

The 8th World Conference on Research Integrity



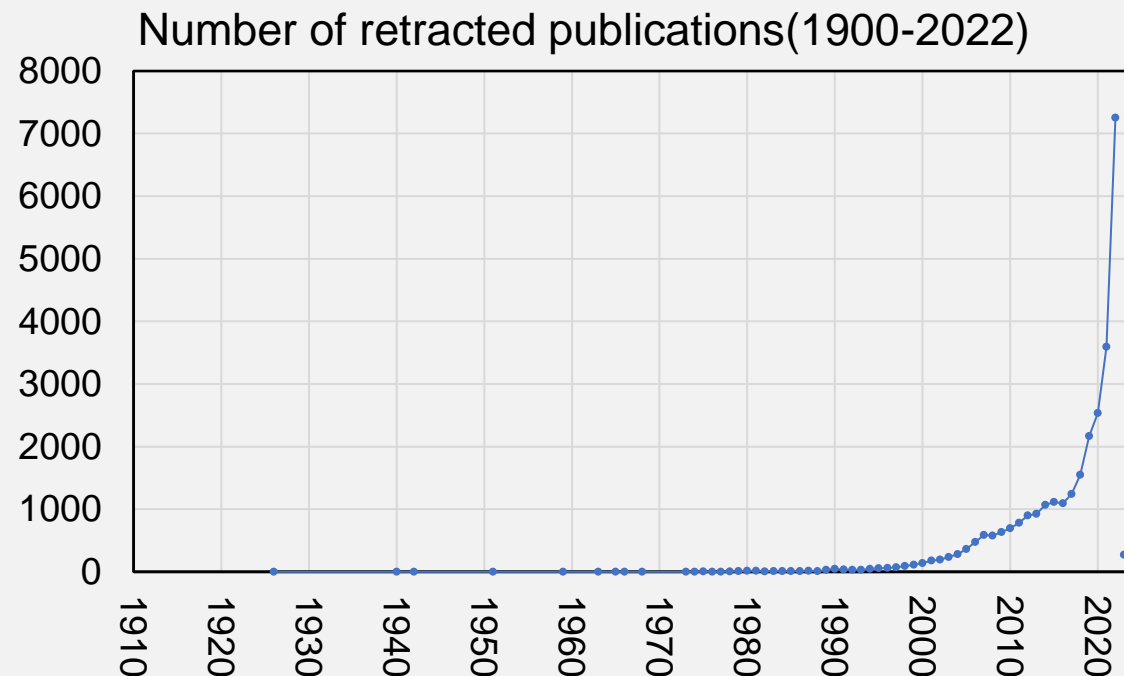
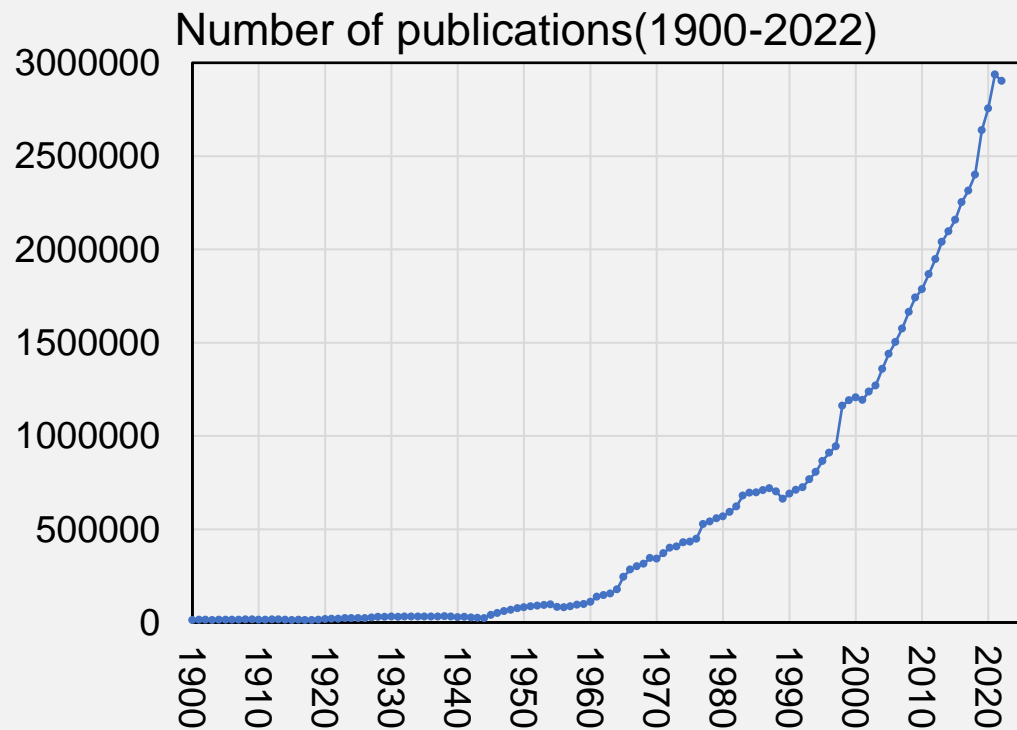
Empirical insights into global retraction notices: Assessing quality for improved transparency and accountability



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2 June, 2024

1 Introduction

- ✓ Scientific discovery is accelerating.
- ✓ There are more flawed papers.



