference than men, and women spent more time in non-professional responsibilities and were less satisfied with their work-life balance.[20] In MS, gender gaps are also a problem. On examining>2,500 articles published in Neurology, JAMA Neurology, Brain, Annals of Neurology, MS Journal (MSJ), and MS and Related Disorders (MSRD), 36% had a first-name author associated with women, and 25% had a senior author name associated with women.[21] In MS journals, such as MSJ and MSRD, there was a slight improvement, with 44% of first authors and 35% of senior authors associated with women.[21]

Conclusion:

The current state of clinical trials and research in MS must intently shift to be more diverse and inclusive. While it will not be easy, there is an urgent need for more research, policies, and strategies to remove known obstacles that hinder a diverse pool of patients and the greater community from participating in research. This includes developing substantial steps that preserve workforce diversity.

Addressing the modifiable barriers to participation will improve diversity and allow greater access to trials, accelerate enrollment, and strengthen the impact of MS research, not just because it is a matter of social justice but because it matters to our patients.

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