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Retraction of publications in nursing and midwifery research: A systematic review

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ABSTRACT

Background: Rates of manuscript retraction in academic journals are increasing. Papers are retracted because of scientific misconduct or serious error. To date there have been no studies that have examined rates of retraction in nursing and midwifery journals.

Design: A systematic review of Journal Citation Report listed nursing science journals.

Data sources: The Medline database was searched systematically from January 1980 through July 2017, and www.retractionwatch.com was manually searched for relevant studies that met the inclusion criteria.

Review methods: Two researchers undertook title and abstract and full text screening. Data were extracted on the country of the corresponding author, journal title, impact factor, study design, year of retraction, number of citations after retraction, and reason for retraction. Journals retraction index was also calculated.

Results: Twenty-nine retracted papers published in nursing science journals were identified, the first in 2007. This represents 0.029% of all papers published in these journals since 2007. We observed a significant increase in the retraction rate of 0.44 per 10,000 publications per year (95% CI; 0.03–0.84, p = .037). There was a negative association between a journal's retraction index and impact factor with a significant reduction in retraction index of −0.57 for a one-point increase in impact factor (95% CI; −1.05 to −0.09, p = .022). Duplicate publication was the most common reason for retraction (n = 18, 58%). The mean number of citations manuscripts received after retraction was seven, the highest was 52. Most (n = 27, 93.1%) of the retracted papers are still available online (with a watermark indicating they are retracted).

Conclusion: Compared to more established academic disciplines, rates of retraction in nursing and midwifery are low. Findings suggest that unsound research is not being identified and that the checks and balances incumbent in the scientific method are not working. In a clinical discipline, this is concerning and may indicate that research that should have been removed from the evidence base continues to influence nursing and midwifery care.

What is already known about the topic?

- The number of papers published in science journals is increasing.
- Seven hundred and forty-two scientific papers have been retracted since 2000.
- In medicine and other science disciplines retraction is more common in journals with a higher impact factor.

What this paper adds

- Twenty-nine papers published in nursing science journals have been retracted.
- No study published in a nursing science journal has been retracted because of fraud.
- Nursing journals with a higher impact factor are associated with fewer retractions.

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1. Background

Retraction refers to the removal of a manuscript from the evidence base because the reported observations are unsound. In clinical professions (e.g. medicine, nursing and midwifery) retraction is a particularly important issue because this research should not influence clinical practice (Davis, 2012). Papers are retracted for two main reasons: scientific misconduct (that includes plagiarism and data fabrication) and serious errors (Crocker, 2011). The decision to retract a paper is made by journal editors, authors or the author's employer. Most retracted papers can still be accessed; generally, they are watermarked "retracted" on the journal website (with a notice explaining the reason for retraction). The number of scientific papers that are retracted is increasing dramatically. For example, Van Noorden (2011) reported that from 2001 to 2010 there was a 1000% increase in the number of retractions. In health research, authors have reported increasing rates in medicine (Wager and Williams, 2011), cancer research (Bozzo et al., 2017), infection and immunity research (Fang and Casadevall, 2011) and biomedical science (Gasparyan et al., 2014).

There is tremendous pressure in academia to "publish or perish" as well as get cited. As a consequence, authors may be tempted to take short cuts, manipulate or even fabricate data (Breen, 2016; Hicks and Harris, 2016; Jackson et al., 2014). Retraction, is an important deterrent in the scientific method. Having a paper retracted can have a profound negative impact on academic careers. It is therefore incumbent upon members of the scientific community to monitor and report possible error or misconduct.

Nursing and midwifery are maturing disciplines. Authors have expressed concern that research misconduct is increasing in nursing research (Fierz et al., 2014; Habermann et al., 2010; Rankkin and Esteves, 1997). To date, there have been no studies that have explored the number of retractions in nursing science journals. The aim of this systematic review was therefore to examine the number and rate of retracted papers in nursing and midwifery science journals.

