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Science & Society

Uprooting race-based assumptions in biomedical journal articles

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Coronavirus disease 2019 (COVID-19) has exacerbated the structural inequities in healthcare and the challenges of translating research into public discourse. This article highlights key antiracist considerations, presents previously noted core challenges, and provides recommendations for writing and reporting. Importantly, this article contributes to combating racialized science in the biomedical community.

Why transparency and responsibility matters?

In the USA, the COVID-19 pandemic has exacerbated the structural inequities in healthcare and the challenges of translating research into public discourse [1]. While overwhelming evidence on the negative effects of racism on public health and healthcare delivery preceded it [2–5], the COVID-19 pandemic underscores the need for the biomedical community to adequately study and report on racial inequities in health. For basic and clinical scientists alike, the revival of pressing discussions on racism in science and medicine requires complete rejection of false claims that attempt to link racial differences in health outcomes to genetic variation [5]. Rather, scholarly examinations and critiques must highlight the social and structural root causes of racial disparities in health

outcomes without attempts to support biological linkages based on race.

Recently, several papers have addressed the need for more transparency and responsibility in reviewing and critiquing race-based research studies [6–8]. These papers provide notable best practices and antiracist guidelines for the biomedical community in reporting studies and findings in journal reviews for researchers, journals, and reviewers. In this article, we highlight key antiracist considerations, present previously noted core challenges, and provide recommendations for writing and reporting on studies that address racial disparities or ethnic differences in health outcomes and discovery.

Notable considerations on the use of race, ethnicity, and ancestry in biomedical research

Complexities surrounding best practices on reporting and writing about race in the biomedical community have been perpetuated by historical biases. Consider the unfounded notion that racial differences in intelligence exist based on genetics (false claims made by Nobel Prize winner and founder of modern genetics Dr. James Watson[†]), and the inconsistent and interchangeable use of race, ethnicity, and ancestry in biomedical research and reporting [9,10]. These examples underscore the need to distinguish self-identified race or ethnicity (SIRE) – that is, context-specific identification based mostly on social or political factors – from ancestry, that is, genetic or biological factors [10]. For example, the distinction between SIRE categories and ancestry is notable in the COVID-19 pandemic given the higher rates of hospitalizations and deaths in communities of color largely driven by structural racism rather than biology [11]. Similarly, the arbitrary use of SIRE categories in medical research and practice have contributed to poor outcomes in Black patients. Eneanya *et al.* note that the use of estimated glomerular filtration rate (eGFR) to assess kidney function by

assigning higher estimates to patients who self-identified as Black leads to poor access to kidney transplantation solely based on race [12]. Race-based algorithms and assumptions like eGFR lead to health inequities that disproportionately impact SIRE groups because of structural racism in healthcare delivery. These poor health outcomes confirm that race and ethnicity are proxies for socially constructed or sourced health disparities. These examples underscore why the biomedical community must pay particular attention to how SIRE categorization and ancestry are defined and interpreted in all studies [8].

In identifying racial inequities in their work, transparent reporting with a clear rationale for using SIRE categorization is of utmost importance for all basic and clinical scientists [7]. With the growing consensus that SIRE categorizations are socially constructed and fluid, transparency in biomedical reporting is of utmost importance. We affirm that transparent reporting should include: (i) precise statements on the rationale for using SIRE categorizations [6]; (ii) clear explanations of the racial, ethnic, and ancestry diversity found in studies [6]; (iii) a statement on the source of the specimen used in the research laboratories, that is, providing explanations that describe the ethnicity of the patients from whom tissue samples were obtained; and (iv) explicit statements about the root causes of the disparities found rather than ascribing such to the race or ethnicity of the study population. For example, language such as ‘X minority group are more likely to have Y clinical diagnosis or outcomes’ is racist because it places the blame on individuals from a particular racial/ethnic group as the source of their poor health instead of the social and environmental factors that are often at play.

Challenges in writing and reporting on SIRE categories

According to Kaplan and Bennett, researchers, clinicians, and policymakers

face three challenges in writing and reporting on SIRE categories: (i) accounting for the limitations of SIRE data and interpretations; (ii) distinguishing between SIRE categories as a risk factor or risk marker; and (iii) finding an antiracist and noninflammatory way to write about SIRE categories that do not further heighten the mistrust between the healthcare system and communities of color [13]. These three challenges reinforce the need for more discussion on best practices for evaluating and reporting on SIRE and ancestry variables. For example, in describing the first challenge, the authors provide specific examples including: (i) the fluidity and complexity of SIRE categories; (ii) imprecision of the socially constructed physical descriptors on which SIRE categories are based; and (iii) inconsistencies in the use of SIRE categorization and interpretation in research studies and data systems [13]. These challenges serve as a framework for guidelines that biomedical journals, reviewers and authors can

Table 1. Key considerations and questions for authors, peer reviewers, and journals on submitting, reviewing, and accepting reviews

