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Reflections on gender and race in scientific research: Challenges and paths to inclusion

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ABSTRACT

Scientific research must be inclusive and reflect gender and racial diversity to promote equity and justice. The underrepresentation of women and racial minorities, coupled with implicit biases, compromises the quality and integrity of science. It is essential to adopt inclusion policies, promote awareness, and ensure equitable opportunities to advance scientific knowledge and build truly representative and fair science.

Keywords: Racial factors, Gender, Science.

INTRODUCTION

Scientific research is one of the primary pillars for the advancement of knowledge and the progress of society. However, it is vital that this activity is developed in an inclusive and conscious way, considering gender and race diversity. Science, as a social institution, must reflect and address the issues of inequality present in our society, seeking to promote equity and scientific justice. In the context of discussions on gender and race in scientific research, a crucial point to be addressed is the underrepresentation of women and people belonging to racial minority groups. Recent studies have highlighted the existing disparities in access, opportunity, and career recognition for these groups, evidencing the presence of prejudice and discrimination implicit in scientific practices (Fernades, 2022; Lopes, 2023). In this context, the present study aims to reflect on gender and race in scientific research.

MATERIALS AND METHODS

Theoretical-reflective essay. Reflective studies can change the initial perception of a situation, generating new ideas and revealing themes for analysis and problem-solving.

RESULTS

The scarce number of studies that address race and gender in an intersectional way, combining them with other social aspects, such as age and sexual orientation, highlights the gap in the analysis of the experiences of black and indigenous women. This reinforces the perception that, in the Brazilian context,

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racial disparities still do not receive due attention. (Barbosa; Jesus; Souza, 2021) According to recent data from the United Nations Educational, Scientific and Cultural Organization (UNESCO), 30% of the world's researchers are women. This discrepancy is more pronounced when observing the representation of women in leadership and management positions, such as university professors and laboratory directors. In addition, the presence of women in areas considered "traditional" or "masculine" in science, such as physics and engineering, is still limited (Lopes, 2023; UNESCO, 2018).

Science is an enterprise that is based on the accumulation of knowledge, and its history, marked by the exclusion of women, still has a significant impact today. Even after years of exclusion, women still face numerous obstacles to their complete inclusion and recognition in the scientific community. This, therefore, results in the rejection of characteristics traditionally associated with the feminine (Freitas; Souza, 2021).

However, simply increasing the number of women in science is not enough, as the numerical inequality of women in this field represents only one symptom of a deeper problem: gender biases. Often, these biases are not only ignored, but denied. In fact, the implicit barriers that women face are often more difficult to overcome than the explicit barriers (Freitas; Souza, 2021).

One of these implicit barriers involves the spread of gender stereotypes and the subordination of characteristics considered feminine. This results in the association of scientific work with masculine, while characteristics considered feminine are relegated to an inferior position. Historically, the scientific enterprise has been linked to masculinity, with attributes such as rationality being considered essential to scientific practice. On the other hand, science has traditionally been portrayed as a neutral, objective activity devoid of values or emotions. This perception contributes to the devaluation of the characteristics associated with the feminine in the scientific context (Freitas; Souza, 2021).

While fully acknowledging the constant presence of gender in science, it is imperative to direct attention to another aspect that is often underestimated in research addressing gender dynamics in the scientific field: the intersection of gender and race/ethnicity.

With regard to race, inequality is also noticeable. Research shows that people belonging to racial minority groups face significant barriers in accessing research, funding, and publication opportunities. The scientific journal *Nature*, in a special issue, brought discussions about racism in science and acknowledged having contributed to the creation of this racist legacy (Nobles *et. al*., 2022).

Nature recognized that over centuries, science has built a legacy of systematic exclusion of black people and other historically marginalized groups from scientific practice. In the process, institutions and scientists used research to sustain discriminatory thinking, prioritizing the results of studies that ignored and further harmed marginalized people. This recognition highlights the importance of addressing these

challenges by promoting inclusive and equitable science, where all voices and perspectives are respected and fairly represented (Nobles *et. al*., 2022).

These gender and race disparities in scientific research not only harm affected individuals but also compromise the quality and integrity of science itself. Scientific research directed at ethnic-racial relations assumes a fundamental role in the fight against epistemicide, as well as in gender issues, highlighting the importance of the female perspective as a tool of resistance. This research plays a crucial role in preserving cultures and ancestry, preventing them from being erased or made invisible due to a sexist social construct. (Barbosa; Jesus; Souza, 2021).

Research conducted by women plays a central role in the emancipation of their bodies by addressing gender issues in education, research, and academia comprehensively. Moreover, these polls represent an act of insurgency against a Eurocentric social structure that has historically silenced women's voices, a structure whose power is held by patriarchy. These dynamics are evidenced in both dissertations (Barbosa; Jesus; Souza, 2021).

