

PROFESSION

Misconduct accounts for most journal retractions

Retractions are still rare, but experts say they should give physicians pause before acting quickly in response to published medical evidence.

By KEVIN B. O'REILLY, amednews staff. Posted Oct. 15, 2012.

The rate of article retractions in the biomedical and life-sciences literature has risen tenfold in the last 35 years. Most retractions are due to fraud, plagiarism and other misconduct, said a study published online Oct. 1 in the journal *Proceedings of the National Academy of Sciences*.

The proliferation of journals and the intense competition for research grants and academic tenure may be contributing to the growing problem, experts said. Along with continuing concerns about researchers' financial relationships with industry, the rise of scientific misconduct adds yet another reason for practicing physicians to scrutinize carefully what they read in medical journals, they added.

About one article in 100,000 was retracted in 1977, when the retraction was a fairly new method of correcting the scientific record. In 2012, about one in 10,000 articles gets retracted, said the study, which consisted of a review of 2,047 retractions indexed by U.S. National Library of Medicine's PubMed service.

Two-thirds of retractions are for misconduct such as fabricated or falsified data, plagiarism or publishing the same article in more than one journal, compared with 21% for errors and the remainder for unknown reasons. Earlier studies concluded that most retractions are for honest mistakes.

For the *PNAS* study, researchers consulted secondary sources such as reports in other medical journals, news reports and government investigations to reclassify 118 retractions as the results of fraud rather than error.

"This is a huge concern, not because most of the literature is wrong, but because being aware that this is a problem introduces a complexity in terms of trying to interpret new research findings," said Ferric C. Fang, MD, lead author of the study. "People who work in science realize the literature is not a set of facts, but a set of observations and opinions that vary in quality and reliability. But a line's really crossed when you see fraudulent work that actually has the potential to harm patients."

The retracted article with the most citations is Dr. Andrew Wakefield's 1998 study in *The Lancet*, which purported to link autism and bowel disease to the measles, mumps and rubella vaccine. It was retracted in 2010 and was dubbed "an elaborate fraud" by the influential British medical journal *BMJ*.

Science leads the retraction count with 70, followed by *PNAS* with 69. Sixteen articles have been retracted by *The New England Journal of Medicine*, said the study, which did not list any retractions in *The Journal of the American Medical Association*.

The weblog Retraction Watch was started in 2010 by two medical journalists to track journal article retractions.

"There are lots of [retractions] out there, and we're not able to cover them all," said Adam Marcus, co-author of the blog and editor of *Anesthesiology News*.

Anesthesiology has been troubled by misconduct in the last few years, with dozens of articles by Scott S. Reuben, MD, retracted for falsified data. In 2010, Dr. Reuben pleaded guilty to health care fraud. He was sentenced to six months in federal prison and hit with \$415,000 in fines, forfeiture and restitution.

Making retractions more informative

The *PNAS* study could represent a breakthrough in persuading more journal editors to specify why articles get retracted, Marcus said.

"I hope it precipitates a culture change among journal editors who feel they really don't need to say very much for a particular retraction," he said. "To say simply that an article was retracted helps nobody. It certainly doesn't help science, and that's what it's all about. It's almost like saying, 'There was a fire,' and not adding anything else."

The Committee on Publication Ethics, which was started in 1997 and counts major journal publishers such as Elsevier, Wiley-Blackwell and Wolters Kluwer as members, in 2009 issued guidance on how to handle retractions. Journals should clearly identify the retracted article, state who is retracting it and say exactly why it is being retracted. Stating the reason for the retraction helps distinguish misconduct from honest error. The International Committee of Medical Journal Editors, of which *JAMA* is a member, has a similar policy on retractions.

All organizations that get federal research funding "are required to provide training in the responsible conduct of research to all research staff who have direct and substantive involvement in proposing, performing, reviewing or reporting research."

according to the Dept. of Health and Human Services' Office of Research Integrity. The office, launched under another name in 1989, investigates misconduct allegations.

In addition to those requirements, medical students and residents are instructed on the ethical conduct of research throughout their training, said Ann C. Bonham, PhD, chief scientific officer at the Assn. of American Medical Colleges. Although such training is essential, Bonham and other experts said mentorship also can help junior researchers stay on a straight and narrow path.

"It's the ethical obligation of the head of the research lab to walk the walk and talk the talk," Bonham said. "I don't think it has to be said in a patronizing way, or in accusatory way, but just talking about the ethics of honesty and not faking data. ... It's not just the moral implications, but the career-ending implications."

The rising rate in retracted articles may be misleading, said Jonathan Seltzer, MD, past president of the Assn. of Clinical Research Professionals, which provides training and other resources to more than 18,000 clinical researchers worldwide.

"Are people rottener than they always were? Probably not," he said. "There is more pressure now, that's true. But I also think that if you're looking for misconduct, you find more. One in 10,000 papers retracted — that's pretty good. It also seems like there's a few bad apples that are spoiling the whole bunch."

For physicians, scientific fraudsters heighten the importance of treading cautiously before changing clinical practice, he added.

"Don't do anything on the basis of one article," Dr. Seltzer said.

ADDITIONAL INFORMATION:

Why biomedical articles get retracted

Most retractions in biomedical literature are due to scientific misconduct, for a variety of reasons, said a recent review of 2,047 retractions since 1977. A few of the article fell into more than one category.

34%: Fabrication/falsification

21%: Error

14%: Duplicate publication

10%: Plagiarism

9%: Suspected fraud

14%: Other/unknown

Source: "Misconduct accounts for the majority of retracted scientific publications," *Proceedings of the National Academy of Sciences of the United States of America*, published online Oct. 1 (ncbi.nlm.nih.gov/pubmed/23027971/)

WEBLINK

"Reforming science: structural reforms," *Infection and Immunity*, March (www.ncbi.nlm.nih.gov/pubmed/22184420/)

"Retraction guidelines," Committee on Publication Ethics, September 2009 (publicationethics.org/files/retraction%20guidelines.pdf)

Retraction Watch blog (retractionwatch.wordpress.com/)

"Misconduct accounts for the majority of retracted scientific publications," *Proceedings of the National Academy of Sciences of the United States of America*, published online Oct. 1 (www.ncbi.nlm.nih.gov/pubmed/23027971/)

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