Domains	Writing journal reviews (checklist)	Peer reviewing journal submissions (guiding questions)	Providing guidance on submitting journal reviews (setting antiracist reporting standards)
Race, ethnicity, or ancestry definition	<ul style="list-style-type: none"> • There is a clear and distinct definition for race, ethnicity, and ancestry [3,6,7,13]. • Make sure specific SIRE categories are not defined in such a way as to imply that they are stagnant or fixed [13]. 	<ul style="list-style-type: none"> • Is there a clear definition for race, ethnicity, or ancestry [7,13]? <ul style="list-style-type: none"> ◦ If yes – is it clear that the definition provided distinguishes between social constructs and genetic variation [13]? ◦ If no – highlight the racial and ethical issues associated with the misclassification or misnomer for both a revise and resubmit and a rejected manuscript.^a 	<ul style="list-style-type: none"> • Provide a standard and rigorous definition for race, ethnicity, and ancestry in the International Committee of Medical Journal Editors' (ICMJE) <i>Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication</i> [4].
Describing the study design or approach	<ul style="list-style-type: none"> • Study sample or population are characterized by social, environmental, and genetic variation variables as much as possible.^a • Selected study variables based on race and ethnicity are measured using social and/or environmental mechanisms [8]. • Report genetic background of specimens and the specific populations they represent.^a 	<ul style="list-style-type: none"> • Does the study design include transparent trial reporting on the diversity of the population using racial, ethnicity, and ancestry descriptors?^a 	<ul style="list-style-type: none"> • In addition to the brief guidance on reporting and writing about how race or ethnicity variables are defined in biomedical studies, the ICMJE should include specific guidance on 'ancestry' as a more optimal variable for genetic variation measurement instead of race or ethnicity, which are both social constructs.^a
Language used in describing research findings	<ul style="list-style-type: none"> • Certify that no racialized language is used to describe racial or ethnic groups in a way that links their self-identify to health outcomes. For example, avoid statements that reference a particular race or ethnicity as more likely to have a particular clinical diagnosis [13]. • Remove all language that may be interpreted as reinforcing race-based assumptions about SIRE groups [7,13]. 	<ul style="list-style-type: none"> • Does the study accurately reference the social, environmental, or genetic findings without misclassifying social constructs as genetic findings [13]? 	<ul style="list-style-type: none"> • Provide specific guidance on avoiding phrases, descriptions, etc., that use or interpret race or ethnicity variables as leading to or causing health outcomes [4,13].
Discussing empirical research findings	<ul style="list-style-type: none"> • Include specific statements on transparent trial reporting based on the diversity of the population sampled [13]. • Include a discussion on how laboratory experiments simulate differences that may occur beyond just biological explanations – e.g., environmental differences.^a 	<ul style="list-style-type: none"> • If SIRE categorization and ancestry variables are used, are they adequately discussed based on social, environmental, and genetic factors [6,9,13]? 	<ul style="list-style-type: none"> • Require that reviews addressing racial, ethnic, and ancestry differences include evidence supporting the association, or lack thereof, of social, environmental, and genetic variation factors [8].
Social, ethical, policy, practice, or research implications on health equity	<ul style="list-style-type: none"> • Clearly state the related implications of the study findings on health equity [6,8]. 	<ul style="list-style-type: none"> • If the reporting does not include a specific section or highlight key implications, encourage a revise and resubmit asking the authors to provide a clear statement on the impact of the findings on health equity research.^a 	<ul style="list-style-type: none"> • Identify reviewers with expertise in the relevant biomedical area as well as in racial health equity research and/or bioethics.^a

^aDenotes contributions by the authors, based on a review of relevant literature.

utilize or consider in writing, reporting, and publishing on SIRE and ancestry. Table 1 extends the suggested guidelines for authors, peer reviewers, and biomedical journals, and incorporates salient points from scholarly work on health inequities [3,4,6,7,9,13] and on specific health conditions like cardiovascular diseases [8].

Recommendations for addressing the challenges of reporting on SIRE and ancestry in biomedical research

There is timely opportunity for the biomedical community to advance the discourse in explaining the factors that underlie racial and ethnic disparities in health and healthcare. To do so, we suggest that the biomedical community consider the following recommendations:

- Uphold credible scientific evidence verifying that SIRE categorizations are social constructs with no linkage to genetics.
- Integrate social justice and bioethics-informed frameworks into basic science curricula and the training of current and future biomedical scientists. For example, a social justice framework such as critical race theory offers suitable vocabulary for interpreting race-based inequities in public health research [7]. Critical race theory framework originated in legal studies and defines race as a social construct in order to promote methodologies centered on race equity [14].

- Incorporate into journal submission guidelines, appropriate use of language and vocabulary for reporting SIRE categories, and templates of exemplars and non-exemplars for usage of such lexicon.

Concluding remarks

As previously noted, biomedical research often promotes doubtful research studies that conceptualize SIRE categories as biological constructs. The stark health inequities laid bare by the COVID-19 pandemic provide undeniable evidence for the biomedical community to confront the ills of racialized science in research. Additionally, the biomedical community should make considerable efforts to incorporate social justice conceptualizations (e.g., critical race theory framework) in explaining the use of SIRE categories in the training of current and future biomedical scientists. This hybrid training approach will provide early-career scientists the necessary tools to critically appraise the role of racism in health and utilize antiracist guidelines in their writing and reporting.

Declaration of interests

The authors have no conflict of interest to declare.

Resources

ⁱwww.nytimes.com/2019/01/01/science/watson-dna-genetics-race.html

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