Based on SCI, SSCI, and AHCI of WoS(June 2024)

Examples of retraction notice

Cancer Management and Research



Open Access Full Text Article

RETRACTION

Overexpression of Chloride Channel-3 Predicts Unfavorable Prognosis and Promotes Cellular Invasion in Gastric Cancer [Retraction]

Peng J, Chen W, Chen J, Yuan Y, Zhang J, He Y. *Cancer Manag Res.* 2018;10:1163-1175.

We, the Editor and Publisher of the journal *Cancer Management and Research*, have retracted the following article.

Following publication of the article, concerns were raised about the duplication of images from Figure 3 with images from an unrelated article. Specifically,

- Images for Figure 3C and 3D have been duplicated with images for Figure 2c, 2d and 2h from Cao Q, Liu F, Ji K, et al. MicroRNA-381 inhibits the metastasis of gastric cancer by targeting TMEM16A expression. *J Exp Clin Cancer Res.* 2017;36:29. <https://doi.org/10.1186/s13046-017-0499-z>.

The authors responded to our queries but were unable to provide a satisfactory explanation for the duplicated images or provide satisfactory data for the study. As verifying the validity of published work is core to the integrity of the scholarly record, the Publisher and Editor requested to retract the article and the authors agree with this decision. The authors wish to apologize for any inconvenience caused to the journal and readers.

We have been informed in our decision-making by our editorial policies and COPE guidelines.

The retracted article will remain online to maintain the scholarly record, but it will be digitally watermarked on each page as "Retracted".

EXPERIMENTAL and MOLECULAR MEDICINE, Vol. 38, No. 4, 453, August 2006

Retraction

Shear stress stimulates phosphorylation of protein kinase A substrate proteins including endothelial nitric oxide synthase in endothelial cells.

2006 Feb 28;38(1):63-71.

Boo YC.

Department of Molecular Medicine, Kyungpook National University School of Medicine, Daegu 700-422, Korea. ycboo@knu.ac.kr

This article is retracted by the request of the corresponding author. The corresponding author is deeply sorry for any inconvenience this may have caused to the Experimental and Molecular Medicine and to the readers.

Detailed retraction notice could help us learn from the mistakes.

1 Introduction

Retraction notice played as an important information carrier for the public. Unfortunately, not all retraction notices effectively convey sufficient details about retracted articles to the public.

- The vast majority of retractions did not include the title of the original article, and there was no change in the number of notifications that prominently featured retraction notices(Snodgrass & Pfeifer, 1992).
- Bilbrey et al. devised a rule for evaluating retraction notices, depending on whether the notice indicated the cause for retraction and the clarity of the explanation. Their analysis of 171 notices from 15 journals discovered significant disparities in notice quality within and between journals(Bilbrey & O'Dell, 2014)
- A study of 134 retraction notices from 2000 to 2015 reveals that the majority of notices issued by authors (47, 35%) and 8 (6%) notices not identifying who retracted papers(Moylan & Kowalczyk, 2016)
- ...

Most current studies evaluated retraction notice with limited samples from a single discipline,lack of a comprehensive understanding of global retraction notices; the analyzed aspects of retraction notice are also limited. This study has developed a comprehensive rubric to evaluate and standardize the quality of more than 10 thousand global retraction notices.

2. Retraction notice quality assessment criteria

Content

- Q1. Initiation
- Q2. Conducting investigation
- Q3. Stating reasons
- Q4. Correspondence between authors and editor
- Q5. Reference of making decision
- Q6. Post-retraction

This rubric encompasses three perspectives: content integrity, language objectivity and retraction identification, with reference to the COPE retraction guidelines, ICMJE guidelines, NLM guidelines, EASE's Standard Retraction Form and some previous research.

OncoTargets and Therapy

Open Access Full Text Article

miR-488 Inhibits Cell Growth and Metastasis in Renal Cell Carcinoma by Targeting HMGN5 [Retraction]

Wei X, Yu L, Kong K. *Onco Targets Ther.* 2018;11:2205–2216.

The Editor and Publisher of *OncoTargets and Therapy* wish to retract the published article. It came to the journals attention that the article contained instances of alleged image manipulation. Specifically:

- Figure 3A panel 786-O miR-NC appears to be duplicated with panel A498 miR-NC which has been rotated clockwise by ~90°.
- Figure 3B panel 786-O miR-NC appears to be duplicated with panel A498 miR-NC which has been rotated clockwise by ~45° and had some elements altered.
- Figure 3B panel 786-O miR-488 appears to be duplicated with panel A498 miR-488 which has been rotated clockwise by ~90°.

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RETRACTION

- The western blots for Figure 5A panel 786-O HMGN5 appear to be duplicated with Figure 5F panel 786-O N-cadherin.
- The western blots for Figure 5A panel A498 HMGN5 appear to be duplicated with Figure 5F panel A498 N-cadherin.

We tried to contact the authors but despite several attempts received no response. The Editor has determined the findings of the study are no longer valid and requested for the article to be retracted.

Our decision-making was informed by our policy on publishing ethics and integrity and the COPE guidelines on retraction.

The retracted article will remain online to maintain the scholarly record, but it will be digitally watermarked on each page as “Retracted”.

Retracted article

Language objectivity

- Q7. Emotion of the language
- Q8. Objectivity of language

Retraction identification

- Q9. Identifying retraction
- Q10. Authorship consistency

2. Retraction notice quality assessment criteria

Q1. Initiation: whether retraction notices indicate who requested the retraction of the paper?

