

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

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## RESEARCH ARTICLE

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

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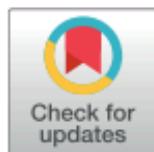
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## OPEN ACCESS

**Citation:** Stavale R, Ferreira GI, Galvão JAM, Zicker F, Novaes MRGG, Oliveira CMD, et al. (2019)

Research misconduct in health and life sciences research: A systematic review of retracted literature from Brazilian institutions. PLoS ONE 14(4): e0214272. <https://doi.org/10.1371/journal.pone.0214272>

## 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

# 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**



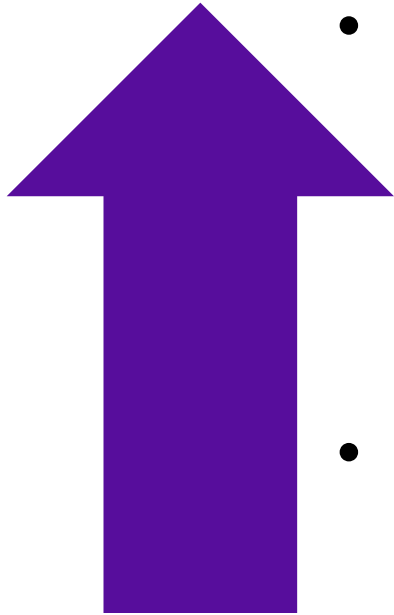
RETRACTION  
NOTICE

- Alert readers to serious errors—unintentional or of misconduct nature;
- Avoid the use of these studies as basis for future investigations;

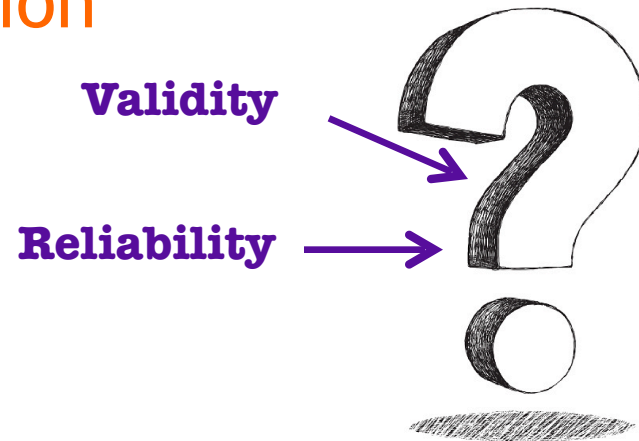
# BRAZILIAN CONTEXT

- 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**



# RESEARCH QUESTION

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](https://doi.org/10.1111/CRD4.2017071647)

