Motivational Enhancement System for Adherence (MESA) for Youth Starting Antiretroviral Therapy (ART): Preliminary Findings from a Multi-Site Study

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Disclaimer and Acknowledgement

• The content of this presentation is solely the responsibility of the author(s) and does not necessarily represent the official view of the National Institutes of Health.

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Study Rationale

• Surgeon General (1999): Preventing a problem from occurring is inherently better than having to treat the problem.
• Adherence to antiretroviral therapy (ART) is a significant predictor of viral suppression and is associated with dramatic reductions in mortality and morbidity.
• ART initiation may be a “teachable moment,” one of the transitions or health events that motivate individuals to adopt new health behaviors.
STUDY
MESA

• Built on the principles of Motivational Interviewing (MI) and the Information-Motivation-Behavior (IMB) Skills model

• Brief, two-session individually tailored computerized intervention targeting adherence in youth (ages 16 – 24) recommended to start ART
MESA

- Multi-Site RCT
  - Wayne State University
  - Children’s Hospital Los Angeles
  - Children’s Hospital of Philadelphia
  - Children’s National Medical Center
  - University of Colorado
  - University of Miami
  - Johns Hopkins University
MESA

• Conditions
  – Intervention: MESA
  – Control: SH (Nutrition and Exercise)

• Randomized at Baseline
  – Data Collection and 1st Intervention Session

• Follow-up Visits
  – 1-Month (2nd Intervention Session and Data Collection)
  – 3-, 6-, 9-, and 12-Month (Data Collection)
MESA

- Brief, two-session individually tailored MI-based computerized intervention targeting adherence in youth (ages 16 – 24) recommended to start HIV medication

- Multi-site RCT
  - WSU
  - Children’s Hospital Los Angeles
  - Children’s Hospital of Philadelphia
  - Children’s National Research Center
  - University of Colorado
  - University of Miami
  - Johns Hopkins University
MESA

• Youth are routed through arms of the program based on their ratings of:
  – Importance
  – Confidence
  – Goal Setting

• Youth receive personalized feedback and medication information based on medical information and responses to a medication knowledge questionnaire.
Intervention: MESA

MESA: Session 1 Flowchart

<table>
<thead>
<tr>
<th>Importance of Adherence</th>
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<tbody>
<tr>
<td>Low</td>
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<tr>
<td>High</td>
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<table>
<thead>
<tr>
<th>Pros &amp; Cons</th>
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<tbody>
<tr>
<td>Feedback</td>
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<tr>
<td>(options to select feedback on VL, CD4, Knowledge)</td>
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<table>
<thead>
<tr>
<th>No Feedback</th>
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<table>
<thead>
<tr>
<th>Confidence for Adherence</th>
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<tbody>
<tr>
<td>Low</td>
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<td>High</td>
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<table>
<thead>
<tr>
<th>My Strengths &amp; Abilities</th>
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<tbody>
<tr>
<td>Past Successes</td>
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<tr>
<td>My Personal Strengths</td>
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<table>
<thead>
<tr>
<th>Review Skills &amp; Resources</th>
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<tbody>
<tr>
<td>Available</td>
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<tr>
<td>Developing A Plan</td>
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<table>
<thead>
<tr>
<th>My Abilities &amp; Plan</th>
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</thead>
<tbody>
<tr>
<td>Past Successes</td>
</tr>
<tr>
<td>My Personal Strengths</td>
</tr>
<tr>
<td>How I've Done It</td>
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<tr>
<td>Developing A Plan</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Getting Prepared</th>
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<tbody>
<tr>
<td>(Practice Steps)</td>
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<table>
<thead>
<tr>
<th>My Great Plan (100% Adherence)</th>
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<tbody>
<tr>
<td>Putting More Thought Into It</td>
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<tr>
<td>Getting Prepared (Practice Steps)</td>
</tr>
<tr>
<td>My Wrap Up</td>
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<tr>
<td>Wrapping It Up</td>
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</table>

<table>
<thead>
<tr>
<th>Getting Myself Prepared</th>
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<tbody>
<tr>
<td>(Practice Steps)</td>
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<table>
<thead>
<tr>
<th>Summary</th>
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<tbody>
<tr>
<td>Wrapping Up</td>
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| Thank You!                      |

Department of Family Medicine and Public Health Sciences

Wayne State University School of Medicine
Intervention: MESA

**MESA: Session 2 Flowchart**

1. **Reminder: What Was My Goal**
   - Where I'm At Since Last Time

2. **Met Goal I Set**
   - How I Met My Goal
   - Positive Effects
   - How I Feel Now
   - HIV Medication Feedback
   - Set A New Goal?
   - Continue Current Goal
   - Review Reasons And Supports
   - Work On Next Step
   - Choose Plan
   - Reasons
   - Supports

3. **Partially Met Goal I Set**
   - The Success I DID Have (How Did I Do It? What Were The Positive Effects?)
   - HIV Medication Feedback
   - What Is My Current Goal?
   - Choose Different Goal
   - Review Reasons For Change

4. **No Success Meeting Goal Met**
   - Review Supports That Can Help
   - HIV Medication Feedback
   - What Is My Current Goal?
   - Choose Different Goal
   - Review Plan
   - Reasons
   - Supports