□ Why

- ✓ COPE stated that retraction notices should clarify how the occurrence (request for retraction) came to the journal's attention.
- ✓ Several studies have been conducted to understand how the choice to retract is initiated or how it is required (Teixeira & Vuong, 2022), or which notices record who retracts the article (Barbour et al., 2017)

□ How

The retraction was requested by a subject (e.g., request to, requested by, ask to) or that the paper was retracted by a subject (e.g., retracted by) is interpreted to relate to the person requesting the retraction

□ Quick view

- ✓ Mentioned in 12,027 retraction notices (92.9%).
- ✓ Four major subjects:
 - Authors, including first author, corresponding authors, co-authors, and other authors.
 - Editors, editorial boards, journals, and so forth
 - Publishers
 - Academic institutions such as the author's institution, research institutes, universities, etc., research funding agencies, authoritative associations and supervisory bodies in the subject field, and so on

2. Retraction notice quality assessment criteria



Q2. Conducting investigation: whether retraction notices indicate there was an investigation?

□ Why

- ✓ concise retraction notice should include information about the retraction process(Vuong, 2020)
- ✓ This criteria examined whether the notices accurately reveal the subject of the investigation.

□ How

The retraction was requested by a subject (e.g., request to, requested by, ask to) or that the paper was retracted by a subject (e.g., retracted by) is interpreted to relate to the person requesting the retraction

□ Quick view

- ✓ 25.3% of the retraction notice were disclosed to the investigation.
- ✓ Five major subjects:
 - Authors: 22.2%
 - Journals: 30%
 - Publishers: 13.5%
 - ORI: 91 retraction notices
 - third parties: 30%

2. Retraction notice quality assessment criteria



Q3. Stating reasons: whether retraction notices report the reasons for retraction?

□ Why

- ✓ Researchers cannot know if and to what extent their work has been influenced if retraction notices do not explicitly identify the rationale for the retraction(Bilbrey & O'Dell, 2014).
- ✓ Several studies have been conducted to understand how the choice to retract is initiated or how it is required(Teixeira & Vuong ,2022)⁸, or which notices record who retracts the article(Barbour et al., 2017)¹³

□ How

- ✓ Retraction watch
- ✓ Manual reading was used to evaluate whether or not reasons for retraction are provided.

□ Quick view

- ✓ The great majority of retraction notices (12,690) mentioned the retraction reasons

2. Retraction notice quality assessment criteria

Q4. correspondence between authors and editor : " Is the correspondence between authors and editor mentioned? "

□ Why

- ✓ The COPE guidelines detail the rules that editors and authors should follow before retracting. The editor should consult with the author and attempt to reach an agreement on wording.

□ How

- ✓ whether the notices contain expressions such as contact and communication between the editor and the author prior to the formal retraction, the author responding to the retraction decision
- ✓ whether the editor and the author have reached an agreement
- ✓ We recognized words such as “contact “, “ respond “ and their variants.

□ Quick view

- ✓ 4128 notices indicated contacting and informing authors.
 - whether the author was notified, how the author was contacted
 - whether the author was successfully contacted
 - whether the author responded to the retraction,
 - whether the author agreed with the retraction, with this information usually appearing at the end of the notice.
- ✓ Some of the notices stated that the editor had contacted the author but without a response or without the approval of all or some of the authors, the retraction decision was carried out.

2. Retraction notice quality assessment criteria

Q5. Making decision: Is retraction policies quoted?

□ Why

- ✓ COPE further emphasised that retraction notices should include the reasons and justifications for the retraction so that readers understand why the article is untrustworthy

□ How

- ✓ whether notices reference or quote some policies based on whether terms such as policy and guidelines are mentioned and the content of the web links cited in the original text of notices

□ Quick view

- ✓ A total of 3,530 retraction notices clearly indicated the retraction policy on which they retracted papers, accounting for 27.3% of all retraction notices,
- ✓ 2757 retraction notices referred to the policies of the journal's, publisher's, or article's affiliation, typically in the context of highlighting the journal's policy on a specific aspect, such as policies on publication ethics and integrity, image integrity standards and policies, peer review policies, data availability policies, animal research policies, and so on, and some of these references to the policy are accompanied by a link to the website that corresponds to that policy.
- ✓ 1434 notices referenced the COPE guidelines
- ✓ 22 to ICMJE policies
- ✓ 663 to the journal's or publisher's own policies as well as the COPE guidelines.

2. Retraction notice quality assessment criteria



Q6. Post-retraction: whether the subsequent measures after retraction are stated.?

□ Why

- ✓ If there is still value in the retracted paper, such as possible research results or conclusions, they can be amended, reorganised, or corrected before republication and stated in the retraction notice, according to the ICMJE.

□ How

- ✓ whether retraction notices contain information about how the original withdrawn paper was handled, decisions about the authors, and handling measures such as replacing it with a new version and so on.

□ Quick view

- ✓ ICMJE policy: if certain components of a retracted article, such as hypothetical research findings or discoveries, continue to be valuable, such elements may be amended, reorganized, or corrected prior to republishing and described in the retraction notice.
- ✓ Some journals specify that retracted papers will be kept online to preserve the scholarly record, but will be digitally watermarked "retracted" on each page.
- ✓ Some notices stated that the article will stay in print but given a link to the official retraction notice.

2. Retraction notice quality assessment criteria

Language objectivity

Q7. Emotion of the language : whether the emotional inclination to retract the notices is neutral?

Q8. whether the story is objective from the standpoint of interpersonal interaction?

