Society for Prevention Research
33rd Annual Meeting

Post-Conference Workshop II: Using the NIH Research Methods Resources Website

Date: Thursday, October 23, 2025

Time: 12:00 pm – 4:00 pm Eastern

Organizer & Presenter: David M. Murray, Ph.D.
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Presenter: Jonathan C. Moyer, Ph.D.
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Purpose: To provide training and guided experience in state-of-the-science methods to evaluate behavioral interventions in biomedical research using the resources available on the NIH Research Methods Resources website (hYps://researchmethodsresources.nih.gov/). These resources focus on clinical trials that assign groups or clusters to study conditions or that deliver interventions in a group format (in person or virtual) and/or via shared intervention agents (e.g., therapist, trainer, facilitator, clinician). Both delivery methods are common for behavioral interventions that are widely used in biomedical research.

This workshop will provide an overview of each of the four main research designs presented on the RMR website. The first design is the parallel group- or cluster-randomized trial in which groups or clusters are randomized to study conditions and members of those groups or clusters are measured to assess the impact of the intervention. The second design is the stepped wedge group- or cluster-randomized trial in which groups or clusters begin the study in the control condition, are randomly assigned to sequences, and cross-over to the intervention condition at pre-determined time points in a sequential, staggered fashion until all groups or clusters receive the intervention. The third design is the individually randomized group treatment trial in which individuals are randomized to study conditions but receive interventions in a group format and/or through shared intervention agents. The fourth design is the group or cluster regression discontinuity design in which a threshold or cutoff value of an assignment score variable measured at the group or cluster level is used to

assign groups or clusters to the intervention or control conditions. The presentation for each method will include an introduction to the method and examples of how it is applied, noting recent advances in the literature. For each design, we will demonstrate the sample-size calculator available on the RMR website. Participants will have an opportunity to work with the sample-size calculators using their own laptop, with coaching available from the instructors.

Learning Objectives: Upon completion, participants will be able to distinguish the features, advantages and disadvantages, and appropriate uses for key variations of three designs commonly used to evaluate behavioral interventions: the parallel group- or cluster-randomized trial (GRT), the stepped-wedge group- or cluster-randomized trial (SWGRT), and the individually randomized group-treatment (IRGT) trial. Participants will also be able to use the sample-size calculators available for each design on the RMR website to perform sample size calculations for a real or hypothetical study to guide planning for a new study.

Target Audience: Advanced graduate students, fellows, and faculty at all levels who are interested in evaluating behavioral interventions to improve health outcomes. Experience with analytic methods using mixed models is assumed.

Materials: Participants will receive a copy of the slides and handouts. Participants should bring their own laptop to access the materials on the RMR website.

Outline:

Randomized Designs for Behavioral Interventions - Murray
- Randomized Controlled Trials (RCTs)
- Parallel Group- or Cluster-Randomized Trials (GRTs)
- Stepped-Wedge Group- or Cluster-Randomized Trials (SWGRTs)
- Individually Randomized Group-Treatment (IRGT) Trials

Analytic Methods for these Designs - Moyer
- Parallel Group- or Cluster-Randomized Trials (GRTs)
- Stepped-Wedge Group- or Cluster-Randomized Trials (SWGRTs)
- Individually Randomized Group-Treatment (IRGT) Trials

Sample Size and Power for these Designs - Moyer
- Parallel Group- or Cluster-Randomized Trials (GRTs)
- Stepped-Wedge Group- or Cluster-Randomized Trials (SWGRTs)
- Individually Randomized Group-Treatment (IRGT) Trials

Alternative Designs - Murray
- Multiple Baseline Designs
- Time-series Designs
- Quasi-experimental Designs
- Regression Discontinuity
- Designs

Using the Sample Size Calculators – Moyer and Murray – Hands-on
- Parallel Group- or Cluster-Randomized Trials (GRTs)
- Stepped-Wedge Group- or Cluster-Randomized Trials (SWGRTs)
- Individually Randomized Group-Treatment (IRGT) Trials
- Group-Based Regression Discontinuity Designs (GRDD)