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Department of
Epidemiology, Biostatistics
and Occupational Health

Biostatistics Seminars

Fall 2023



Aya Mitani, PhD, MPH

Assistant Professor, Division of Biostatistics
Dalla Lana School of Public Health
University of Toronto

Analysis of complex multilevel dental data with informative tooth loss

Wednesday, November 1, 2023

3:30 pm – 4:30 pm - Room 1140

Hybrid Seminar (Dr. Mitani will present virtually from Toronto)

Zoom Link:

<https://mcgill.zoom.us/j/83361845814?pwd=anhrOHRXcWdMWG1uM2xSazFpQk1RQT09>

Abstract:

Almost half of the global adult population suffers from gum disease, which, if untreated, can lead to tooth loss. When the unit of analysis is the tooth, we need to account for the baseline number of teeth and the rate of tooth loss over time when analyzing the marginal effect of health risk factors on changing gum disease outcomes over time. I will present two recent works on methods to model complex longitudinal dental data subject to informative cluster size. One incorporates inverse probability censoring weights into cluster weighted generalized estimating equations and the other incorporates cluster weights into a multistate model. The methods are applied study the effects of metabolic syndrome on the progression of gum disease using data from the Veterans Affairs Dental Longitudinal Study.

Bio:

Aya is Assistant Professor in the Division of Biostatistics at the Dalla Lana School of Public Health, University of Toronto. Her research focuses on developing statistical methods to analyze correlated data and to remove biases that emerge from informative cluster size, study design, missing data, or misclassification in multilevel observational studies and complex surveys. She has collaborated with researchers from oncology, nephrology, anesthesiology, and oral health. Aya's research is funded by the Connaught Fund, National Science and Engineering Council of Canada, Canadian Institutes of Health Research, and National Institutes of Health.

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