□ Why

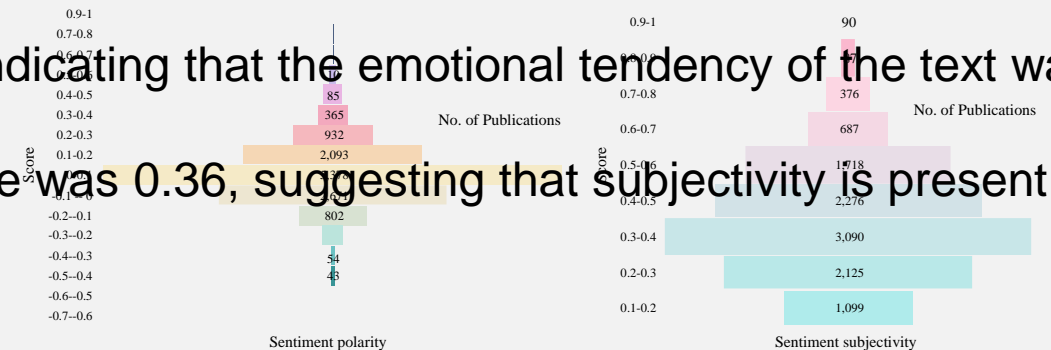
- ✓ The expression of the retraction notices influences readers' judgement of the paper (the problematic section, the assignment of culpability, and so on).
- ✓ The reader's reception of information is directly affected by whether the language is genuine and impartial. A retraction notice can be stigmatized and destigmatized as a communicative genre of speech(Xu & Hu, 2022).
- ✓ COPE expects retraction notices to be objective, factual and avoid inflammatory language.

□ How

- ✓ Employs Python's third-party library TextBlob to do sentiment analysis on retraction notices.
- ✓ Polarity denotes emotive intensity, which ranges from negative to positive and has a value between -1.0 and 1.0. Subjectivity is a numerical value between 0.0 and 1.0 that quantifies the number of personal opinions and information contained in a document, with 0.0 being very objective and 1.0 being very subjective.

□ Quick view

- ✓ The mean polarity score of retraction notices was 0.04, indicating that the emotional tendency of the text was very weak and close to neutral.
- ✓ The mean score for the subjectivity of the retraction notice was 0.36, suggesting that subjectivity is present to some extent.



2. Retraction notice quality assessment criteria

Q9. Identifying retraction: whether the retraction notice includes the full citation information or unique identifier of the retraction publication?

□ Why

A retraction notice should clearly specify which article was retracted.

- ✓ COPE rules demand that a retraction notice identify the retracted article
- ✓ ICMJE believes that retraction notices should include the full citation as well as the DOI or other unique identification of the publication.

□ How

- ✓ whether the retraction notices' titles contained the title of the original paper
- ✓ whether the original text contained the full citation information or unique identifier of the retracted paper
- ✓ whether the retraction notices' references cited the retracted paper..

□ Quick view

- ✓ The requirement of correspondence between the retraction notice and the retracted paper was met by 10033 notices
- ✓ The parties demanding retraction named in the retraction notice can be classified into four groups.
- ✓ Authors, including first author, corresponding authors, co-authors, and other authors.
- ✓ Editors, editorial boards, journals, and so forth
- ✓ Publishers
- ✓ Academic institutions such as the author's institution, research institutes, universities, etc., research funding agencies, authoritative associations and supervisory bodies in the subject field, and so on

2. Retraction notice quality assessment criteria

Q10. Authorship consistency: whether the author of the retraction notices is partially identical to the author of the retracted publication?

□ Why

- ✓ According to COPE retraction guidelines, published research articles can be retracted by their authors alone, or by authors and journal authorities (e.g., journal editors, publishers, or academic bodies) together.
- ✓ Based on the ICMJE guidelines, the author of retraction notices should preferably be the same as the author of the paper. But if they are hesitant or unable to do so, the editor may accept a retraction from another qualified person, be the only author of the retraction, or express concern.

□ How

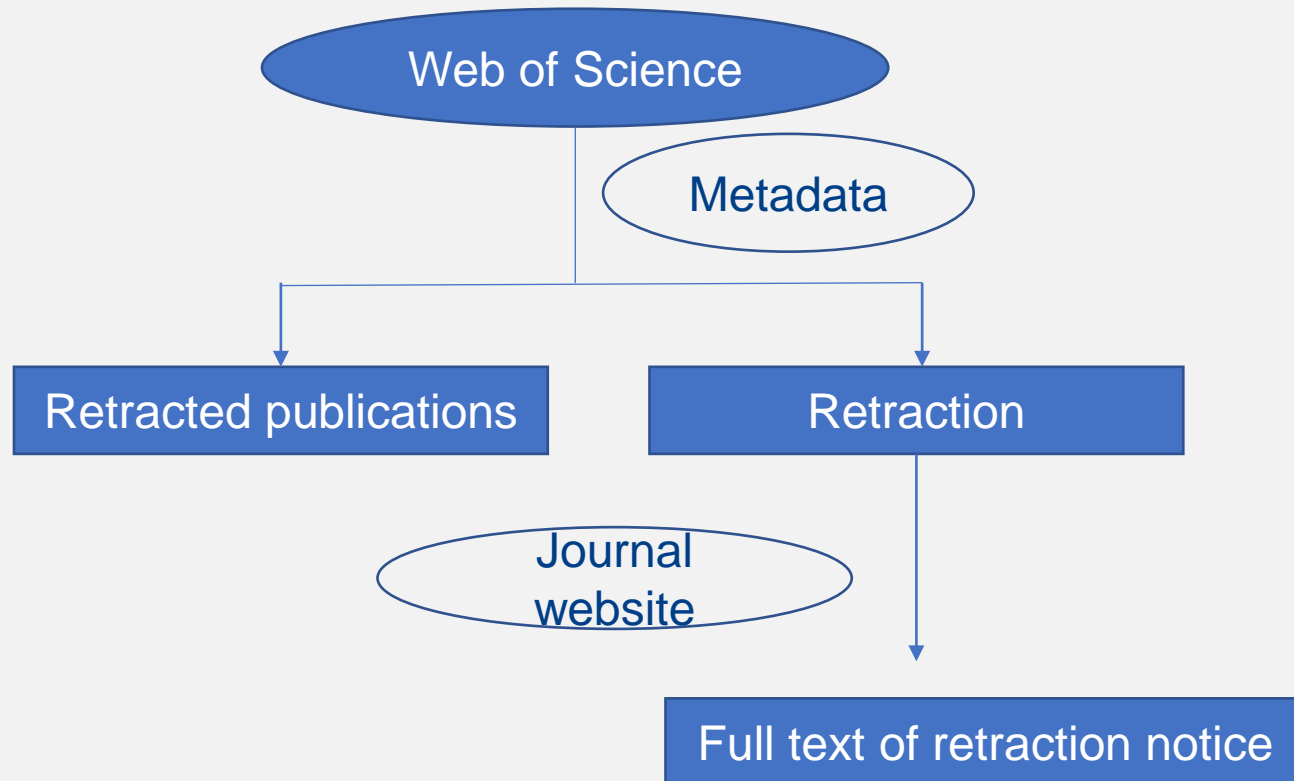
- ✓ Comparison of the author information of the retraction notices and retracted publication

