

Scholarly Publishing

Surveying Retracted Studies and Notices Within the Field of Radiation Oncology

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Summary

The purpose of this study was to characterize retracted studies within the field of radiation oncology. We searched multiple databases and found the major reason for retraction was methodological misconduct and honest scientific error. The median time to retraction was 44 months. However, 42 studies (72%) were still cited after retraction notices were published.

Purpose: The purpose of this study was to characterize retracted studies within the field of radiation oncology.

Methods and Materials: Computerized searches were performed in Ovid MEDLINE, PubMed, Ovid EMBASE, and the Cochrane Library up to May 2017 looking for retracted studies using the terms “retraction note,” “retracted note,” “withdrawn” and “radiotherapy,” and “radiation oncology.” Additional studies were identified by hand-searching 10 discipline-specific journals. Two authors independently screened papers and then extracted author demographics, journal characteristics, and retraction-specific variables.

Results: Of the 58 studies identified, the most common reasons for retraction were misconduct (43%), methodological error (21%), authorship issues (5%), unknown causes (5%), and journal (administrative) errors (3%). A total of 13 systematic reviews or protocols (22%) were withdrawn from the Cochrane Library for being out-of-date or redundant. All but one retracted study and retraction notice were available in portable document format. Of the 57 retrieved papers, 79% were identified as retracted via in-text notations or watermarks. Overall median time to retraction was 44 months (interquartile range, 11-98 months). However, 42 studies (72%) were still cited after retraction notices were published.

Conclusions: A retracted study within the field of radiation oncology remains a relatively uncommon event. Although promising, our data suggest that the majority of these retracted articles continue to be cited as valid research. As such, there is still a need for clinicians to remain vigilant with their academic rigor and good clinical

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research practices. There is an urgent need for publication houses to foster universal publishing standards along with discipline-specific retraction guidelines. Crown Copyright © 2018 Published by Elsevier Inc. All rights reserved.

Introduction

The number of articles being retracted from the biomedical literature as a result of research misconduct or error continues to rise each year (1, 2). Research that has been compromised can mislead other researchers and clinicians, but more importantly erroneous research may also deleteriously affect direct patient care (3). A number of examples in the literature show how the use of incorrect information can potentially harm patients, including those in the cancer care setting (4).

Historically, it was always thought that many of the retracted articles were attributed to human error (1, 5). However, more comprehensive assessments revealed that academic misconduct was the most common reason for retractions in the biomedical literature (5, 6). Common examples of academic misconduct reported in the literature include proven fraud, suspected fraud, duplicate publication, and plagiarism (7). Factors that lead researchers to commit academic misconduct are varied and poorly understood but have been linked to author skill base, geographic locations, lack of physical resources, and a highly competitive workplace environment (7).

Of the number of retractions within the field of cancer research (4, 8), only 1 study has included retractions from within the field of radiation oncology (4). Therefore, the aim of this study is to determine the rate of, characteristics of, and reasons for retraction or withdrawal of studies in the field of radiation oncology.

Methods and Materials

The method for this review was derived from the systematic review methodology adopted by the Cochrane Collaboration (9) and previous retraction studies (5, 6, 10-13).

Retraction search strategy

Four databases (Ovid MEDLINE, Ovid EMBASE, PubMed, and the Cochrane Library) were searched from date of inception to May 2017 for retracted or withdrawn articles in the field of radiation oncology. In the MEDLINE database, we used the retraction filter “retraction of publication” with the National Library of Medicine’s Medical Subject Headings and free-text terms sourced from other reviews, such as “radiotherapy,” “radiosurgery,” “stereotactic radiosurgery,” or “irradiation.” In EMBASE, we used the free-text terms such as “retracted publication,” “retracted study,” or “retraction notice” with “radiotherapy” as a subject heading.

In addition to the automated search strategies, we searched websites (eg, Retraction Watch [<http://retractionwatch.com>]; PubPeer [<https://pubpeer.com>]) and 10 journals to which we had immediate access through our department that had the term “radiation” or “radiotherapy” (ie, *International Journal of Radiation Oncology, Biology and Physics*; *Radiotherapy and Oncology*; *Radiation Oncology*; *Journal of Medical Imaging and Radiation Oncology*; *Seminars in Radiation Oncology*; *Practical Radiation Oncology*; *Radiation Physics and Chemistry*; *International Journal for Radiation Physics and Chemistry*; *Radiation Research*; and *Journal of Radiation Research*). One author (J.W.) performed the search, with activity limited to articles in English only. The search strategy used for Ovid MEDLINE is in Appendix E1 (available online at [10.1016/j.ijrobp.2018.06.028](https://doi.org/10.1016/j.ijrobp.2018.06.028)).

Eligibility criteria

Any published study, regardless of clinical setting or study design, that was retracted or withdrawn via formal notification and made reference to radiation therapy planning, radiation treatment, radiation oncology, medical physics, or any other type of therapeutic irradiation was included. Studies in a language other than English or in a nonpeer reviewed format (ie, unpublished manuscripts) were excluded. Reasons for study retraction were broadly classified into familiar categories as seen in previous retraction publications (10-13): (1) misconduct (eg, fraud, plagiarism, overlap, duplicate publication [in a different journal]); (2) methodological error (eg, incorrect data usage); (3) authorship issues (eg, author request, lack of permission to use data, inclusion of authors without consent and/or knowledge); (4) journal administrative errors (ie, duplicate publication); (5) withdrawn from the Cochrane Library (eg, out-of-date or redundant reviews); and (6) unknown/not stated.

Study selection process

One author (J.W.) scanned the abstracts retrieved in the initial search to exclude irrelevant studies and then screened titles and abstracts against the inclusion criteria. Full-text articles were retrieved and reviewed independently by two authors (C.F., J.W.) for the purpose of applying the inclusion criteria. In all instances, differences of opinion were resolved by discussion among the authorship team.

Data extraction and analysis

Two authors (J.W., D.G.H.) independently extracted the following variables using a data extraction sheet developed by the authorship team: primary author surname, date of

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