REWARDING ADHERENCE PROGRAM (RAP)

Good Evidence – Medication Adherence

INTERVENTION DESCRIPTION

Goals of Intervention
- Improve HIV medication adherence

Target Population
- HIV clinic patients who are antiretroviral treatment (ART) experienced

Brief Description

Rewarding Adherence Program (RAP) is an individual-level intervention delivered to HIV clinic patients in Kampala, Uganda, who are antiretroviral therapy experienced. The intervention is designed to increase medication adherence by providing small incentives allocated by a lottery drawing. For Intervention Group 1, the lottery drawing is conditional on attending timely clinic visits, which are confirmed by checking the clinic patient's scheduling booklet. For Intervention Group 2, the lottery drawing is conditional on achieving ART adherence of 90% or higher, and is confirmed by downloading the patient's latest Medical Event Monitoring System (MEMS) data. During lottery drawings, eligible clinic patients draw a number out of a bag with cards numbered 1 through 6. Patients receive an incentive if they draw a "6," and were offered a choice of one of three items (i.e., a coffee mug, an umbrella, or a water bottle) that have a monetary value of about 6000 Ugandan shillings (approximately $1.50 USD).

Theoretical Basis
- Behavioral economics

Intervention Setting
- HIV clinic

Intervention Duration
- On-going

Deliverer
- Study Coordinator

Delivery Methods
- Allocation of small incentives (i.e., coffee mug, an umbrella, or a water bottle)

Structural Components

There are no structural components reported for this study.

INTERVENTION PACKAGE INFORMATION

An intervention package is not available at this time. Please contact **Sebastian Linnemayr**, RAND Corporation, 1776 Main St., Santa Monica, CA 90401.

Email: slinnema@rand.org for details on intervention materials.

EVALUATION STUDY AND RESULTS

Study Location
The original evaluation study was conducted in Kampala, Uganda between 2013 and 2014.

Key Intervention Effects
- Increased medication adherence

Recruitment Settings
HIV clinic

Eligibility Criteria
Men and women were eligible if they were ages 18 years or older, had documented adherence problems (e.g., missed at least 1 clinic visit in the last 6 months, or self-reported adherence problems), and were on ART for at least 2 years.

Study Sample
The baseline study sample of 155 men and women is characterized by the following:
- *37% male, 63% female*
- *Mean age of 39 years (SD = 10.3)*
- *66% experienced feelings of depression or hopelessness*

Assignment Method
Participants (N = 155) were randomly assigned to 1 of 3 groups: Intervention Group 1 (n = 51), Intervention Group 2 (n = 54), or standard of care (n = 50). Intervention Group 1 participants qualified for the lottery drawings based on attending timely clinic visits. Intervention Group 2 qualified for the lottery drawings based on achieving ART adherence of 90% or higher (Intervention Group 2).

Comparison
Participants in the standard-of-care comparison group received usual care.

Relevant Outcomes Measured
- Medication adherence behavior was recorded using MEMS caps and was assessed over 9 months.

Participant Retention
- Intervention Group 1 (Timely clinic visit attendance)
  - 94% retained at 9 months post-initiation of intervention

- Intervention Group 2 (ART adherence of 90% or higher)
  - 94% retained at 9 months post-initiation of intervention

- Standard of Care Control
  - 92% retained at 9 months post-initiation of intervention

Significant Findings on Relevant Outcomes
- At 9 months post-initiation of intervention, mean medication adherence was significantly higher among Intervention Group 1 participants compared to control participants (88.3% vs 80.9%, respectively; unadjusted mean difference = 7.4 percentage points, 95% CI = 0.3—14.4, p = 0.04).
- At 9 months post-initiation of intervention, the proportion of participants achieving 90% mean medication adherence was significantly higher among Intervention Group 1 participants compared to control participants (60.9% vs 39.6%, respectively; unadjusted marginal effect = 21.5 percentage points, 95% CI = 0.9—42.1, p = 0.04).
- At 9 months post-initiation of intervention, the proportion of participants achieving 90% mean medication adherence was significantly higher among Intervention Group 2 participants compared to control participants (65.4% vs 39.6%, respectively; unadjusted marginal effect = 26.2 percentage points, 95% CI = 6.2—46.3, p = 0.01; adjusted marginal effect = 24.8 percentage points, 95% CI = 4.0—45.7, p = 0.02).
- At 9 months post-initiation of intervention, the proportion of participants achieving 90% mean medication adherence was significantly higher among Combined Intervention Groups 1 and 2 participants compared to control participants (63.3% vs 39.6%, respectively; unadjusted marginal effect = 23.8 percentage points, 95% CI = 6.4—41.2, p = 0.007; adjusted marginal effect = 21.2 percentage points, 95% CI = 3.0—39.4, p = 0.023).

Considerations
- This study did not meet best-evidence criteria because there was no measurement of viral load.
- There was no significant positive effect between Intervention Group 1 versus Standard of Care Control for participants achieving 90% mean medication adherence adjusted for age, sex, education, wealth, and marital status.
- There were no significant positive intervention effects in the analyses (e.g., Intervention Group 1 versus Standard of Care Control, Intervention Group 2 versus Standard of Care Control, and the combined Intervention Groups 1 and 2 versus Standard of Care Control) for mean medication adherence adjusted for age, sex, education, wealth, and marital status.
- There was a significant difference in disposable income between participants who were retained in the study and those who were lost to follow-up (n=10). Those lost to follow-up reported a higher average disposable income. This difference was determined to be a non-fatal limitation due to the small number of participants who were lost to follow-up. A bias towards the null is indicated because those lost to follow up were primarily in the intervention groups and a positive correlation existed between disposable income and mean medication adherence.*

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*Information obtained from author

REFERENCES AND CONTACT INFORMATION

Linnemayr, S., Stecher, C., & Mukasa, B. (2017). Behavioral economic incentives to improve adherence to antiretroviral medication. *AIDS, 31*, 719–726.

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