CHAO CHENG

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EDUCATION

Department of Biostatistics, Yale School of Public Health, New Haven, CT 2020 – Present
Ph.D. student in Biostatistics

· Advisors: Donna Spiegelman, Ph.D. and Fan Li, Ph.D.

Department of Mathematical Sciences, Tsinghua University, Beijing 2017 – 2019
Master of Applied Statistics

School of Business and Management, Donghua University, Shanghai 2013 – 2017
Bachelor of Economics in Finance

RESEARCH INTERESTS

Mediation analysis, causal inference, measurement error correction, statistical methods in implementation science, survival analysis

PEER-REVIEWED PUBLICATIONS

Part I. Statistical and Epidemiologic Methodology

1. **Cheng, C**., Spiegelman, D., Li, F. (2023). Mediation analysis in the presence of continuous exposure measurement error. *Statistics in Medicine*.
2. **Cheng, C**., Spiegelman, D., Li, F. (2022). Is the product method more efficient than the difference method for assessing mediation? *American Journal of Epidemiology*, kwac144.
3. **Cheng, C.**, Li, F., Thomas, L., Li, F. (2022). Addressing extreme propensity scores in estimating counterfactual survival functions via the overlap weights. *American Journal of Epidemiology*, kwac043.
4. Sloan, A., **Cheng, C**., Rosner, B., Ziegler, G., Smith-Warner, A., Wang, M. (2021). A repeated measures approach to pooled and calibrated biomarker data. *Biometrics*.
5. **Cheng, C.**, Spiegelman, D., Li, F. (2021). Estimating the natural indirect effect and the mediation proportion via the product method. *BMC Medical Research Methodology*, 21(1), 1-20.
6. **Cheng, C.**, Spiegelman, D., Wang, Z., Wang, M. (2021). Testing gene–environment interactions in the presence of confounders and mismeasured environmental exposures. *G3: Genes, Genomes, Genetics*, 11(10), jkab236.
7. **Cheng, C.**, Sloan, A., Wang, M. (2021). Statistical methods for analysis of combined biomarker data from multiple nested case–control studies. *Statistical Methods in Medical Research*, 30(8), 1944-1959.
8. **Cheng, C.**, Wang, R., Zhang, H. (2021). Surrogate residuals for discrete choice models. *Journal of Computational and Graphical Statistics*, 30(1), 67-77.
9. **Cheng, C.**, Wang, M. (2020). Statistical methods for analysis of combined categorical biomarker data from multiple studies. *The Annals of Applied Statistics*, 14(3), 1146.
10. Wang, M., Chen, K., Luo, Q., **Cheng, C**., (2018). Multi-step inflation prediction with functional coefficient autoregressive model. *Sustainability*, 10(6), p.1691.

Part II. Applications

1. Mattei, J., Díaz-Alvarez, C.B., Alfonso, C., O'Neill, H.J., Ríos-Bedoya, C.F., Malik, V.S., Godoy-Vitorino, F., **Cheng, C.**, Spiegelman, D., Willett, W.C. and Hu, F.B., (2022). Design and Implementation of a Culturally-Tailored Randomized Pilot Trial: Puerto Rican Optimized Mediterranean-like Diet (PROMED). *Current Developments in Nutrition*.

2. Regan, M., **Cheng, C.**, Mboggo, E., Larson, E., Lema, I.A., Magesa, L., Machumi, L., Ulenga, N., Sando, D., Mwanyika-Sando, M. and Barnhart, D.A. (2022). The impact of a community health worker intervention on uptake of antenatal care: a cluster-randomized pragmatic trial in Dar es Salaam, *Health Policy and Planning*.

3. Shen, M., **Cheng, C**., Huang, C., (2017). The application of non-manual data in targeted poverty alleviation. *The World of Survey and Research*, 12, 43-48. (written in Chinese)

MANUSCRIPTS IN PROGRESS

1 **Cheng, C**., Hu, L., Li, F. (2022). Doubly robust estimation and sensitivity analysis for marginal structural quantile models. arXiv:2210.04100

2 Mediation analysis with a failure time outcome in the presence of exposure measurement error. (to be submitted, joint work with Drs. Donna Spiegelman and Fan Li)

3 Multiply robust estimation of causal effects with noncompliance and time-to-event outcomes: Applications to the ADAPTABLE randomized trial. (to be submitted, joint work with Yueqi Guo, Bo Liu, Lisa Wruck, Fan Li, and Fan Li)

4 A semiparametric framework for causal mediation analysis with treatment noncompliance (in preparation, joint work with Fan Li)

WORKING PAPERS

1 Forecasting realized volatility in presence of structure break: A new forecast combination approach. (a technical report revised from my undergraduate thesis, advised by Dr. Man Wang; written in English)

STATISTICAL SOFTWARE

`mediateP`: R package to calculate the point and interval estimates of the natural indirect effect, total effect, and mediation proportion, based on the product approach (on CRAN)

AWARDS & HONORS

JSM Student Paper Award, Biometrics Section, American Statistical Association	2023
Student Paper Travel Award, International Conference on Health Policy Statistics	2023
Distinguished Student Paper Award, International Biometric Society (ENAR)	2023
Conference Travel Fellowship Award, Yale Graduate Student Assembly	2022–2023
Honorable Mention of Thomas Ten Have Award, American Causal Inference Conference	2022
JSM Student Paper Award, Statistics in Epidemiology Section, American Statistical Association	2022
Graduated First Class Honor, Tsinghua University	2019
Excellent Master's Thesis Award, Tsinghua University	2019
Graduated First Class Honor, Donghua University	2017
Excellent Undergraduate Thesis Award, Donghua University	2017

PRESENTATIONS & TALKS

1. "Doubly robust estimation and sensitivity analysis for marginal structural quantile models", ENAR 2023 Spring Meeting, Nashville, TN, March 2023.

2. "Doubly robust estimation and sensitivity analysis for marginal structural quantile models", International Conference on Health Policy Statistics, Scottsdale, AZ, January 2023.
3. "Mediation analysis in the presence of exposure measurement error", Joint statistical meetings, Washington, DC, August 2022.
4. "Doubly robust estimation and sensitivity analysis for marginal structural quantile models" (Poster Presentation), American Causal Inference Conference, Berkeley, CA, May 2022.
5. "Doubly robust estimation and sensitivity analysis for marginal structural quantile models", The 35th New England Statistics Symposium, Storrs, CT, May 2022.
6. "Mediation analysis in the presence of exposure measurement error", CMIPS/YCAS working group seminar, Yale University, New Haven, CT, March 2022.
7. "Estimating natural indirect effect and mediation proportion via the product method", CMIPS seminar, Yale University, New Haven, CT, October 2020.

PEER REVIEW ACTIVITIES FOR JOURNALS

Biometrics, Statistics in Medicine, BMC Medical Research Methodology, American Journal of Epidemiology