2. Methods

A systematic review of manuscripts published in JCR (Journal Citation Report) nursing science journals was undertaken. This review was limited to Journal Citation Report listed journals as they have an impact factor and are regarded as the key journals in nursing and midwifery. Reporting adheres to PRISMA reporting guidelines (Moher et al., 2009) and the methodological approach is based on the work of Bozzo et al. (2017) who reviewed retractions in cancer research. It was our intention to register this study with the international register of systematic reviews (PROSPERO https://www.crd.york.ac.uk/PROSPERO/). However, the application was considered outside of the scope of PROSPERO since the research question did not have a specific health outcome. The protocol can be accessed from https://figshare.com/s/9cc0a5d4a47c53acba6c

2.1. Inclusion criteria

Studies were included in the review if they were:

- Retracted for any reason
- Published in any Journal Citation Report (2016) nursing science journal
- Published in any language
- Any study design (including reviews)

If articles were retracted because of significant overlap or duplicate publication, we included the paper that was published first. There were two exceptions to this rule: 1. If the journal was not listed in the Journal Citation Report, or 2. If the first publication was not retracted.

Table 1
Search strategy designed to uncover all retractions in nursing research.

Search strategy
1. (*retract** OR *remove** OR *recall** OR *withdraw** OR '*retract* publi*'~10 OR '*remove publi*'~10 OR '*recall* publi*'~10 OR '*withdraw* publi*'~10). [mp = title, abstract, original title, name of substance word, subject heading word, keyword heading word; protocol supplementary concept word; rare disease supplementary concept word; unique identifier; synonyms].
2. **Retraction of Publication**
3. 1 OR 2
4. Limit 3 to (nursing journals AND (retracted publication OR retraction of publication))

Legend:
- Key words are italicised.
- MeSH are boldened.
- Boolean operators are capitalised.
- Filters are underlined.

2.2. Data sources

MEDLINE via Ovid was searched systematically for all retractions from January 1980 through to July 2017. MEDLINE was selected as it indexes all journals listed in the Journal Citation Report (confirmed with two external health librarians). Accordingly, it was unnecessary to search on other databases.

2.3. Search strategy

The search strategy was developed specifically for MEDLINE (Table 1). It employed a highly-sensitive syntax following recommendations by the Cochrane Collaboration (Higgins and Green, 2008, p. 132). Keywords, index terms, and filters relating to retraction were employed given the various ways MEDLINE reports retraction.

Retraction watch (www.retractionwatch.com) was also manually searched for relevant studies that met the inclusion criteria. Two researchers undertook the title and abstract and full-text screening. Any disagreement during this phase was resolved by a third member of the research team (RG). The total number of papers published in Journal Citation Report nursing science journals was calculated. This information was extracted from the Scopus database because it proved extremely cumbersome to perform these calculations using Medline. These data were used to determine (and plot) the proportion of articles that were retracted each year (Bozzo et al., 2017).

2.4. Data extraction

AG undertook the data extraction and tabulated the data. For each article, we extracted the following data: country of the corresponding author, title of the journal that issued the retraction, journal impact factor (Journal Citation Report, year of retraction), study design, year of retraction, time between publication and retraction, funding source, number of citations after retraction, and reasons of retraction. The reason for retraction was classified as (i) plagiarism, (ii) duplicate publication, (iii) fraud, (iv) error, (v) authorship issues, and (vi) ethical issues and were obtained from the retraction notification published by the journals. The criteria described by Bozzo et al. (2017) were used to classify how the journal handled the retracted paper. Each retracted paper was categorized as: (i) intact – if the paper remained online without alteration, (ii) watermarked – if the manuscript was stamped "retracted", or (iii) removed – if a retraction notice was found and the article was removed from the website.

A "retraction index" was calculated using the method described by Fang and Casadevall (2011) for each journal that had at least one retracted paper. The journal retraction index was defined as the number of retractions between 2007 and 2017, multiplied by 1000, and divided by the number of published articles during the same period (Fang and