Still feeling the effects:
a citation analysis of the highly cited, retracted article on MMR vaccines and autism

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Background

1998 Article Published

2004 Partial Retraction

2010 Notice of Retraction
Background
Objectives

› Determine the characteristics of citations from scholarly literature that reference the 1998 Wakefield study

› Investigate if authors are accurately citing retracted references.
Methodology

I. Cited reference search was run in Web of Science on March 11, 2019
   a. 1211 works retrieved
   b. Excluded Non-English language works, works that could not be verified

II. 1153 publications underwent blinded screening in Covidence
    a. Characteristics were assigned to each citation
    b. Mentions of retractions were documented

III. Qualitative data analysis was conducted using Excel
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Affirmational</td>
<td>Citing work confirms, is supported by, depends on agrees with, or is strongly influenced by cited work.</td>
</tr>
<tr>
<td>Assumptive</td>
<td>Citing work refers to assumed knowledge that is general/specific background or an historical account or acknowledges cited work pioneers.</td>
</tr>
<tr>
<td>Negational</td>
<td>Citing work disputes, corrects/questions or negatively evaluates cited work.</td>
</tr>
<tr>
<td>Perfunctory</td>
<td>Citing work makes a perfunctory reference, is cited without additional comment, makes a redundant reference to cited work, or is not apparently strictly relevant to the author’s immediate concerns.</td>
</tr>
</tbody>
</table>

Adapted from definitions by Bornmann and Daniel.4
Results

Characteristics of References to the Wakefield Article by Year Published

- Negational
- Perfunctory
- Affirmational
- Assumptive
- Other

- 2004 Partial Retraction
- 2010 Notice of Retraction
The most common citation characteristics:

- Negational, 838 of 1153 (72%)
- Perfunctory, 106 of 1153 (9%)
- Affirmational, 94 of 1153 (8%)
Results

2010 Notice of Retraction

Year

No. Publications
0 10 20 30 40 50 60

Retraction
Referenced
Retraction NOT
Referenced
Results

Retractions referenced:
› 2004-2010, 133 of 379 (35%)
› 2011-2019, 360 of 502 (72%)
› 2004-2019, 493 of 881 (56%)
Discussion

› Characteristics were overwhelmingly negative

› *Pre-2004 retraction, authors pointed out the methodological flaws of the study and the small sample size*

› *After 2005, authors had the opportunity to reference the retracted status of the article*
Discussion

› A significant number of articles published after the retraction did not cite the retraction

› *Barriers to citing the retraction include lack of guidelines on how to cited retracted articles from journals, citation managers and citation style guides.*
Conclusions

Scholarly community overwhelmingly negated the findings of the Wakefield article.

There is a need for greater vigilance in ensuring that retracted articles are referenced properly.
Conclusions

This is an example of an infamously retracted study, so readers are probably aware of the retracted status.

For retracted studies that are less well known, can authors assume that their readers will know about the retracted status of the cited work?
Future Research

› Identify barriers to citing retracted articles properly
› Provide recommendations for how journals and bibliographic databases handle retracted publications.
References


