More on Causal Inference Studies
Lederer, David J.; Bell, Scott C.; Smyth, Alan R.; Chalmers, James

Published in:
Annals of the American Thoracic Society

DOI:
10.1513/AnnalsATS.201901-070LE

Publication date:
2019

Document Version
Peer reviewed version

Link to publication in Discovery Research Portal

Citation for published version (APA):

General rights
Copyright and moral rights for the publications made accessible in Discovery Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from Discovery Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain.
- You may freely distribute the URL identifying the publication in the public portal.

Take down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.
More on Causal Inference Studies

David J. Lederer, MD, MS1,2 (ORCID 0000-0001-5258-0228), Scott C Bell, MBBS, MD, FRACP MS3,4 (ORCID 0000-0001-8651-7139), Alan R Smyth, MD5,6, James D Chalmers, MD, PhD7,8

1Departments of Medicine and Epidemiology, Columbia University Irving Medical Center, New York, New York, United States; 2Editor-in-Chief, Annals of the American Thoracic Society*; 3Department of Thoracic Medicine, The Prince Charles Hospital, Brisbane, Australia; 4Editor-in-Chief, Journal of Cystic Fibrosis; 5Division of Child Health, Obstetrics & Gynecology, University of Nottingham, Nottingham, England; 6Joint Editor-in-Chief, Thorax; 7University of Dundee. Dundee, Scotland; 8Deputy Chief Editor, European Respiratory Journal

*Disclaimer: Participation complies with American Thoracic Society requirements for recusal from review and decisions for authored works.

Corresponding Author:

David J. Lederer

Columbia University - Division of Pulmonary, Allergy, and Critical Care Medicine

161 Fort Washington Ave Room 3-321A New York New York 10032

United States

DOI: 10.1513/AnnalsATS.201901-070LE
Copyright © 2019 by the American Thoracic Society
The final publication is available at https://doi.org/10.1513/AnnalsATS.201901-070LE
Dear Dr. Karp,

Thank you for highlighting the literature distinguishing etiologic and intervention conceptual approaches to the study of causation. Emulating a clinical trial in the design of observational studies, however, remains a powerful tool to understand causation. We disagree that this recommendation is a “failure.”

In writing for a clinical journal (1), we aimed to maximize comprehension at the expense of specificity on a few occasions. For example, we chose to use the term “casual association” to convey the idea that the associations we are interested in are causal in nature – that a causal model must underlie one’s thinking. Although not in common usage, authors may wish to use this term to describe the purpose of their study. We agree that it should not be used to justify claims of causality. We also used the word “confounding” to describe the effect of conditioning on a collider. While not technically accurate, we conveyed the correct message.

The confidence interval is a measure of the precision of an estimate or measure. Imprecision is a reasonable term when confidence intervals are large. Confidence intervals that include the null value too often lead to claims of “no association,” even when they contain clinically or biologically meaningful effect sizes. This is particularly true when the point estimate is meaningfully large. We encourage authors to thoughtfully interpret effect estimates and confidence intervals rather than adhering to an alpha “litmus test” of 0.05.

A few of the points made in the letter suggest we are implying something we are not. We do not state that a single study can prove causality, nor that confidence intervals exclude effects outside of their boundaries, nor that causal factors should be ignored in prediction models. Indeed, an important point of the paper was to instruct authors not to read things into
their data that aren’t there. Equally, we encourage readers not to read things into our recommendations that weren’t there.

On behalf of the writing committee,

David J Lederer, MD, MS
Scott C Bell, MBBS, MD, FRACP
Alan R Smyth, MD
James D Chalmers, MD, PhD
Reference