□ Quick view

	Type of authorship	Number of retraction notices
Relevant	the same	10,320
	same but different order of authorship	23
	same as some of the authors of the retracted article	696
	all authors of the retracted article and other authors	15
	some of the authors of the retracted article and other authors	20
	same as the first author of the retracted article	337
No interaction	journal/publisher	185
	Ambiguous	427
	Others	894

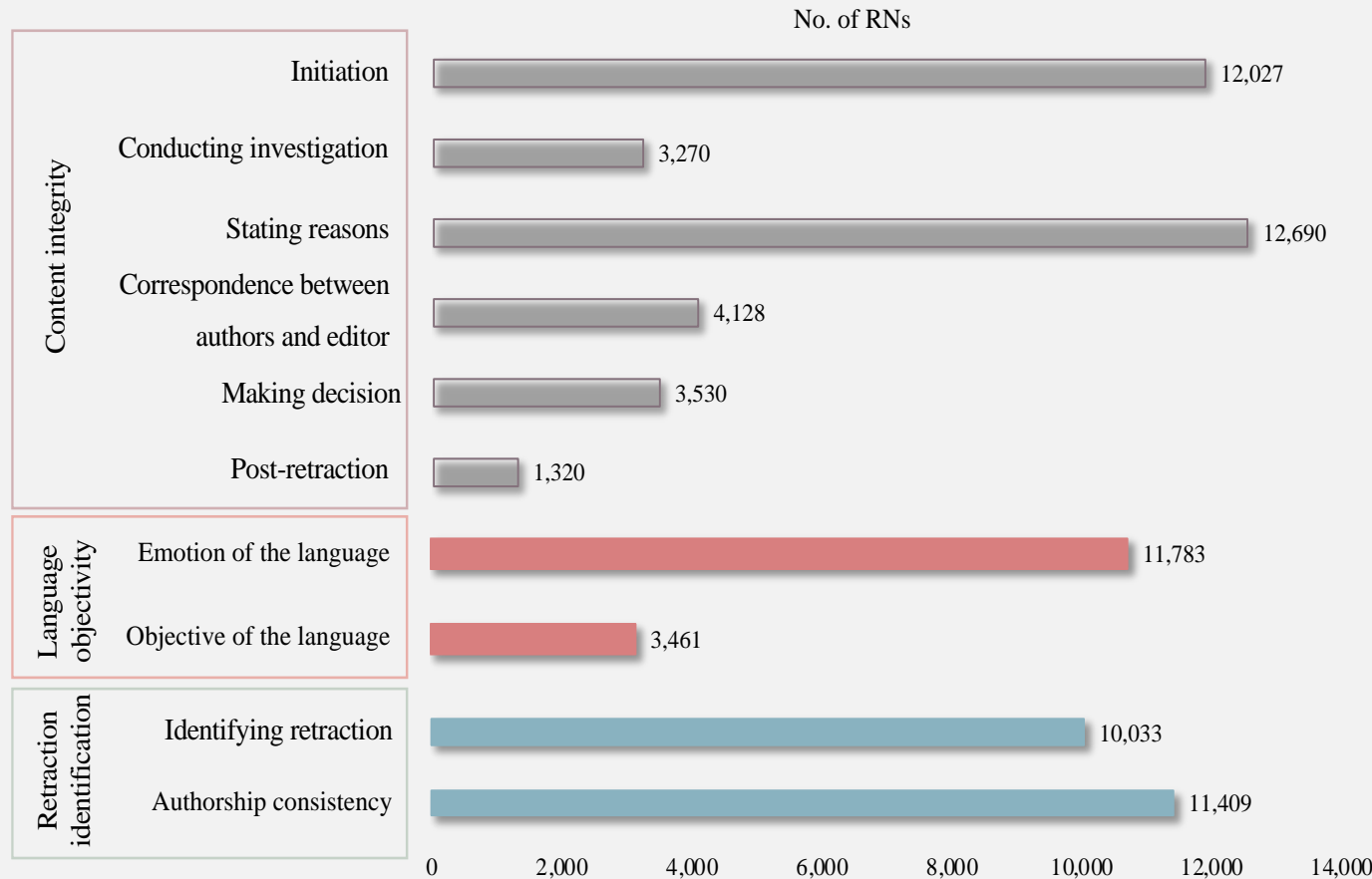
Dimension		Target & Function	Criteria question	Score		Recourses		
				1	0	COPE	ICMJE	Recent studies
Content integrity	Initiation	Reflect facts as historical documents	Q1: Is who initiated retraction indicated?	YES	NO	√		(Vuong, 2020b); (Moylan & Kowalczyk, 2016); (Teixeira Da Silva & Vuong, 2022)
	Conducting investigation		Q2: Is an investigation reported?	YES	NO			(Vuong, 2020b); (Oransky, 2015); (Teixeira Da Silva & Vuong, 2022)
	Stating reasons		Q3: Are reasons for retraction stated?	YES	NO	√	√	
	correspondence between authors and editor		Q4: Is the correspondence between authors and editor mentioned?	YES	NO	√		
	Making decision		Q5: Is retraction policies quoted?	YES	NO	√		(Li et al., 2018)
	Post-retraction		Q6: Are actions taken by the journal after the retraction stated?	YES	NO		√	
Language objectivity	Emotion of the language	Provide news value as public records	Q7: Is the emotional attitude evident?	score of sentiment polarity is between -0.25 and 0.25	score of sentiment polarity is less than -0.25 or more than 0.25	√	√	
	Objectivity of language		Q8: Is the language objective?	score of sentiment subjectivity is less than 0.25	score of sentiment subjectivity is more than 0.25	√	√	
Retraction identification	Identifying retraction	Correspond retracted article	Q9: Is the retracted article clearly identified?	YES	NO	√		
	Authorship consistency		Q10: Are the authors of RNs and retracted articles consistent?	YES	NO		√	