The diversity of perspectives and experiences is essential for the advancement of knowledge, as different views and approaches can generate innovative *insights* and more comprehensive solutions to the challenges facing humanity.

To this end, it is essential to implement concrete actions to promote gender and race equality in scientific research, with the adoption of inclusion policy programs in academic and research institutions, such as the hiring and promotion of researchers to the equitable distribution of resources and funding. It is also important to invest in mentorship and support programs for women and people belonging to racial minority groups, providing them with opportunities for career development and visibility.

In addition, awareness and sensitization on these issues should be promoted among the scientific community as a whole. Education and academic training must incorporate an intersectional approach, recognizing the interconnections between gender and race. Debates and open dialogues about diversity and inclusion should be encouraged, seeking to deconstruct stereotypes and prejudices.

Distributing research resources equally is a complex challenge, but some strategies can be adopted to promote greater equality of opportunities: investment in educational policies that ensure equitable access to quality education from the early stages to higher education; create or increase scholarship programs and specific incentives for women and blacks; invest in mentoring and training programs for students and researchers belonging to minority groups; implement admission and hiring policies that value diversity, ensuring fairer representation in research fields; Raising awareness of the importance of ethnic-racial equality in research and higher education, as well as providing training on unconscious bias, can help eliminate prejudices and stereotypes.

Importantly, equal opportunity does not necessarily mean an equal distribution of resources, but rather an environment in which individual talents and skills can flourish regardless of gender and race. Therefore, investment in the preparation of the best researchers and students is an essential component of this process of promoting equality. It is an approach that seeks to eliminate barriers and create conditions for all talents to thrive.

Journals also have the ability to contribute to inclusion in a variety of ways. This can be achieved through a commitment to amplify the research carried out by authors belonging to minority groups and to improve the diversity of their advisory boards and reviewers. In addition, the allocation of space in each issue to articles that address gender and race issues plays a key role, highlighting the relevance of these themes and encouraging other researchers to explore them.

Facilitating open access to articles and reducing or eliminating publication fees can eliminate financial barriers that unequally affect researchers belonging to minority groups. Journals can also partner with research organizations and networks that focus on the areas of gender and ethnicity, thereby fostering collaboration and increasing the visibility of these topics. Additionally, they can play an important role in raising awareness and education about gender and ethnicity issues, using editorials, interviews with renowned researchers, and opinion pieces as tools to promote debate and understanding.

FINAL CONSIDERATIONS

In summary, there is an urgent need to promote gender and race equality in scientific research, recognizing that science is an essential engine for the progress of society. The underrepresentation of women and racial minority groups in science, along with gender biases and implicit discriminations, are critical challenges that undermine the integrity of research and prevent the full development of diverse talent. To effect meaningful change, concrete measures such as inclusion, awareness, and sensitization policies are needed in both academic institutions and scientific journals.

For scientific research to be truly representative and fair, it is critical that all voices are heard and valued. Science must be an open, inclusive and egalitarian space, capable of contributing to a more equitable and just society. Continuous reflection on gender and race in scientific research is essential for building a more egalitarian future and for advancing scientific knowledge.

REFERENCES

Barbosa, L. M. L., Jesus, G. C., & Souza, D. P. L. (2021). Raça, gênero, sexualidades e produção do conhecimento. Revista Multidisciplinar do Núcleo de Pesquisa e Extensão (RevNUPE), 1(1).

Fernandes, M. A. (2022). A participação das mulheres na ciência: Cenário atual e possibilidades. PUC-PR. Available at: https://ead.pucpr.br/blog/mulheres-na-ciencia. Accessed on: July 11, 2024.

Freitas, P. F. L. N. A., & Souza, A. M. F. L. (2021). Articulando ciência, gênero e raça/etnia na educação profissional e tecnológica. Cadernos de Gênero e Tecnologia, Curitiba, 14(43), 247-262. (Jan./Jun.)

Lopes, B. (2023). Desigualdade na ciência e a realidade das cientistas brasileiras. Revista Blog do Profissão Biotec, 10. Available at: https://profissaobiotec.com.br/desigualdade-ciencia-realidade-cientistas-brasileiras. Accessed on: July 10, 2024.

Nobles, M., Womack, C., Wonkam, A., & Wathuti, E. (2022). Ending racism is key to better science: A message from Nature's guest editors. Nature, 610. Available at: https://www.nature.com/nature/volumes/610/issues/7932.

UNESCO. (2018). Deciphering the code: Education of girls and women in science, technology, engineering, and mathematics (STEM). Brasília: UNESCO. 84 pages, illustrated.