Methodological Considerations in the Real-Time Monitoring of Suicidal Thoughts and Behaviors

Randy P. Auerbach, PhD, ABPP
Columbia University
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Design Considerations

- **Sample**
  - Youth (Children/Adolescents) vs. Adults
  - Acuity

- **Context**
  - Community
  - Outpatient
  - Inpatient hospitalization
  - Inpatient discharge
  - Emergency department discharge
Predicting Suicidal Thoughts and Behaviors Post Emergency Department Discharge

Severity

Jan 26 Jan 28 Jan 30 Feb 1 Feb 3 Feb 5 Feb 7 Feb 9 Feb 11 Feb 13

Depression Symptoms

Sleep Quality

Suicidal Ideation

Interpersonal Stress
Design Considerations

• Length of Study
  – Base rate (suicidal thoughts vs. behaviors)
  – Fatigue
  – Acceptable missingness

• Sampling Rate
  – Daily monitoring
  – EMA bursts

• Item Selection
  – Daily vs. Intensive

• Delivery System
  – Personal Smartphone vs. Study Smartphone
  – App vs. Text Messages
Missingness

• Expected vs. Unexpected Missingness
  – Non-response
  – Technological misfires
  – Clinically meaningful

• Compliance: The Good, Bad, and Ugly
  – STB studies: ~40-80% (e.g., Ammerman et al., 2022)
  – Optimizing strategies

• Imputation
  – Acceptable practice, but there are always implications
  – Approach contingent on method of assessment
Mobile Assessment for the Prediction of Suicide

- **Suicidal Behavior**
- **Daily Mood**

**Graphs:**
- Top graph: Data from Oct 2021 to Mar 2022 showing daily mood and suicidal behavior.
- Bottom graph: Data from Apr 2021 to Sep 2021 showing daily mood.
Psychometric Properties

• Wild West
  – Researchers using wide range of approaches
  – Quasi-adapted from self-report (or not)
  – Idiosyncratic language
  – STB-EMA psychometrics (e.g., Forkmann et al. 2018)

• Suggestions for Best Practices
  – Reliability and validity statistics
  – Include item prompts (e.g., Supplement)
Observational and Interventional Approaches

- Designs
  - Observational: Testing prospective relationships
  - Interventional: Targeting specific changes

- STB Intensive Longitudinal Observational Designs
  - Interventional Components (e.g., “suicidal event”)
  - Safety triggers (e.g., crisis hotlines)
  - 24/7 On-Call

- Intervention
  - Tracking skill acquisition, skill utilization, symptom change
  - Just-in-Time Adaptive Interventions
Summary

• Clearly Defined Question
  – Context
  – Length

• Track Missingness Carefully

• Report Psychometrics

• Team Approach
  – Institute safety practices (and continually refine)
  – Participant tracking
  – Data analytics
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