SMART Designs for Advancing mHealth Adaptive Interventions

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What is an Adaptive Intervention?

Adaptive Interventions are individually tailored sequences of treatment decisions. Adaptive interventions tailor these decisions according to dynamically evolving individual information.

Intervention Design
– **Example Dynamic Individual Information:**
  - Craving, mood, slips/relapse, activity level, pain level, proximity to undesirable location, symptoms

– **Example Decisions:**
  - Encouraging messages, dosage level, reminders, goal suggestions, email to buddy, alarm to health care provider

*Intervention Design*
SMART Design

– Goal: Inform Construction of Adaptive Intervention
  • Experimental, Data-Based

– Pinpoint Critical Decisions that Require Explication
  • Randomize among alternative decision options at these decisions
Example Critical Decisions:

- If individual is in dangerous location, is it effective to send a message?
- Which of several types of messages is most effective?

Randomization

- Randomize between sending a message or not sending a message
- Randomize between types of messages

Experimental Design
Why Randomize at each critical decision?

- Opens black box!
- Disentangle effect of message from why message was provided.

Experimental Design
Questions?

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