TWO  
INDEPENDENT  
REVIEWERS

- PubMed
- Web of Science
- BVS

- Google Scholar
- Retraction Watch Blog

Indexed key  
words from  
MeSH, DeCS

English,  
Spanish,  
Portuguese

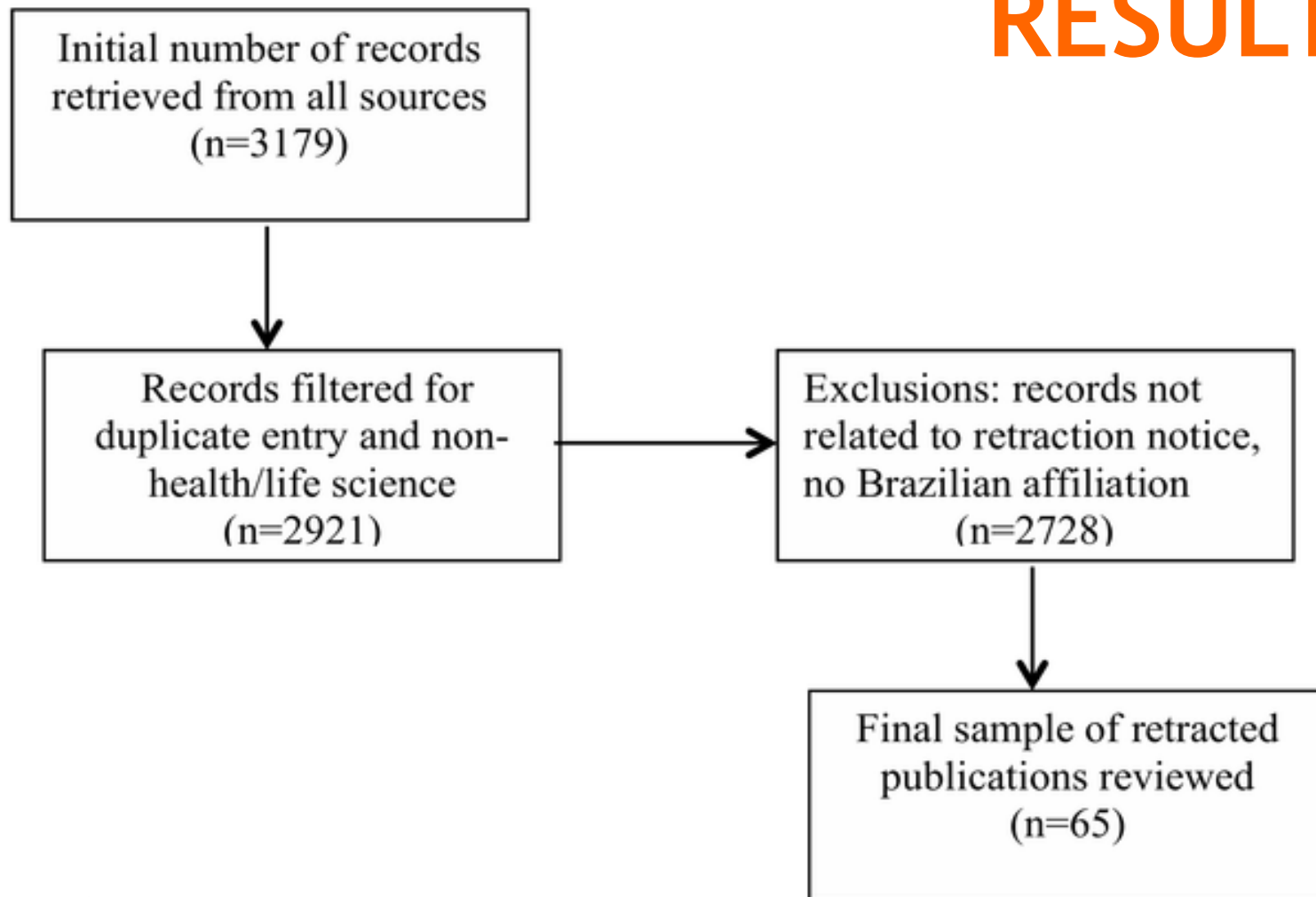
2004

2017



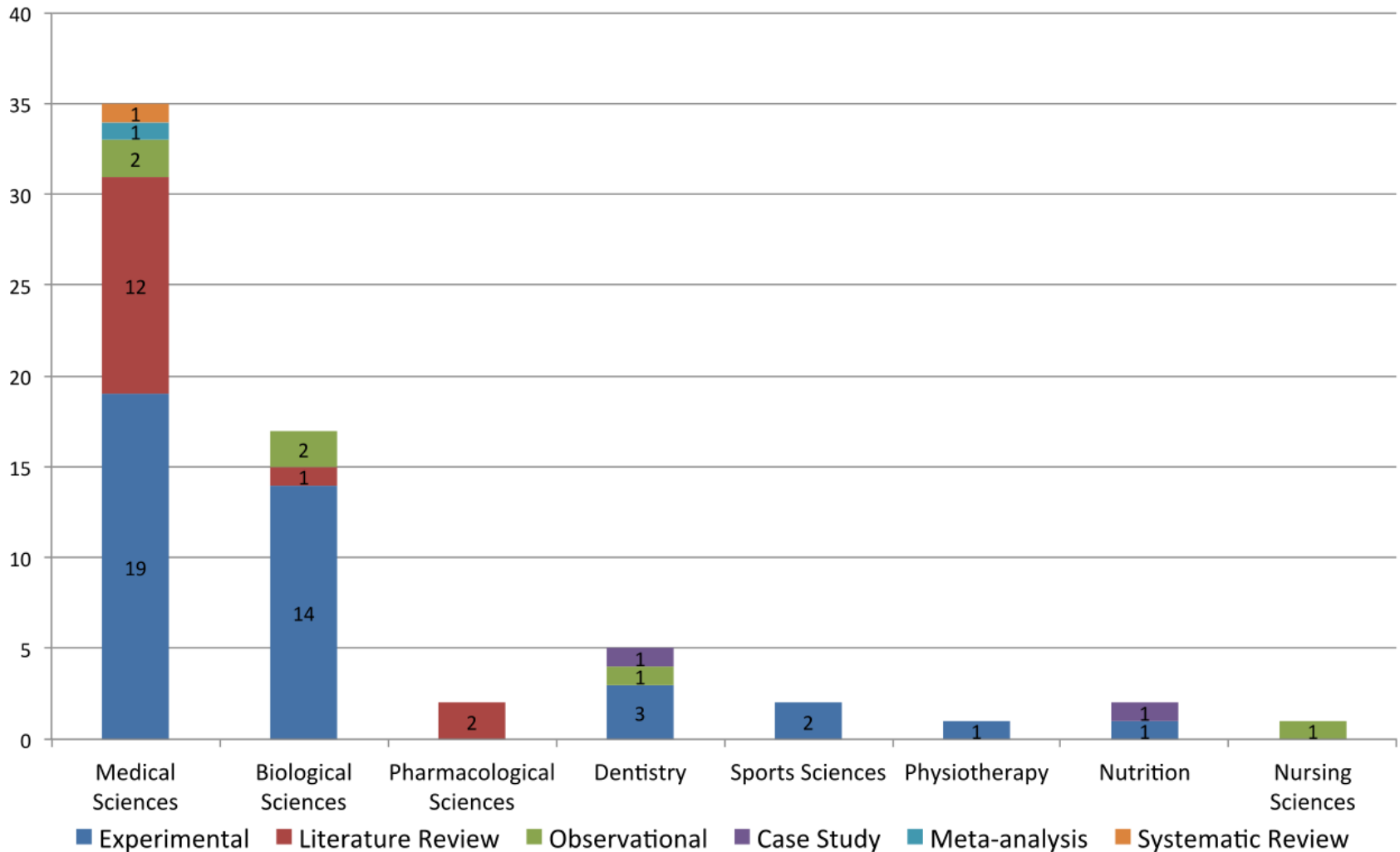
**Fig 1. Flowchart of study identification and eligibility of retracted articles.**

# RESULTS



# INITIAL GLANCE

Distribution of Study Type by Health and Life Science Area





CRONOLOGICAL  
TREND

- Time to retraction varied from 0 - 19 years;
- The overall mean time to retraction was 3.4 years;
- Retractions increased since 2012 until 2017.



