

Public Abstract

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Title: The Effectiveness of correction and republication – A bibliometric analysis

This study evaluates the effectiveness of the practice of correction and republication in the biomedical literature. The evaluation of the effectiveness of corrections to the scientific literature is significant because application of flawed biomedical research findings can have significant negative healthcare and economic consequences. If the practice of correction and republication is effective, then the incidence of citation of the flawed version should diminish, and increased incidence of citation of the republication should be observed. If there is no difference between citation levels for corrected and republished versions of articles (or if citation of the flawed originals is higher than that of the corrected versions), then correction and republication is not effective at preventing the citation of flawed publications that have been officially withdrawn by their authors or publishers.

A statistically significant difference between citation levels of flawed originals and corrected republications is not detected until 8-12 years post-republication. Analysis shows that co-citation of document versions among subsequent authors is very uncommon, providing little evidence that authors citing invalidated literature do so knowingly. As a possible explanation for continued post-republication citation of flawed articles, two databases of bibliographic information pertaining to the scientific literature were examined to determine how often they provide users with information about the republication. Results of this analysis showed substantial variability among sources in their provision of authoritative bibliographic information. The assertion that inappropriate citation behavior may be partly attributable to author ignorance is not refuted by the data.

This study demonstrates that the practice of correction and republication is only marginally effective. The research shows that the practice of correction and republication does not prevent the continued citation of flawed articles post-correction, detecting only a slight decrease in the citation of flawed articles after publication of the corrected version. It is possible that the practice would be made more effective if prominent sources of bibliographic information were more consistent in providing users with information about the status of anomalous articles and the existence of post-publication modifications to the literature. It is certainly incumbent upon the scientific community to improve the effectiveness of making searchers aware of post-publication changes to the literature in order to prevent the potentially tragic consequences of application of flawed information by scientists and medical professionals. Failure to do so will undoubtedly result in a reduction of public trust in the reliability scientific literature and its users.