

TEXT MESSAGING INTERVENTION TO IMPROVE ANTIRETROVIRAL ADHERENCE AMONG HIV-POSITIVE YOUTH (TXTXT)

Good Evidence – Medication Adherence

INTERVENTION DESCRIPTION

Target Population

- HIV-positive adolescents and young adults with poor medication adherence

Goals of Intervention

- Improve adherence to antiretroviral therapy

Brief Description

Text Messaging Intervention to Improve Antiretroviral Adherence among HIV-Positive Youth (TXTXT) is an individual-level intervention for HIV-positive adolescents and young adults with poor medication adherence. The intervention consisted of daily youth-friendly 2-way text messages delivered over 6 months. Text messages were used to remind participants to take their medication and confirm that the medication was taken. Intervention participants tailored and personalized text message reminders to their medication regimen, including the number and time of dosages. Text message reminders and follow-up messages were also personalized to reflect content meaningful to their culture or other sources of identity. To protect confidentiality, intervention participants were encouraged to delete messages after taking medication, use messages that would not reveal their HIV status or mention medication, and received information about phone confidentiality (e.g., passcode protection). Message delivery was timed to coincide with the participant's dosing schedule. Youth-friendly motivational or encouraging follow-up messages were delivered that were based on the youth's responses to taking their medication (e.g., "Well done!" or "You can do it!"). All text messages were sent to participants' personal cell phones.

Theoretical Basis

- Social Cognitive Theory

Intervention Duration

- Daily text message reminders delivered over 6 months

Intervention Setting

- Anywhere participants had access to their cell phone

Deliverer

- Text messages delivered by Remedy Health Media

Delivery Methods

- Text message reminders

INTERVENTION PACKAGE INFORMATION

An intervention package is not available at this time. Please contact Robert Garofalo, Division of Adolescent Medicine, Ann & Robert H. Lurie Children's Hospital of Chicago, 225 E. Chicago Avenue, Box 161, Chicago, Illinois 60611-2991.

Email: rgarofalo@luriechildrens.org for details on intervention materials.

EVALUATION STUDY AND RESULTS

The original evaluation was conducted in Chicago, Illinois between 2010 and 2014.

Key Intervention Effects

- Improved medication adherence

Study Sample

The baseline study sample of 105 youth and young adults living with HIV is characterized by the following:

- 74% black or African American, 13% other race/ethnicity, 8% Hispanic/Latino, 5% white
- 82% male, 17% female, 1% intersex
- Mean age of 24 years
- 87% completed high school education or more
- 66% participants with undetectable viral load (≤ 75 copies/mL)

Recruitment Settings

Community-based health centers and other organizations

Eligibility Criteria

Adolescents and young adults were eligible if they were between the ages of 16 and 29 years, diagnosed with HIV (perinatally, transfusion, or behaviorally acquired), English-speaking, on ART for ≥ 1 month with adherence problems (i.e., missed one dose in the past week or ≥ 4 doses in the last month), had cell phone access, and reported regular use of text messaging.

Assignment Method

Participants (N = 109) were randomly assigned to 1 of 2 groups: text messaging (n = 55) or standard-of-care adherence education (n = 54).

Comparison Group

The standard-of-care comparison included a 20-minute animated tutorial on the importance of medication adherence in HIV disease management.

Relevant Outcomes Measured and Follow-up Time

- Medication adherence (defined as self-reported adherence measured by the 30-day visual analog scale to rate adherence for each medication taken in the last 30 days on a scale of 0 – 100%) was measured at 3 and 6 months post-initiation of intervention.
- Viral load was measured at 3 and 6 months post-initiation of intervention and was assessed as undetectable (≤ 75 copies/mL).

Participant Retention

- Text Messaging Intervention
 - 85% retained at 3 months post-initiation of intervention
 - 85% retained at 6 months post-initiation of intervention
 - 80% retained at 9 months post-initiation of intervention
 - 82% retained at 12 months post-initiation of intervention
- Standard-of-Care Comparison
 - 94% retained at 3 months post-initiation of intervention
 - 91% retained at 6 months post-initiation of intervention
 - 93% retained at 9 months post-initiation of intervention
 - 91% retained at 12 months post-initiation of intervention

Significant Findings

- At 3 months post-initiation of intervention, intervention participants reported a significantly greater increase in medication adherence than comparison participants (Mean difference = 7.38 percentage points, 95% CI = 0.91 – 13.9, $p < 0.05$)
- A significantly greater proportion of intervention participants reported $\geq 90\%$ medication adherence than comparison participants at 3 months post-initiation of intervention (OR = 2.57, 95% CI = 1.01 – 6.54, $p < 0.05$) and from baseline to 6 months post-initiation of intervention (OR = 2.12, 95% CI = 1.01 – 4.45, $p < 0.05$).

Considerations

- This study did not meet best-evidence criteria due to no significant positive intervention effect on viral load.
- This study included a crossover design to assess sustained intervention effects, evaluate intervention effects in the comparison group, and offer the intervention to all participants. After the 6 month study period, initial intervention participants stopped receiving the intervention and comparison participants received the intervention text message reminders. Medication adherence behaviors were measured at 9 and 12 months post-initiation of intervention. There were no significant differences in medication adherence behaviors among the initial intervention participants at 9 and 12 month assessments in comparison to their 6-month assessment, indicating durability of the intervention effect. In addition, there was an observed (but not statistically significant) improvement in adherence in the initial control group at the 9 and 12 month assessments (i.e., 3 and 6 months after the crossover).

Funding

National Institute on Drug Abuse (grant number R34DA031053)

Stanley Manne Children's Research Institute at Ann & Robert H. Lurie Children's Hospital of Chicago

REFERENCES AND CONTACT INFORMATION

Garofalo, R., Kuhns, L. M., Hotton, A., Johnson, A., Muldoon, A., and Rice, D. (2016). [RCT of personalized text message reminders to promote medication adherence among HIV-positive adolescents and young adults](#). *AIDS and Behavior*, 20, 1049-1059.

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