2. Data collection



- We got 12,917 retraction notices with full text from 1983 to 2022 based on WoS.
- The full text has been obtained from its journal website manually.
- The full text information has been checked by different graduate students three times to ensure its reliability.

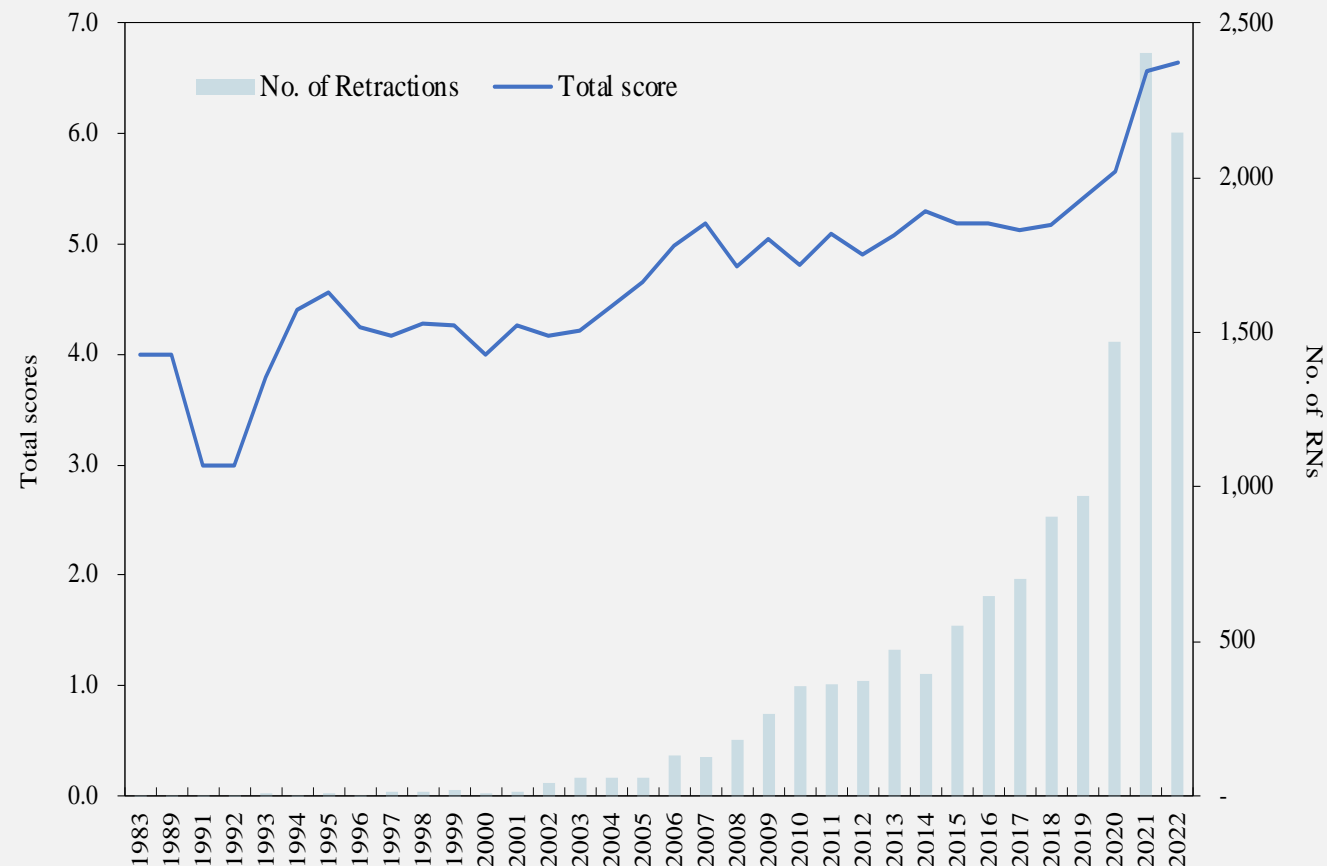
3. Results: The score of ten criteria



Number of retraction notices by meeting individual assessment standards

- More than 90% of the total notices reports who request the retraction (Q1), and reasons for retraction (Q2).
- Only 1,320 notices matched the criteria for further action to be taken to retract papers (Q6).
