

# ANALYSIS OF RETRACTED SYSTEMATIC REVIEWS AND META-ANALYSIS – A RETROSPECTIVE CROSS-SECTIONAL STUDY

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## BACKGROUND

- Retraction of any article is an important criteria for maintaining the integrity and reliability of the scientific literature
- Committee on publication ethics (COPE) defines retraction as “a mechanism for correcting the literature and alerting readers to publications that contain such seriously flawed or erroneous data that their findings and conclusions cannot be relied upon”<sup>[1]</sup>
- COPE recommends that journal editors should consider retracting a publication if they have clear evidence that the findings are unreliable due to misconduct (e.g. data fabrication) or honest error (e.g. miscalculation or experimental error), redundant publication, constitutes plagiarism, or reports unethical research<sup>[1]</sup>
- To the best of our knowledge retraction of systematic reviews and meta-analysis are not analyzed till date

## IMPORTANT DEFINITIONS

- Compromised peer review**  
Compromises that happens in an independent assessment of the manuscript by a peer<sup>[2]</sup>
- Duplicate publication**  
When the article gets published twice; usually as a result of author’s misconduct<sup>[2]</sup>
- Honest error**  
Mistakes that happens on the part of author or publisher, leading to publication of some error or unreliable data<sup>[2]</sup>
- Plagiarism**  
Appropriation of another person’s ideas, processes, results, or words without giving appropriate credit<sup>[3]</sup>
- Misconduct**  
Data falsification/fabrication, failure to obtain ethical approval or consent, failure to obtain permission for data, plagiarism, duplicate publication, image duplication, authorship issues or a compromised peer review<sup>[2]</sup>

## OBJECTIVE

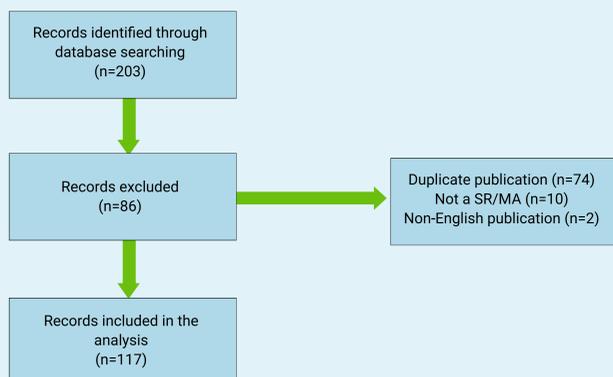
- To understand the reasons of retraction of systematic reviews and meta-analysis (SR/MA), considered to be the highest level of scientific evidence available to researchers

## MATERIALS AND METHODS

- A retrospective cross-sectional analysis of retracted SR/MA, published till 29th January 2018 was performed on MEDLINE (via PubMed) using the keywords “systematic review” OR “meta-analysis” along with filters “retraction of publication” and “retracted publication”
- Total of 203 initial hits were retrieved
- Each retraction notice was thoroughly reviewed and following data points were collected:
  - Who initiated retraction?
  - Reason for retraction
  - Country of corresponding author
  - Year of retraction
  - Journal
- Analysis was done using descriptive statistics

## RESULTS

Of the total 203 initial hits, only 117 articles were included in the analysis (Figure 1).

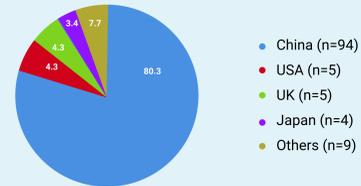


- Majority of SR/MA (n=70; 59.8%) were retracted because of compromised peer review process (Figure 2). Surprisingly, all these 70 retractions were from China



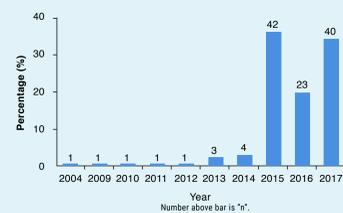
Other: fraud in included trials (n=2), included articles were retracted (n=1) and reliability of data was not substantiated (n=1). \*4 articles also had plagiarism issues and 4 articles had authorship issues. †one article also had duplication issue.

- Majority of the retracted SR/MA were from China (80.3%) (Figure 3)

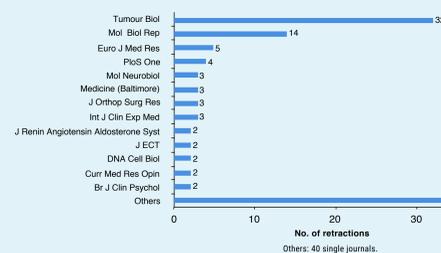


Others: Argentina, Brazil, Iran, Saudi Arabia, New Zealand, Republic of Korea, Sweden, Switzerland and The Netherlands (n=1 each)

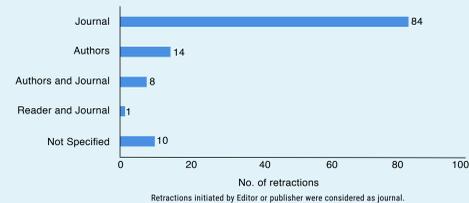
- Majority of the retractions happened in year 2015 (42), followed by 2017 (40) and 2016 (23) respectively (Figure 4)



- Tumour Biology journal retracted highest number (n=32) of SR/MA, followed by Molecular Biology Reports (n=14) (Figure 5)



- There were 84 number of retractions which were initiated by journal (editor or publisher).



## DISCUSSION

- To our knowledge, this is the first analysis focusing on retraction of SR/MA
- Major reason for retraction of SR/MA was compromised peer review process
- These peers could be friends or colleagues of author(s) of submitted paper, who agree in advance to provide a favorable review. Few authors may create sham email addresses of non-existing researches/experts, or using real researcher’s names impersonating as real ones
- These fake peer reviewers are outcomes of several intentional or unintentional motives. These include fear of rejection, gaining funding, having no time to write papers and co-ordinate journal’s review-rejection-resubmission-response, pressure to publish for promotion or mandatory university/government rules, and to build ones resume for future positions
- There is a need for robust system to detect such fraud and maintain the scientific integrity
- The ICMJE states that “it is the responsibility of the journal to ensure that systems are in place for selection of appropriate reviewers”<sup>[2]</sup>
- It also states that “reviewers must disclose to editors any conflicts of interest that could bias their opinions of the manuscript, and should recuse themselves from reviewing specific manuscripts if the potential for bias exists”<sup>[4]</sup>
- Eventually its everyone’s responsibility to understand the role and ethical responsibility towards publications
- Our findings suggest that more attention should be paid towards maintaining the integrity of the scientific data and its publication

## CONCLUSIONS

- The most common reason for retraction of SR/MA was compromised peer review process followed by honest error
- Majority of retractions were reported from China
- Major retractions happened in last 3 years i.e. from 2015-2017
- Tumour biology journal retracted highest number of articles
- Most of the retractions were initiated by the journal followed by the authors themselves

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