Correction methods for measurement error in epidemiologic research

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Stellingen

behorende bij het proefschrift

CORRECTION METHODS FOR MEASUREMENT ERROR IN EPIDEMIOLOGIC RESEARCH

1. In epidemiologic research, it is commonly assumed (often implicitly) that all variables are measured without error; an assumption that is often not justified (this thesis).
2. Actions to improve the overall quality of measurement in epidemiologic analyses are likely to have a larger effect on the validity of epidemiologic studies than widespread application of measurement error correction methods (this thesis).
3. Measurement error can affect estimated exposure-outcome associations in complex ways that may not easily be anticipated and need to be evaluated from one setting to another (this thesis).
4. If treatment is allocated based on an error-prone confounding variable, the estimated treatment effect will not be biased; provided the error-prone confounding variable is adequately adjusted for (and there are no other sources of bias) (this thesis).
5. Frequently used heuristics about measurement error structure (e.g. random error) and impact (e.g. bias towards null) are often wrong and encourage a tolerant attitude towards neglecting measurement error in epidemiological research (after van Smeden et al., International Journal of Epidemiology, 2020;49(1):338-347).
6. Assumptions of statistical models are self-destructive in their honesty. The more explicit the assumption, the more criticism it invites, for it tends to trigger a richer space of alternative scenarios in which the assumption may fail (after Pearl and Bareinboim, Statistical Science, 2014;29(4):579-595).
7. The definition of what is meant by e.g. wellbeing and the way in which it is measured are intimately intertwined (after Hand, Measurement: A very short introduction, 2016, Oxford University Press).
8. We see the world through the spectacles of measurement (after Hand, Measurement: A very short introduction, 2016, Oxford University Press).
9. By working reproducibly and open, we can develop validated research work, avoid misinformation that can limit replicability of our work and publish accurate research outputs (after The Turing Way Community, The Turing Way: A handbook for reproducible, ethical and collaborative research, 2022).