5. **This Time Will Be Different (Review Strengths/Supports)**

6. **Thank You**

7. **Plan For Success This Time**
Control: SH

**SH CONTROL CONDITION: Session 1 Flowchart (Nutrition)**

- **Body Mass Index (BMI)**
  - Feedback
  - No Feedback

- **Feedback: Nutrition (Healthy Eating)**
  - Feedback
  - No Feedback

Developing a Healthy Eating Goal?
  - Yes
    - Choosing a Goal (Menu of Options)
  - No
    - Wait and Think

Feedback: Exercise (Physical Activity)
Control: SH

SH CONTROL CONDITION: Session 1 Flowchart (Exercise)

Feedback:
Exercise (Physical Activity)

Feedback
No Feedback

Developing a Physical Activity Goal?

Yes
- Choosing a Goal (Menu of Options)

No
- Thinking Ahead

Conclusion

Thank You!
SH CONTROL CONDITION: Session 2 Flowchart (Continued)

Where I'm at with my Exercise Goal

- Success With Physical Activity (Complete Success)
- Getting There With Physical Activity (Partial Success)
- My Experience With Physical Activity So Far (No Success)

Exercise Education (Yes)  Exercise Education (No)

Continuing My Current Physical Activity Goal (Same Goal; Complete Success)
The Next Step For Physical Activity (New Goal; Complete Success)
Continuing Physical Activity: Making It Happen (Same Goal; Partial Success)
Choosing A New Physical Activity Plan (New Goal; Partial Success)
Working Toward Success With Physical Activity (Same Goal; No Success)
Working On A New Physical Activity Plan (New Goal, No Success)

Wrapping Up

Thank You!
Hypotheses

• Youth randomized to MESA will show significantly greater adherence than youth randomized to the active control condition (SH)
• Youth randomized to MESA will show a significantly greater increase in HIV knowledge, and motivation and self-efficacy for adherence than youth randomized to the active control condition (SH)
SAMPLE CHARACTERISTICS
Baseline Demographics

Mean Age in Years

- Total (N=125): 20.2
- Intervention (N=66): 19.9
- Control (N=59): 20.5

Abbreviation: AGE (M)
Baseline Demographics

**Gender**
- Male: 84%
- Female: 10%
- Transgender (M to F): 5%
- Transgender (F to M): 1%

**Sexual Identity**
- Heterosexual: 56%
- Bisexual: 23%
- Gay/Lesbian: 20%
- Other: 1%
Baseline Demographics

- N=20 of 125 (16%) identified as Hispanic/Latino
PRELIMINARY FINDINGS
Viral Load (log10 transformed)
HIV Treatment Knowledge

![Graph showing changes in HIV Treatment Knowledge Total (Sum) across different time points for intervention and control groups.](image)
Motivation for ART Adherence

[Graph showing the trend of Motivation for ART Adherence over time with two lines representing intervention and control groups.]
Self-Efficacy for ART Adherence
Summary of Preliminary Findings

• Both groups decreased VL from baseline to 1 month
• Only the MESA group decreased significantly from 1 month to 3 month (post-intervention)
• The MESA group significantly increased in information, motivation, and self-efficacy from baseline to 3 months (post-intervention)
More to Come

• Data from hair samples (6- and 12-months)
• Possible predictors of intervention response: Mental health, substance use, executive functioning, and structural barriers
• Characteristics of participants with missed VL
# Complete vs. Missing 1+ VL

## Baseline Mean/SD Comparison of Complete vs. Missing 1+ Viral Load

<table>
<thead>
<tr>
<th>Measure</th>
<th>Complete</th>
<th>Missing 1+</th>
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<tbody>
<tr>
<td>ASSIST amphetamine sum score, baseline</td>
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<tr>
<td>ASSIST alcohol sum score, baseline</td>
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<td></td>
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<tr>
<td>HIV Treatment Knowledge Total (Sum), baseline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How old are you today?</td>
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<td></td>
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<tr>
<td>BMI</td>
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<tr>
<td>ASSIST cocaine sum score, baseline</td>
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<tr>
<td>ASSIST sedative sum score, baseline</td>
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<tr>
<td>Confidence items (mean), baseline</td>
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<tr>
<td>Importance items (mean), baseline</td>
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<tr>
<td>BSI Somatization, baseline</td>
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<tr>
<td>ASSIST tobacco sum score, baseline</td>
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<tr>
<td>ASSIST opioid sum score, baseline</td>
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<tr>
<td>BSI Anxiety, baseline</td>
<td></td>
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<tr>
<td>BSI Depression, baseline</td>
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<tr>
<td>Viral load, baseline</td>
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<tr>
<td>BSI Global Severity Index, baseline</td>
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<tr>
<td>Mean BSI Global Severity Index, baseline</td>
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<tr>
<td>Temptation total, baseline (sum)</td>
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<tr>
<td>ASSIST marijuana sum score, baseline</td>
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<tr>
<td>Number substances ever used in lifetime (0-10), baseline</td>
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- **Viral loads? None missed**
- **Viral loads? Missed 1+**
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