- The emotional tendencies of most retraction notices (11,783) are all neutral (Q7).
- There is still a number of retraction notice(10%) which did not provide information to connect to its retracted article (Q9).

3. Results: The annual score of retraction notices

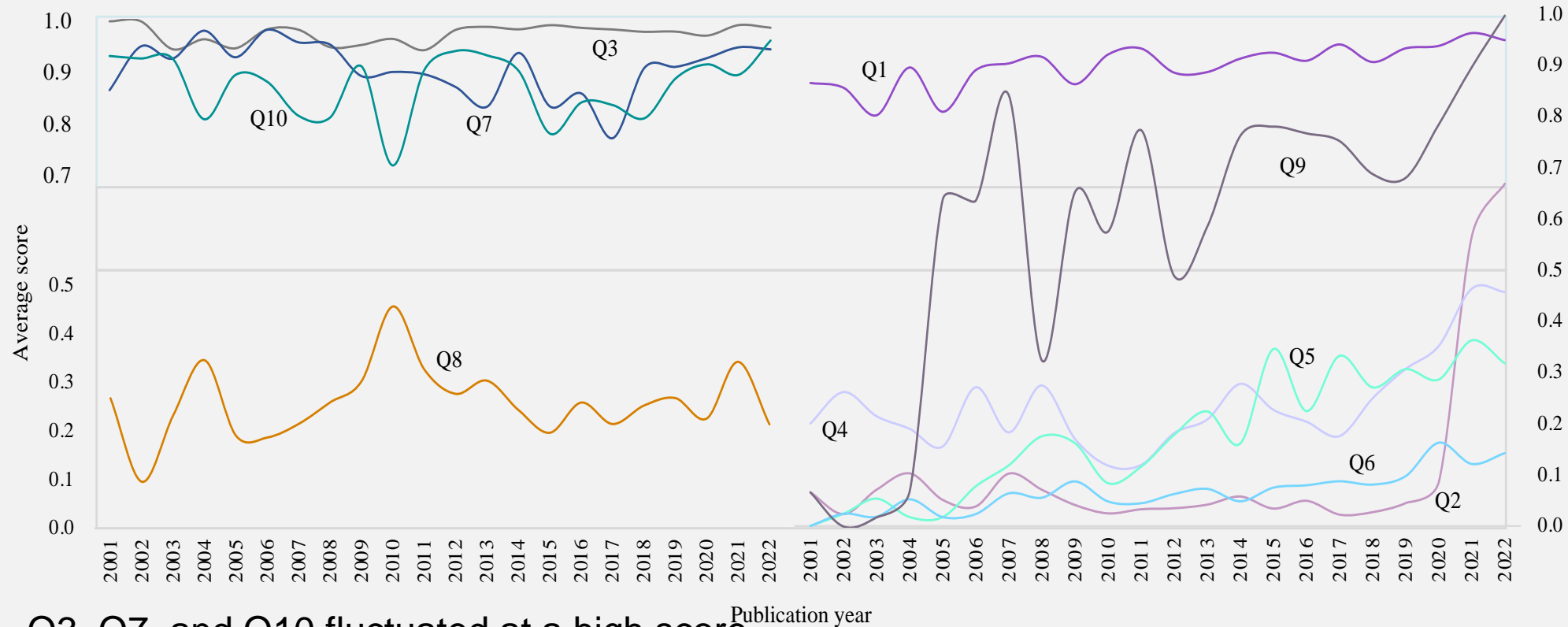


- The annual number of retraction notices increased overall.
- The score of retraction notices stayed around 4.5 during 1995-2006, and increased to another plateau of 5.0 during 2007-2017, and had an obvious increase in the recent five years of 2018-2022.

