Research misconduct in health and life sciences research: a systematic review of retracted literature from Brazilian institutions


Universidade de Brasília
RESEARCH ARTICLE

Research misconduct in health and life sciences research: A systematic review of retracted literature from Brazilian institutions

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Abstract

Background

Measures to ensure research integrity have been widely discussed due to the social, economic and scientific impact of research integrity. In the past few years, financial support for health research in emerging countries has steadily increased, resulting in a growing number of scientific publications. These achievements, however, have been accompanied by a
RESEARCH INTEGRITY

• Relies on rigorous methodological approaches during planning, conduct, documentation and reporting of studies

• Practices known to harm these steps are classified as research misconduct or honest error
• Alert readers to serious errors—unintentional or of misconduct nature;

• Avoid the use of these studies as basis for future investigations;
BRAZILIAN CONTEXT

• Responsible for some of the 1% most cited publications in the world;

• The citation impact of the country increased 15% in the past six years;

• Publications with higher impact ratings in collaboration with institutions from BRICS
RATIONALE

• An increasing number of scientific production and publication from researchers affiliated to Brazilian academic institutions

• Followed by a rise in retracted publication

Validity

Reliability
What are the main reasons for retraction of publications in the field of health and life sciences that were published by researchers who are affiliated with Brazilian institutions?
METHODS

Registered under PROSPERO: CRD42017071647

TWO INDEPENDENT REVIEWERS

• PubMed
• Web of Science
• BVS

• Google Scholar
• Retraction Watch Blog

Indexed key words from MeSH, DeCS
English, Spanish, Portuguese

2004 2017
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0214272
Distribution of Study Type by Health and Life Science Area

- Medical Sciences: 19 (Experimental), 1 (Literature Review), 2 (Observational), 1 (Systematic Review)
- Biological Sciences: 14 (Experimental), 2 (Literature Review), 1 (Observational)
- Pharmacological Sciences: 2 (Observational), 1 (Systematic Review)
- Dentistry: 3 (Experimental), 1 (Observational), 1 (Systematic Review)
- Sports Sciences: 2 (Experimental)
- Physiotherapy: 1 (Experimental)
- Nutrition: 1 (Experimental)
- Nursing Sciences: 1 (Experimental)
• Time to retraction varied from 0 - 19 years;

• The overall mean time to retraction was 3.4 years;

• Retractions increased since 2012 until 2017.
Only 43% of the retractions strictly followed COPE guidelines for its publication.

- **Missing data**: 57% of the retraction notices retrieved
- **Retraction warnings**: withdrawn/retracted band were also nonexistent (37%)
- **Proper citation of the original article**: was present in only 33% retraction notices; 42 retraction notices did not cite the original article

"Only 43% of the retractions strictly followed COPE guidelines for its publication."
• 20% retracted for at least two distinct reasons;

• Fraud was responsible for the retraction of three articles due to image manipulation and data manipulation;

• Error were attributed to inappropriate statistical analysis, study design and inadequate data collection.
Fig 2. Count of articles by reason for retraction.


https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0214272
• 37% Positive-citation pattern
Retracted articles were cited more often **BEFORE** retraction

• 63% Negative-citation pattern
Retracted articles were cited more often **AFTER** retraction

"The most cited article with a negative-citation pattern was published in 2007 and was retracted in 2016."
• 26 Brazilian institutions had at least one research article retracted;

• 20 (77%) public institutions and 5 (19%) were private institutions.

• University of São Paulo: highest number of retracted publications (n = 17), followed by the University of Campinas (n = 16).

• University of Campinas: highest number of retractions by author
What is the purpose of a retraction if not to be used to avoid more scientific misconduct?
Are the increasing numbers of retracted publications a sign of scientists' awareness of misconduct?
The role of distinct actors in the publication of retractions

Dusan Petricic. Available at:https://www.the-scientist.com/critic-at-large/misconduct-around-the-globe-39243
CONCLUSION

• Considering authors affiliated with Brazilian institutions, the majority of retracted articles in health and life sciences were of misconduct nature.

• The underlying factors involving research misconduct remains unclear.

• Measures to prevent misconduct may take into consideration the particularities of each society, including weakness and strengths, depending on the cultural aspects.

“The impact of bad science is borderless and is not culture-dependent”
LIMITATIONS AND STRENGTHS

• The incomplete information of the retraction notices reduced the accuracy of our analysis.

• Original paper’s quality was not evaluated and therefore, it is not possible to draw conclusions regarding the relationship between the research quality and retraction.

• Although this review considered only Brazilian institutions, its findings provide useful insights and could serve as a basis for future investigations.
“To make a great dream come true, the first requirement is a great capacity to dream; the second is Persistence - a faith in the dream.”

Hans Selye

THANK YOU!
REFERENCES


