Planned Missing Designs: A methodological approach to balancing the time, costs, and need for data in school-wide assessments

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Road Map

1. What is a planned missing design?
   a.) Why use it?
2. Example of a project using a planned missing design
Researcher Difficulties with Collecting School-wide Data

- Balancing needs
  - Schools:
    - Limited time
    - Limited resources
      - Space
      - Buy-in from school staff
  - Researchers:
    - Need for data
      - Substantial amounts of data
Planned Missing Designs

• Methodological approach to deal with shortening data collection

• Participants are randomly assigned to conditions in which they do not answer to all items, all measures, and/or all measurement occasions (Little & Rhemtulla, 2013)

• Multiple planned missing designs (Graham et. al., 2006)
  • 3-Form Design
  • Two-Method Measurement
  • Multiple Matrix Sampling
  • Developmental Time-Lag
  • Wave-to Age-based Designs
  • Monotonic Sample Reduction
  • Growth-Curve Planned Missing
## 3-Form Design

<table>
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<tr>
<th>Form</th>
<th>Block X</th>
<th>Block A</th>
<th>Block B</th>
<th>Block C</th>
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Planned Missing Designs: Considerations

• Shorter batteries of questionnaires

• Carefully plan form design and data collection

• Participant fatigue
Project PRIDE

• Create a TDV intervention for 9th-12th graders using the CBPR approach
• Increase Positive Youth Development in PRIDE members
Measurement

**TDV and its Covariates**

- Conflict in Adolescent Dating Relationship Inventory (CADRI) (Wolfe et al., 2001)
- The Attitudes toward Dating Violence Scale (Foshee, Fothergill, & Stuart, 1992)
- The Cyber Teen Dating Violence Scale (Zweig, Dank, Lachman, & Yahner, 2013)
- Family Experience Scale (FES) (Moos & Moos, 1994)
- The Gender Stereotype Scale (Foshee et al., 1998)

**School Climate**

- Community & Youth Collaborative Institute School Experience Survey (CAYCI) (Anderson-Butcher, Amorose, Jachini, & Ball, 2013)
  - Externalizing Behaviors
  - School Connectedness
  - Safety
  - Alcohol, Tobacco, and Drug use
Measurement Considerations

• Research needs/desires
  • DATA, DATA, DATA
  • Opportunity for a large dataset and future publications

• School needs
  • How does TDV impact their students and school
  • Time constraints = 30 minutes
    • Includes travel time, student login, technology difficulties
# 3-Form Design: Project PRIDE

<table>
<thead>
<tr>
<th>Block X (66)</th>
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<th>Block C (38)</th>
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<tbody>
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<td>Drug and Alcohol Use (5)</td>
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<td>Family Experience Scale (9)</td>
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<td>RSES (10)</td>
<td>Diversity (5)</td>
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</table>
Planned Missing Designs and Data Analysis

• Planning to have missing data complicates data analysis

• What do you do with all the “missing data”?
  • Impute it using multiple imputation
  • Data missing due to this design are missing completely at random and therefore do not skew results

• The purpose of planning missing designs is to shorten batteries without sacrificing data
Many Thanks to

- PRIDE Team
- Miami University MUSCRAT Lab
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- Miami University Center for School-Based Mental Health
- Butler County Sheriff’s Office