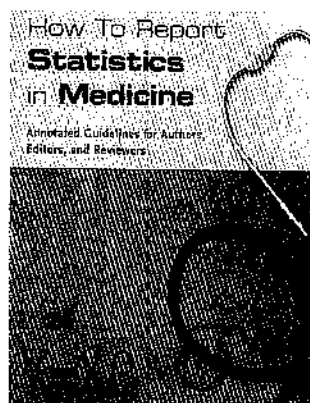


Book Reviews

How to Report Statistics in Medicine: Annotated Guidelines for Authors, Editors and Reviewers (Medical Writing and Communication). Second edition. Thomas A Lang, Michelle Secic. American College of Physicians, 2006. 488 pp. \$54.95; £34.95. ISBN 10: 1-930513-69-0; ISBN 13: 978-1-930513-69-3.



We editors and readers of science often assume that the author of a journal article is proficient enough in statistics to use and correctly report appropriate statistical methods. And we assume that the peer review process will further ensure reliable reporting of statistics and the conclusions based on them. These assumptions

are far from true. Few biomedical researchers have had more than a basic course in statistics, and that course most likely emphasized the mathematics of the methods rather than their appropriateness in scientific studies. Furthermore, most editors – being language oriented – have had even less exposure to statistical methods and, indeed, avoid this “difficult” subject. Lang and Secic point out that these shortcomings lead to misleading interpretations of research results – often influencing patient care. Inappropriate methods and reporting are “unfortunate at best unforgivable at worst, but understandable in either case”.

How to Report Statistics in Medicine is intended for editors, peer reviewers, and readers of science, and it goes a long way toward improving the credibility of statistically-based scientific reporting. I, as a teacher and editor of scientific writing, find the book to be “the one I’ve always wanted”. For the past few months, when reviewing and editing articles, I have been checking the statistical reporting against the book’s guidelines. This has added considerable value to my editing; I regularly receive a “thank you” from authors for helping them to improve the credibility of their work.

Don’t be afraid – the book doesn’t go into the mathematics, but it does go into the logic of using various statistical tests. It clearly shows, with many examples, how to choose appropriate statistical methods, how to report them and how to avoid all-too-common pitfalls. Lang and Secic present many guidelines, warnings of pitfalls, and

examples of clear language with appropriate wording. The book also contains two chapters devoted to presenting data and statistics in tables and figures.

Although not specifically mentioned by the authors, the clear message is “keep it scientific”. Bias plagues the biomedical literature in many forms, and Lang and Secic show how it can arise, how to avoid it, and especially how to recognize it. Biased reporting can drastically influence unwary readers. In the example below, the authors show two “statistically correct” ways of reporting the results of a study on the efficacy of a drug. Each method, however, leaves the unwary reader with a different impression of the drug’s efficacy:

In the Helsinki study of hypercholesterolemic men, after 5 years, 84 of 2030 patients on placebo (4.1%) had heart attacks, whereas only 56 of 2051 men treated with gemfibrozil (2.7%) had heart attacks ($P < 0.02$), for an absolute risk reduction of 1.4% ($4.1\% - 2.7\% = 1.4\%$).

In the Helsinki study of hypercholesterolemic men, after 5 years, 4.1% of the men treated with placebo had heart attacks, whereas only 2.7% of the men treated with gemfibrozil had heart attacks. The difference, 1.4%, represents a 34% relative risk reduction in the incidence of heart attack in the gemfibrozil-treated group ($1.4\%/4.1\% = 34\%$).

How to Report Statistics in Medicine is not a statistics book, and it will leave questions about the details of statistical methods unanswered. It does, however, fill a gap that is not addressed by most statistics books – responsibly choosing and reporting statistics. Its 488 clearly written pages contain 21 chapters, 5 appendices, a summary of statistical terms, extensive lists of references, and a bibliography. It is a thick pill to swallow and, indeed, I have spent several months “chewing it bit-by-bit” – with much satisfaction. I recommend it to anyone who does not want to remain statistically naive.

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