QUALITY OF  
RETRACTION

- 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**

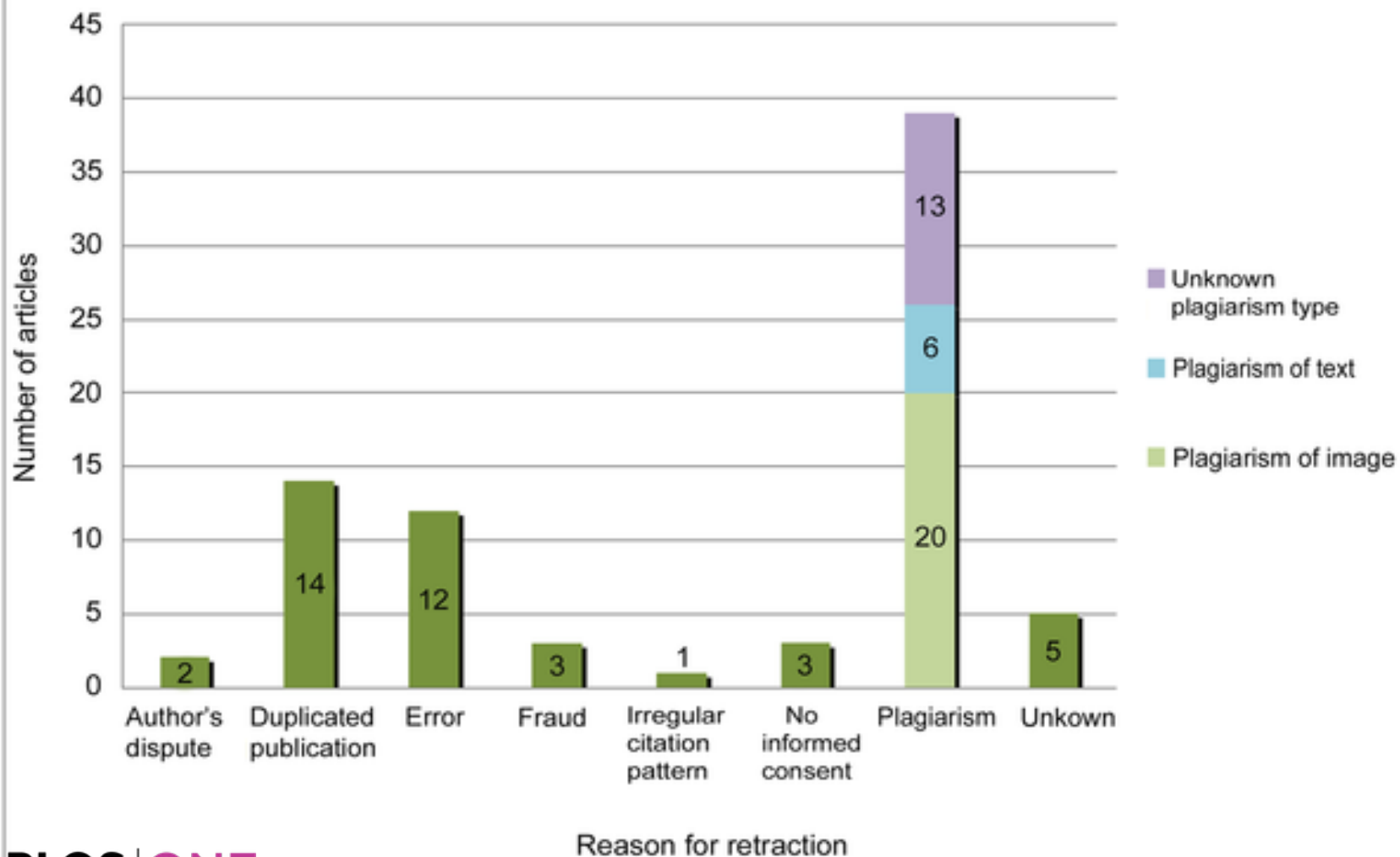
*" Only 43% of the retractions strictly followed COPE guidelines for its publication."*



## REASON

- 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.





CITATION  
PATTERN

- 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."*



AUTHOR PER  
INSTITUTION

- 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

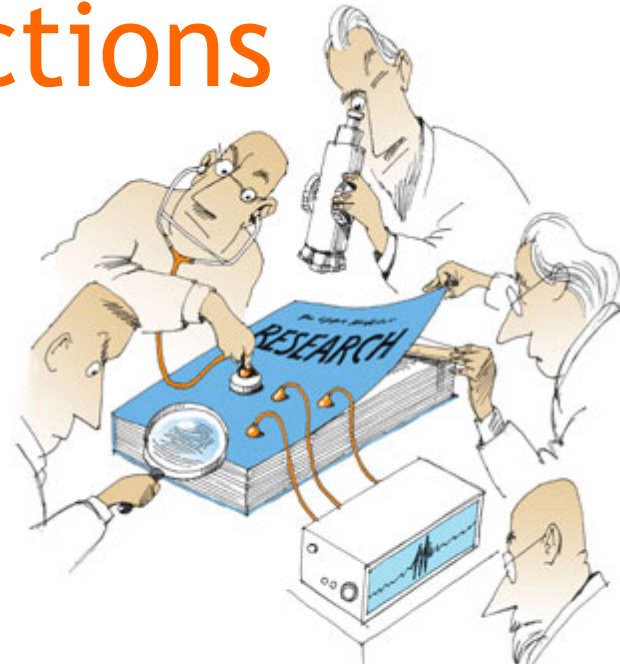


What is the purpose of a retraction if not to be used to avoid more scientific misconduct?



