



McGill

Department of
Epidemiology, Biostatistics
and Occupational Health

Biostatistics Seminars
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Confounding Adjustment for Multi-Level Treatment Comparisons under Lack of Positivity and Unknown Model Specification

Wednesday, February 12, 2020

3:30 pm – 4:30 pm – Purvis Hall, 1020 Pine Ave. West, Room 24

All are Welcome

Abstract:

Various adjustment methods can be employed to correct confounding bias in the context of multi-level treatments (>2). However, analytical challenges, such as positivity violations and incorrect model specification, may affect their ability to yield unbiased estimates. The overlap weights, augmented overlap weights, bias-corrected matching and targeted maximum likelihood are methods that are theoretically expected to be able to address these challenges. Employing these methods together with machine learning algorithms is particularly promising. We propose a simple variance estimator for the overlap weight estimators that can naturally be combined with machine learning approaches. We investigate and compare the empirical performance of these methods as well as those of simpler alternatives (standardization, inverse probability weighting and matching) in a simulation study.

Bio:

Dr. Denis Talbot is an associate professor in biostatistics at Université Laval. His current research interests concern causal inference methods for observational data, including model selection, longitudinal data analysis, electronic health records analysis and applications to cardiovascular health research. <https://sites.google.com/site/denistalbotfmed1/>