COVID-19

Disgraced COVID-19 studies are still routinely cited

Journal mentions of studies based on disputed data from Surgisphere often fail to clearly flag retractions

By Charles Piller

In June 2020, in the biggest research scandal of the pandemic so far, two of the most important medical journals each retracted a high-profile study of COVID-19 patients. Thousands of news articles, tweets, and scholarly commentaries highlighted the scandal, yet many researchers apparently failed to notice. In an examination of the most recent 200 academic articles published in 2020 that cite those papers, Science found that more than half—including many in leading journals—used the disgraced papers to support scientific findings and failed to note the retractions.

COVID-19 “is such a hot topic that publishers are willing to publish without proper vetting,” even in the face of retractions that made global headlines, says Elizabeth Suelzer, a reference librarian at the Medical College of Wisconsin who has written about problematic citations to a retracted 1998 study in The Lancet falsely linking vaccination to autism.

Both of the retracted COVID-19 papers, one in The New England Journal of Medicine (NEJM) and the other in The Lancet, were based on what appeared to be a huge database of patient records compiled from hospitals worldwide by Surgisphere, a small company operated by vascular surgeon Sapan Desai, who was a co-author on each article. The 22 May 2020 Lancet paper ostensibly showed that hydroxychloroquine, an antimalarial drug promoted by former President Donald Trump and others, could harm rather than help COVID-19 patients. Its publication led to a temporary halt in a major clinical trial and inflamed an already-divisive debate over the drug, which has proved to be useless against COVID-19. The 1 May NEJM article corroborated other evidence that people already taking certain blood pressure medicines did not face a greater risk of death if they developed COVID-19.

Questions soon arose about the validity, and even existence, of the Surgisphere database, however, and the retractions followed on 4 June (Science, 12 June 2020, p. 1167). But of the 200 papers examined by Science—all published after the retractions—105 inappropriately cited one of the disgraced studies. In several cases it was a primary source for a meta-analysis combining multiple studies to draw overarching conclusions. In most, the studies were cited as scientific support or context. Science also found a handful of articles that uncritically cited an influential April preprint based on the same Surgisphere data set, which described the antiparasitic drug ivermectin as beneficial in critical COVID-19 cases. (There is no standard way to retract preprints, however.)

Ivan Oransky, co-founder of the website Retraction Watch, says such blunders occur because “people are either willfully or negligently not checking references.” Many authors copy and paste lists of apparently relevant citations from similar papers without actually reading them, he says. “It’s frightening. It’s terrible, but common.”

Many of the tainted citations appeared in papers published by little-known journals, but at least a dozen found their way into major publications. For example, three articles in PLOS ONE, the prominent open-access journal, cited the retracted papers in discussions of pandemic conditions in Europe. A 28 December paper in the Proceedings of the National Academy of Sciences (PNAS)—one of the most influential journals—discussed the risks and benefits of drugs to treat COVID-19, including the Lancet’s hydroxychloroquine findings. It called them “controversial” and only noted the paper was retracted in its citation, without citing the retraction notice directly.

Editors at those two publications said they would correct the references and take steps to prevent such problems in the future. Renee Hoch, a PLOS ONE editor and publication ethics manager, wrote in an email that the publication relies on authors and its outside, volunteer editors to check citations, and she was caught by surprise when contacted by Science. “We are currently following up on this issue with high priority in light of the implications for public health and ongoing COVID-19 research,” she wrote.

Hoch added that reliance on retracted work, “either directly or in the form of sup-
Controversial study says U.S. labs use 111 million mice, rats

Figure is more than seven times some estimates, but critics say analysis is flawed

By David Grimm

The most numerous mammals in U.S. research are also the most invisible. Mice and rats comprise the vast majority of lab mammals, yet no one knows exactly—or even approximately—how many are used in scientific experiments every year. Now, for the first time, someone has attempted to calculate this number using data from U.S. labs, and it’s big: Nearly 111 million mice and rats are used annually in U.S. biomedical research, according to a new study. That represents more than 99% of all lab animals.

“It’s a very thoughtful and reasonable analysis,” says Sue Leary, president of the Alternatives Research & Development Foundation (ARDF), which seeks to reduce the number of rodents used in U.S. research, saying the figures are a gross overestimation, and that the study itself is deeply flawed. “It’s a really disappointing analysis,” says Allyson Bennett, senior editor at Speaking of Research, which advocates for the use of lab animals. The organization’s own estimates—extrapolated from European labs, which do count mice and rats—puts the number of rodents used annually in U.S. facilities at 10 million to 25 million. That would represent 93% to 97% of all U.S. research mammals.

Because the AWA doesn’t cover most animals, the federal government doesn’t report their numbers, as it does for animals like dogs, rabbits, and monkeys. So Larry Carbone, a veterinarian who worked for 4 decades in laboratory animal care at Cornell University and the University of California, San Francisco, tried to figure them out for himself. He did something he has long been the target of when he ran animal facilities: File Freedom of Information Act requests. Animal rights groups often use such requests to dig up animal welfare
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