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

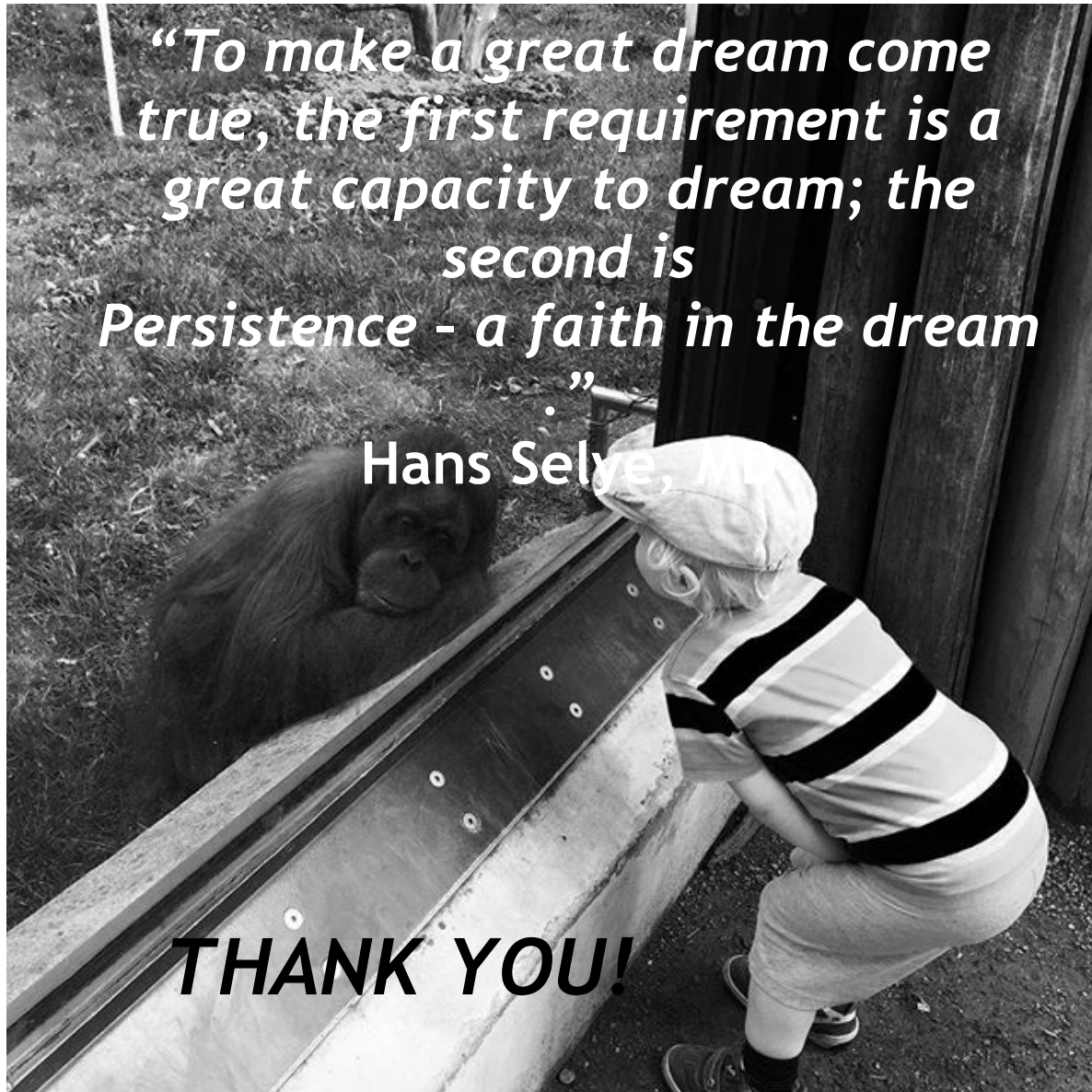
- The **incomplete information** of the retraction notices reduced the **accuracy** of our analysis
- Original **paper's quality** was not evaluated and therefore, it is **not possible** to draw **conclusions** regarding the **relationship** between the **research quality** and **retraction**.
- Although 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, M.D.*

**THANK YOU!**



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