Method and Result Sections

Quantitative Research

2019-20 GROW Workshop Series
The Methods Section
Seven Moves

- Overview
- Research aims, questions, or hypotheses
- Participants
- Location
- Procedure
- Measures
- Data analysis
Overview

QUANTITATIVE RESEARCH

Correlational Research

Survey Research

Experimental Research
Research aims, questions, or hypotheses

- **Research Question**: Clear, Focused, Concise, and Defendable
- **Hypothesis**: What predictions are you making about the subject of your study? This is the foundation of your work. Hypotheses are specific predictions about the nature and direction of the relationship between two or more variables.
- **Specific Aims**: What do you hope to achieve from your study? How is your research going to extend the current knowledge base of the subject matter?
Participants

• Characteristics
• Inclusion and exclusion criteria
• Sampling procedures
  • Sampling method
  • Voluntary nature
  • Participant rate for study
• Sample size, power, & precision
• IRB, professional ethics, safety standards
Location

• Description of the setting and location where data was collected
• Include dates of data collection(s)
• May address the “why” of chosen location(s)
Procedure

- Describe methods used to collect the data (step-by-step)
- Mention any agreements made
- Describe any incentives offered
- Informed consent processes
• Define all primary and secondary constructs

• Provide information on the measures used to assess your latent variables
  • Name and purpose
  • # of items and scoring method
  • Interpretation
  • Psychometric properties (relevant to your study)

• How many interactions or observations and with/by whom?
Data Analysis

• Describe planned analyses
  • Preliminary analyses
  • Primary analyses

• Masking or manipulations performed with participants

• Include analyses used for each research question and/or hypothesis you tested
The Results Section

Questions or Hypotheses -> Methods -> Results -> Discussion

Our Focus Today
• Section introduction* (*for dissertations)

• Participant flow chart:
  • Describes the progression of participants through each stage of the process
  • Includes those individuals who continue and discontinue participation
  • Now a required part of research writing in most professional trade journals
Sample Flow Chart

3357 patients with type 2 diabetes

374 patients excluded because of the inability to complete a questionnaire: (n = 22), severe mental illness (n = 117), abroad (n = 20), unwillingness to attend the practice regularly (n = 64), nursing home (n = 47), advanced age (n = 65), or a limited life expectancy (n = 39)

2286 eligible patients in primary care

697 eligible patients in secondary care

646 refused

295 refused

1640 patients included in primary care

402 patients included in secondary care
Results of Statistical and Data Analyses

- **Preliminary Analyses**
  - Missing data
  - Causes of missing data
  - Corrective actions for missing data
  - Outliers
  - Corrective actions for outliers

- **Model Assumption Testing**
  - What you found
  - Violations? (and what they mean)
  - Corrective actions taken (if any)

- **Primary Analyses**
  - Primary analyses
  - Secondary analyses
  - Exploratory analyses

- **Inferential statistics**
  - NHST (including $p$ values)
  - Test statistic and parameters ($df$, MS error, and MS effect)
  - Measures of effect size
  - Confidence intervals
Tips for Writing Effective Results Sections

• Write in the first person and use the past tense
• Follow an organized and logical order
• Summarize your results
• Ensure your results justify your claims
• Include all relevant findings (unbiased reporting)
• Refrain from interpreting your results
• Include tables and figures
• Use previous researchers’ work as a template
Check with Your Advisor/Chair

Every discipline is slightly different and doctoral committees may have specific recommendations