

Titre de l'article

Estimating controlled direct effects in the presence of intermediate confounding of the mediator-outcome relationship: Comparison of five different methods".

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Résumé

In mediation analysis between an exposure X and an outcome Y, estimation of the direct effect of X on Y by usual regression after adjustment for the mediator M may be biased if Z is a confounder between M and Y, and is also affected by X. Alternative methods have been described to avoid such a bias: inverse probability of treatment weighting with and without weight truncation, the sequential g-estimator and g-computation. Our aim was to compare the usual linear regression adjusted for M to these methods when estimating the controlled direct effect between X and Y in the causal structure and to explore the size of the potential bias. Estimations were computed in several simulated data sets as well as real data. We observed an increased bias of the controlled direct effect estimation using linear regression adjusted for M for larger effects of X on M and larger effects of Z on M. The sequential g-estimator and g-computation gave unbiased estimations with adequate coverage values in every situation studied. With continuous exposure X and mediator M, inverse probability of treatment weighting resulted in some bias and less satisfactory coverage for large effects of X on M and Z on M.

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