



Ethical Issues in Oral Sciences

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Abstract

The pressure for scientific production, the allowances of the modern cybernetic world, and insufficient ethical research training of researchers have led to an increasing number of retractions, including in the area of oral sciences. In 2006, a famous oncologist admitted that he had falsified data in three published papers; consequently, he was investigated for other misconduct in science. Scientific journal editors have a great responsibility in the process of preventing dishonesty in research, because they can retract an article whenever they have clear evidence of misconduct. The journal reviewers also must take co-responsibility about scientific integrity in the publication process. However, it is difficult for editors to find uncompromised reviewers as there are increasing demands for publication, requiring a faster review response. Although the editorial system can help in preventing dishonesty in science, this effort can only reach the tip of the iceberg. Editors and reviewers have unique responsibilities in the process of identifying methodological problems and inconsistency of the research. However, social control for good science must be a duty of the whole scientific community, as research fraud has serious consequences for society, exposing participants to risks and making inappropriate use of human and financial resources. The process of training in research ethics should start at the undergraduate level, and surveillance by reviewers, editors, researchers, institutions, and government agencies is mandatory to ensure good practice in science.

Keywords

Misconduct, Scientific integrity, Oral sciences

As in other fields of Science, Oral Science researchers have faced dilemmas related to scientific integrity. Pressure for production, the allowances of the modern cybernetic world, and insufficient ethical research training of researchers have led to an increasing number of paper retractions, including in the area of the Oral Sciences. A well-known case, in the field of oral cancer, was reported in 2006. A famous Norwegian oncologist, Jon Sudbø, admitted having falsified data in three published papers [1]. In addition to falsifying data, such misconduct as duplicating images and claiming funding from a nonexistent grant were investigated. The case involved an international collaboration in the field of oral cancer prevention, partially sponsored by the U.S. National Cancer Institute, and it raised questions about what researchers in institutional projects should do in order to assure research accountability and validity of data collected during collaboration [1].

Plagiarism, errors, fabrication and falsification of data have most often occurred in the scientific community [2]. A review of 2,047 articles retracted in the medical literature revealed that misconduct in science has been more frequently documented than previously appreciated [3]. Of these 2,047 retracted articles, 67.4% comprised misconduct, including fraud or suspected fraud (43.4%), duplicate publication (14.2%), and plagiarism (9.8%) [3].

Scientific journals editors have a great responsibility in the process of preventing dishonesty in science. According to the Committee on Publication Ethics (COPE) [4], journal editors should consider retracting an article if they have clear evidence that its findings are questionable, if the findings have been previously published without proper cross-referencing, permission or justification, and if it constitutes plagiarism [4]. In case of text recycling in a previously published article, editors should publish a correction or retraction of the article, depending on the degree and nature of the overlap following the COPE flowchart for dealing with suspected redundant publication [5].

Current requirements of good scientific practice have led to the need for reviewing the conduct guidelines for journal editors. According to the Code of Conduct and Best Practices Guidelines [6], journal editors should be aware of research in peer review, supporting initiatives designed to reduce research and publication misconduct, adopting systems for detecting plagiarism, and supporting initiatives to educate researchers about publication ethics guidance and criteria for authorship. It is mandatory that journal editors require reviewers to disclose any potential competing interests before reviewing a submitted paper. Finally, editors and reviewers must verify that a submitted paper was carried out according to the internationally accepted guidelines on ethics and approved by an appropriate ethical board [6].

Journal reviewers also must take co-responsibility with scientific integrity in the publication process. However, attracting and retaining good referees represents a challenge for editors, nowadays. Unfortunately, fewer reviewers want to referee, considering the increasing demand for publication, requiring a faster review response [7]. Knowing the high standards of the reviewing process may allow reviewers and readers to make an appropriate judgment about journal integrity in publication. The journal police transparency should include: a policy on anonymity, a statement on whether all papers are accepted for review, a statement on conflicts of interest, giving information about reviewers' selection, the length of review process, rejection rates and feedback to referees [7].

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Improper medical care may be a consequence of fraudulent studies. Retracted primary study, or any secondary study that draws the ideas of the retracted one, may represent a risk for patients. Some authors [8] have evaluated 788 retracted papers published from 2000 to 2010. One hundred eight retracted primary papers (22.8%) met the inclusion criteria. Retracted papers were cited over 5000 times, with 93% of citations suggesting that the findings in retracted papers can influence subsequent research. Of the primary studies, the sample enrolled 28 000 subjects and 9189 patients were treated. In secondary studies that cited a retracted paper, over 400 000 subjects were enrolled and 70 501 patients were treated.

In this context, an author statement of relevant relationships with pharmaceutical agencies is an important policy in scientific publication. It is well known that in many cases pharmaceutical agencies support academic research and institutions. Frequently, they hire medical writers and professional experts for conducting research and guidelines on drugs and medical technologies produced by industry. It is important to state that authors of meta-analyses are not required to report conflicts of interest as original authors are requested to do, in their reports [9]. A meta-analysis of randomized control trials that patented pharmacological treatments has shown that only 7% of them have declared funding by industry. Ninety-one out of the 132 papers (69%) that reported author financing by industry had one or more authors with pharmaceutical financial ties [9].

The consequences of misconduct in sciences have been systematically studied [10]. Some authors tried to measure not only the damaging effects of misconduct on the researchers careers, but also the financial costs resulting from the retraction of scientific articles due to research misconduct. Data from the Office of Research Integrity (ORI) were reviewed from public databases in order to estimate the costs of retracted manuscripts and funding of researchers that have committed misconduct. Authors have found that papers retracted due to misconduct accounted for approximately less than 1% of the National Institute of Health reserve between 1992 and 2012. On the other hand, researchers decreased publication by 91.8% after censure by the ORI and experienced large declines in funding¹⁰. However, it seems that the greatest damages of scientific dishonesty

are on science itself and on patients that are at risk of receiving inadequate treatment recommended by fraudulent research.

Although the editorial system can help in preventing dishonesty in science, this effort can only reach the tip of the iceberg. Suspects of fraud or falsification can take a long time till being detected. Editors and reviewers have unique responsibilities in the process of identifying methodological problems and inconsistency in the research. However, social control for good science must be a duty of the whole scientific community [2], as research fraud has serious consequences for society, exposing participants to risks and making inappropriate use of human and financial resources. The process of training in research ethics should start at the undergraduate level. Surveillance process by reviewers, editors, researchers, institutions, government agencies is mandatory for good practice in the science production process, including the Oral Sciences.

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