

Appendix: Software Resources

DAGs:

<http://www.dagitty.net>

Textor J, van der Zander B, Gilthorpe MK, Liskiewicz M, Ellison GTH.

Robust causal inference using directed acyclic graphs: the R package

'dagitty'. Int J Epidemiol 2016; 45:1887-1894

Propensity score matching in R:

<https://cran.r-project.org/web/packages/MatchIt/vignettes/matchit.pdf>

<http://gking.harvard.edu/matchit/>

Ho DE, Imai K, King G, Stuart EA. Matchit: nonparametric preprocessing for parametric causal inference. J Stat Softw 2011; 42(8):1-28

Propensity score matching in Stata:

Leuven E, Sianesi B. PSMATCH2: Stata module to perform full Mahalanobis and propensity score matching, common support graphing, and covariate imbalance testing. Statistical Software Components S432001 2003; Boston College

Department of Economics, revised 01 Feb 2018. Handle:

RePEc:boc:bocode:s432001. Accessed from

<https://ideas.repec.org/c/boc/bocode/s432001.html>; accessed on 6/29/2020

Calculating E-values for sensitivity to unmeasured confounding:

<https://www.evaluate-calculator.com/>

Mathur MB, Ding P, Riddell CA, VanderWeele TJ. Website and R package for computing E-values. *Epidemiology* 2018; 29(5):e45-e47

Bias:

<http://apps.mrcieu.ac.uk/ascertain/>

Griffith G, Morris TT, Tudball M, Herbert A, Mancano G, Pike L et al. Collider bias undermines our understanding of COVID-19 disease risk and severity [preprint]. *medRxiv* 2020; doi: 10.1101/2020.05.04.20090506

<https://watzilei.com/shiny/collider/>

Luque-Fernandez MA, Schomaker M, Redondo-Sanchez D, Jose Sanchez Perez M, Vaidya A, Schnitzer ME. Educational Note: Paradoxical collider effect in the analysis of non-communicable disease epidemiological data: a reproducible illustration and web application. *Int J Epidemiol* 2019; 48(2):640-653

<https://selection-bias.herokuapp.com/>

Smith LH, VanderWeele TJ. Bounding bias due to selection. *Epidemiology* 2019; 30(4):509-516

<https://remlapmot.shinyapps.io/bias-app/>

Groenwold R, Palmer T, Tilling K. Conditioning on a mediator [preprint].

OSF Preprints 2019.

[http://www.research.lancs.ac.uk/portal/en/publications/conditioning-on-a-mediator\(d5cc5286-3df8-46a1-a1f1-3e962bc2ca14\).html](http://www.research.lancs.ac.uk/portal/en/publications/conditioning-on-a-mediator(d5cc5286-3df8-46a1-a1f1-3e962bc2ca14).html). Accessed 6/29/2020

Marginal structural modeling in R, SAS, and Stata:

<https://www.hsph.harvard.edu/miguel-hernan/causal-inference-book/>

Hernán MA, Robins JM. *Causal Inference: What If*. Boca Raton: Chapman & Hall/CRC; 2020

Mediation in SAS:

<https://www.sas.com/content/dam/SAS/support/en/sas-global-forum-proceedings/2018/1991-2018.pdf>

Lamm M, Zhang W. Causal mediation analysis with the CAUSALMED procedure. Paper SAS1991-2018.

<https://www.sas.com/content/dam/SAS/support/en/sas-global-forum-proceedings/2018/1991-2018.pdf>. Accessed 6/29/2020

Valente MJ, Rijnhart JJM, Smyth HL, Muniz FB, MacKinnon DP. Causal mediation programs in R, Mplus, SAS, SPSS, and Stata. *Struct Equ Modeling* 2020; ePub; doi: 10.1080/10705511.2020.1777133

Mediation in R:

<https://dspace.mit.edu/handle/1721.1/91154>

Tingley D, Yamamoto T, Hirose K, Keele L, Imai K. mediation: R package for causal mediation analysis. *J Stat Softw* 2014; 59(5):1-38

Valente MJ, Rijnhart JJM, Smyth HL, Muniz FB, MacKinnon DP. Causal mediation programs in R, Mplus, SAS, SPSS, and Stata. *Struct Equ Modeling* 2020; ePub; doi: 10.1080/10705511.2020.1777133

Mediation in Stata:

<https://www.stata-journal.com/sjpdf.html?articlenum=st0243>

Hicks R, Tingley D. Causal mediation analysis. *Stata J* 2011; 11(4):605-619

Valente MJ, Rijnhart JJM, Smyth HL, Muniz FB, MacKinnon DP. Causal mediation programs in R, Mplus, SAS, SPSS, and Stata. *Struct Equ Modeling* 2020; ePub; doi: 10.1080/10705511.2020.1777133