Global trends of the quantity and quality score of retracted notices

3. Results: The annual score of ten criteria

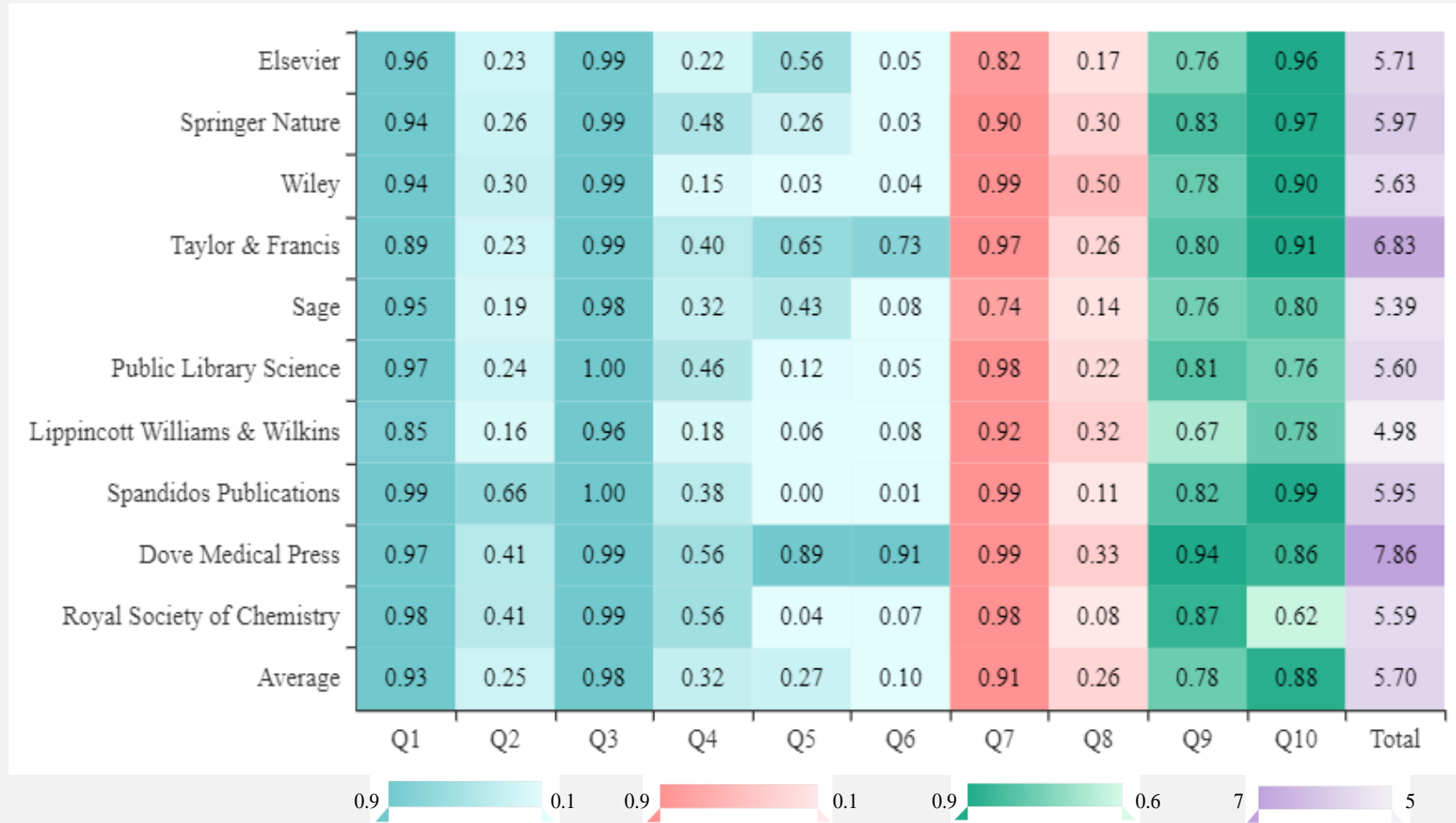
Trends of scores by ten criteria during 2001–2022



- ✓ Q3, Q7, and Q10 fluctuated at a high score.
- ✓ Q8 score was fluctuated below 0.5, indicating that disclosure of efforts taken to follow up on a retracted paper was concerning.
- ✓ Q1, Q2, Q3, Q4, Q5, Q6, and Q9 showed an improving trend, suggesting that on more than half of the criteria, there was an overall improvement in retraction notices over time.

3. Results: The score of top 10 publishers

Distribution of retraction notice scores of the top 10 publishers with the most retractions



- ✓ Dove Medical Press Ltdh, Taylor & Francis got an high score 7.86 and 6.83, respectively
- ✓ The overall score of the other publishers less than 6.0.

3. Results: The score of top 10 journals

Distribution of retraction notice scores of the top 10 journals with most retracted publications



- ✓ two got a score of 7-8.
- ✓ two had a score of 6-7
- ✓ six journals received a score of 5-6

3. Conclusions

This study made an attempt to evaluate the quality of retraction notice, raising attention for retraction notice from scientific community, and promoting the transparency and accountability of publishers. These findings emphasize the lack of uniformity in retraction policies across individual publishers and journals. The criteria outlined in this study serve as a valuable reminder and be referred by publishers and journals to facilitate the standardized composition of retraction notices.

- ✓ More than 78% retraction notices got the score from five criteria (Q1,Q3,Q7,Q9,Q10) , while less than 32% retraction notices got score for the other five score(Q2,Q4,Q5,Q6,Q8), which indicated there is a high potential for improvement of retraction notices.
- ✓ The global average quality score for retraction notices remained around 4 between 1983 and 2004 but steadily increased to approximately 6.5 in 2022. The annual score of criteria got an quick improvement especially in recent five years, especially for Q1, Q2, Q3, Q4, Q5, Q6, and Q9 .
- ✓ Quality levels exhibit variations both among different publishers and within various journals. Dove Medical Press Ltdh, Taylor & Francis got an high score 7.86 and 6.83, respectively, while the overall score of other publishers among the top 10 publishers with the highest number of retractions less than 7.0.

4 Limitations

There are also some limitations of this study.

- ✓ There are different weight of these criteria, for example, the lack of statement of reasons of retraction is more serious than the lack of reporting who investigate the retraction.
- ✓ The criteria of language method could be examined and improved in further studies, for example, by generative AI.
- ✓ The web of science is used, which has limited data of retractions.
- ✓ More explorations of publishers and retraction policy could be conducted for explanation of the performance of retraction notices.



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