Investigator Spotlight

James L. Rudolph Career Development Award

NIA IMPACT COLLABORATORY
TRANSFORMING DEMENTIA CARE

Kendra Plourde, PhD
Assistant Professor of Biostatistics
Yale School of Public Health

"This award will provide training and mentorship in the theory and statistical considerations of dementia care dyadic trials, laying the foundation for an independent research program dedicated to improving the design, analysis, and statistical rigor of embedded pragmatic clinical trials for people living with dementia and their care partners."

Dr. Plourde is a biostatistician and an assistant professor of biostatistics at the Yale School of Public Health, a faculty member of the Yale Center for Analytical Sciences, and a collaborator with the Yale Program on Aging. Before joining the Yale faculty, she was a postdoctoral associate with the IMPACT Collaboratory in the Design and Statistics Core. Her methodological research focuses on the design and analysis of pragmatic clinical trials in aging and dementia, with particular emphasis on stepped wedge cluster randomized trial (SW-CRT) designs that are increasingly used in pragmatic studies. Through this Career Development Award, she seeks to address design-stage challenges arising from complex correlation structures, including power and sample size determination for cluster randomized trials with multiple levels of clustering and multivariate outcomes.

Designing Cluster ePCTs in Dementia Care Dyads to Assess Treatment Heterogeneity

Pragmatic trials of dementia care dyads often use cluster randomization, creating multiple sources of correlation that complicate study design and analysis. Interest in designing cluster trials to detect heterogeneity of treatment effects is increasing, yet existing methods do not accommodate dyadic outcomes. This project will develop methods and practical tools to design cluster randomized trials involving dementia care dyads that can detect meaningful subgroup-specific benefits even when an overall average treatment effect is not observed. This Career Development Award will provide Dr. Plourde with training and mentorship in dyadic trial theory and analysis, as well as in methods for designing trials to detect heterogeneity of treatment effects, supporting her development into an independent methodological investigator advancing the design and analysis of dementia care dyad trials. This training will support the following Specific Aims: (1) To develop new methods for designing cluster randomized ePCTs with dementia care dyads to detect treatment effect heterogeneity, and (2) To develop new methods for designing stepped wedge ePCTs with dementia care dyads to detect treatment effect heterogeneity. The methods developed in this award will strengthen the ability of dementia care ePCTs to detect meaningful treatment effects within specific dyad subgroups, even when an overall average treatment effect is not observed. This work will advance statistical approaches for designing pragmatic trials of dementia care interventions involving dyads.