

Multi-Step Development of a Dynamic Asthma Adherence Intervention for African American Emerging Adults

Karen MacDonell, PhD

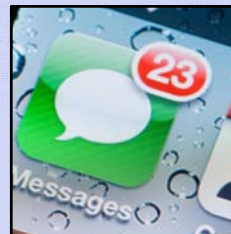
Funded by NHLBI grants 1P30HL101301-01 (Stanton) and
1R34HL107664-01A1 (MacDonell)

Project Rationale

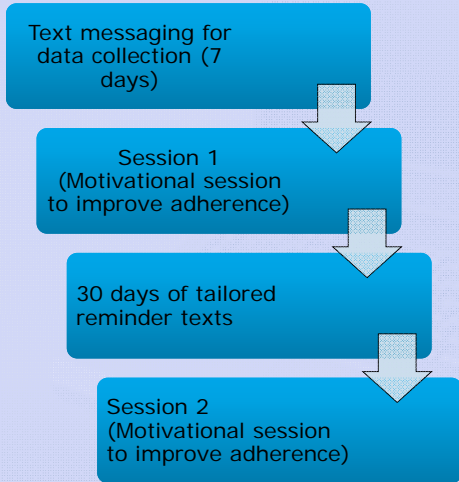


Unmet need for interventions
for African American
emerging adults (ages 18-25)
with chronic illness (Arnett,
2007; Fortuna, et al, 2010; Park et al.,
2006)

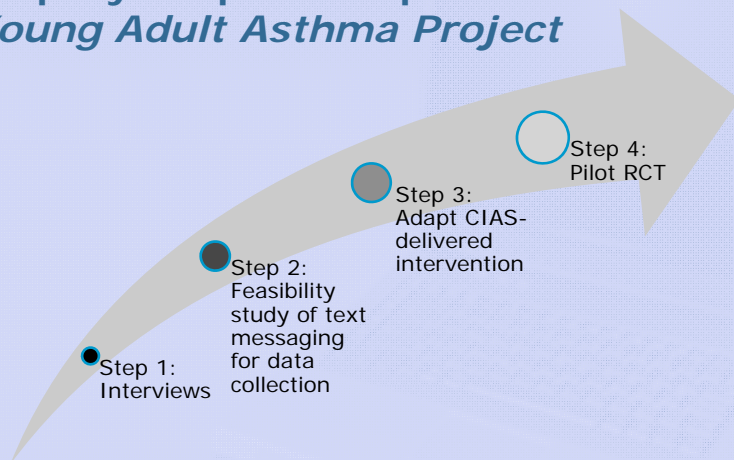
Young adults may be a group
particularly well-suited to a
technology-based
intervention, especially
involving text messaging
(Nielsen Mobile, 2010; Pew Internet,
2012)



Overview of the Detroit Young Adult Asthma Project Intervention



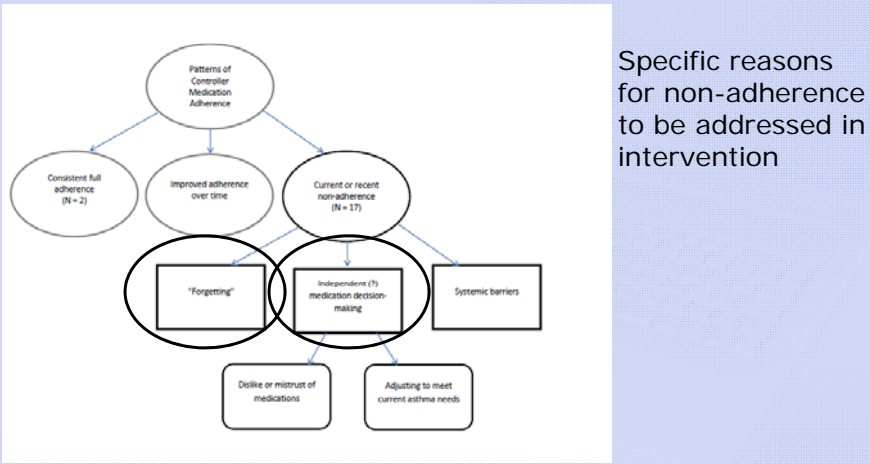
Step-by-Step Development of *Detroit Young Adult Asthma Project*



Series of pilot and feasibility studies to inform and develop a pilot RCT targeting medication adherence in African American emerging adults with asthma.

Step 1: Semi-Structured Interviews (N=21)

Thematic analysis (Braun & Clarke, 2006) focused on adherence to asthma controller medications



Step 2: Feasibility of Ecological Momentary Assessment via Text Messaging (N=16)

Ecological Momentary Assessment (EMA): A set of methodologies characterized by repeated collection of real-time data on participants' momentary states in the natural environment (Stone & Shiffman, 1994)

Informed consent, training on procedures

14 days of text messaging to collect "real time data" on asthma symptom frequency and medication use

Exit interview



Step 2: Types of Text Messages

Event-based

- Participants sent text when take asthma medications or had asthma symptom

Time-based

- System sent an automated message at certain times of the day, every day.

Primary Conclusions

- Texting was not perceived as burdensome, but participants found it difficult to remember to text us without prompting.
- Event-based message rates were very low ($M = .085$ messages sent/day/participant).
- High response rate to time-based texts (79.5%); participants also reported that they preferred to be prompted.



(MacDonell et al., 2012)

EMA and Intervention Tailoring: Discrepancy Reducing Feedback Loops

- ❑ Participants are given the option of receiving feedback on the week of EMA
 - adherence to medication
 - symptom frequency
 - reported barriers to taking medications
- ❑ Behavior is compared to optimal (e.g., full adherence) and perceived (how was your adherence last week?)
- ❑ Uses Carver & Scheier's Control Theory framework:
 - ❑ The basic construct of control theory—the discrepancy-reducing feedback loop—allows person to compare current behavior to the goal and to decrease any discrepancies.

Step 3 : Adaptation and beta-testing

- Used CIAS for measures and intervention.
- Adapted MES-A (Motivational Enhancement System for Adherence)
- Youth advisory group consisting of $N=7$ participants from steps 1 and 2.
 - Content and wording
 - Appropriateness for age group
 - Program attractiveness
- Extensive beta-testing of intervention and control sessions

