The Department of Educational Psychology's Research Methods, Measurement, & Evaluation (RMME) program and the Department of Statistics at the University of Connecticut present:

Causal Inference Under Interference in Dynamic Therapy Group Studies

Dr. Susan Paddock, NORC University of Chicago
Friday, 4/16/2021, 12pm ET
https://uconn-cmr.webex.com/uconn-cmr/j.php?MTID=mdbdf7c1935ee0cdcc88e0a90573ea2fc

Group therapy is a common treatment modality for behavioral health conditions. Patients often enter and exit groups on an ongoing basis, leading to dynamic therapy groups. Examining the effect of high versus low session attendance on patient outcomes is of interest. However, there are several challenges to identifying causal effects in this setting, including the lack of randomization, interference among patients, and the interrelatedness of patient participation. Dynamic therapy groups motivate a unique causal inference scenario, as the treatment statuses are completely defined by the patient attendance record for the therapy session, which is also the structure inducing interference. We adopt the Rubin Causal Model framework to define the causal effect of high versus low session attendance of group therapy at both the individual patient and peer levels. We propose a strategy to identify individual, peer, and total effects of high attendance versus low attendance on patient outcomes by the prognostic score stratification. We examine performance of our approach via simulation, apply it to data from a group cognitive behavioral therapy trial for reducing depressive symptoms among patients in a substance use disorders treatment setting, and discuss the strengths and limitations of this approach.

Dr. Susan Paddock is the chief statistician and executive vice president at NORC at the University of Chicago. She is responsible for the methods of design and analysis used in NORC proposals and projects and for the NORC corporate research and development enterprise. Her research includes developing innovative statistical methods, with a focus on Bayesian methods, multilevel modeling, nonparametric Bayes, longitudinal data analysis, and missing data techniques. Dr. Paddock is the principal investigator of a project sponsored by the National Institute on Alcohol Abuse and Alcoholism to develop methods for analyzing data arising from studies of group therapy-based interventions. She was the principal investigator of a project sponsored by the Agency for Healthcare Research and Quality to improve the science of public reporting of health care provider performance. She co-led a project to conduct analyses related to the Medicare Advantage Plan Ratings for Quality Bonus Payments. Her other substantive research interests include health services research, substance abuse treatment, quality of health care, and veterans' health care. Prior to joining NORC, she spent 20 years as a senior statistician with RAND Corporation. From 2008 to 2013, she led the RAND Statistics Group. She has served on editorial boards for the Annals of Applied Statistics, Journal of the American Statistical Association, and Medical Care, and has served on committees for the American Statistical Association (ASA) and the National Academies of Sciences, Engineering, and Medicine. She is a fellow of the ASA and was the recipient of the 2013 Mid-career Award of the Health Policy Statistics Section of the ASA. She received her PhD in statistics from Duke University and her BA in mathematics and biostatistics from the University of Minnesota.

ONLINE INTERDISCIPLINARY SEMINARS ON STATISTICAL METHODOLOGY FOR SOCIAL AND BEHAVIORAL RESEARCH: Support for this seminar comes from Department of Educational Psychology's Research Methods, Measurement, & Evaluation (RMME) program and the Department of Statistics at the University of Connecticut (UCONN), the Statistical and Applied Mathematical Sciences Institute (SAMSI), and the New England Statistical Society (NESS). This seminar aims to promote connection between the statistics and social/behavioral science communities and encourage interdisciplinary research across faculty and students. For information about previous and upcoming speakers, please visit https://stat.uconn.edu/online-seminars/ or https://rmme.education.uconn.edu/.

For announcements and WebEx live streaming links, please contact Tracy Burke (tracy.burke@uconn.edu).

For questions related to the seminars, please feel free to contact the session organizers, Prof. Xiaojing Wang (xiaojing.wang@uconn.edu) and/or Prof. Betsy McCoach (betsy.mccoach@uconn.edu).

Additional Session
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