SMARTLINK

Evidence-Based Structural Intervention
Evidence-Based Engagement in HIV Care

INTERVENTION DESCRIPTION

Goal of Intervention
- Improve engagement in HIV care
- Improve viral suppression

Intended Population
- Persons who are newly diagnosed with HIV and are Android smartphone owners

Brief Description

SmartLink is a mobile health app designed to improve linkage to care among persons who are newly diagnosed with HIV and are Android smartphone owners. The SmartLink app allows participants to engage in their own care by directly providing them with appointment reminders, two laboratory results (CD4 count and viral load), information about the laboratory tests, antiretroviral (ART) adherence, and general HIV information. The app, available in both English and Zulu, communicates information to the participant in simple language using a color-coded scale reporting normal values that are accompanied by short explanations of the results, and provides guidance on any necessary actions that should be taken. Participants receive assistance with the installation of the SmartLink app on their Android smartphone from study staff. To protect participants' HIV status and ensure confidentiality, the SmartLink logo, app icon, and landing page do not make reference to HIV/AIDS or healthcare, and the app requires a username, password, and a personal identification number to gain access to personal health data. All participants, regardless of study arm, are instructed to attend their local clinic for a follow-up visit within a few weeks after starting the study and not wait for the results on their phone.

Theoretical Basis
- None reported

Intervention Duration
- Participants were followed for a minimum of 8 months

Intervention Setting(s)
- Smartphone

Deliverer
- SmartLink app available in English and Zulu

Delivery Methods
- Appointment reminders
- Education
- Mobile app

Structural Components
- Access – HIV medical care
  - Improved access to HIV medical care and facilitated engagement in care for persons who are newly diagnosed with HIV through the smartphone app
- Capacity building—Technology
  - Developed smartphone app to facilitate engagement in care for persons who are newly diagnosed with HIV

INTERVENTION PACKAGE INFORMATION

An intervention package is not available at this time. Please contact **Alex Fischer,** 22 Esselen Street, Johannesburg, 2001, South Africa.

Email: **afischer@wrhi.ac.za** for details on intervention materials.

EVALUATION STUDY AND RESULTS

Study Location Information
The original evaluation study was conducted in Johannesburg, South Africa between 2015 and 2017.

Key Intervention Effects
- Increased engagement in HIV care

Recruitment Settings
Five public HIV testing sites, which included one community health center, three clinics, and one tertiary hospital

Eligibility Criteria
Participants were eligible if they were newly diagnosed with HIV, a resident of the area, aged 18 years or older, not pregnant, and able to read English or Zulu. Participants were excluded if they did not have an Android smartphone, no data on their phone, or if they had no active subscriber identity module card in their phone.

Study Sample
The baseline study sample of 345 newly diagnosed persons with HIV is characterized by the following:

Overall
- *65% female, 35% male*
- *56% 31 years and older, 44% 18 – 30 years*
- *53% completed secondary school, 27% some secondary school, 15% attended/completed tertiary education, 4% primary education only*
- *47% employed full time, 26% unemployed, 17% employed part time, 7% self-employed, 3% student*

Assignment Method
Participants who were newly diagnosed with HIV were randomized to 1 of 2 study arms: SmartLink intervention (n = 181) or a standard of care comparison (n = 164).

Comparison
Participants in the standard of care arm received counseling and were referred to their local ART initiation site to collect laboratory results and initiate appropriate treatment as needed.

Relevant Outcomes Measured
- Engagement in care, identified as linkage to care within the study, was defined as showing evidence of an HIV-related laboratory test result between 2 weeks and 8 months after participant recruitment.
- Viral suppression was defined as having a viral load less than 400 copies/mL.

Participant Retention
- Participant retention was not reported.

Because participant retention is not a criterion for the Structural Interventions chapter, the Prevention Research Synthesis project does not evaluate that information.

Significant Findings on Relevant Outcomes
- Among youth aged 18 to 30 years, a significantly greater percentage of intervention participants than control participants reported engaging in care between 2 weeks and 8 months (53.0% vs. 31.9%; Chi-square = 6.8; p = 0.009). This effect also remained after 8 months (69.9% vs. 50.7%; Chi-square = 5.8; p = 0.016).

Considerations
Although the intended population is newly diagnosed persons and the study authors refer to the outcome as linkage to care, the outcome does not meet the PRS operational definition of linkage to care because the follow-up period is longer than 6 months. However, this outcome does meet the PRS operational definition for engagement in HIV care since engagement in HIV care does not have a required timeframe for follow-up.

Additional significant positive findings on non-relevant outcomes
- None reported

Non-significant findings on relevant outcomes
- Among participants who had viral load tests in the National Health Laboratory Service database, there were no significant differences for viral suppression between intervention and comparison participants (63.6% vs. 59.0%; Chi-square = 0.2; p = 0.663).
- There were no significant differences for engagement in HIV care between intervention and comparison participants between 2 weeks and 8 months for the following groups:
    - Total cohort (48.6% vs. 45.1%; Chi-square = 0.4; p = 0.52)
    - Males (55.0% vs. 47.5%; Chi-square = 0.7; p = 0.41)
    - Females (45.5% vs. 43.7%; Chi-square = 0.1; p = 0.79)
    - Aged over 30 years (44.9% vs. 54.7%; Chi-square = 1.9; p = 0.17)
- There were no significant differences for engagement in HIV care between intervention and comparison participants after 8 months (i.e., ever linked to care) for the following groups:
    - Total cohort (64.1% vs. 61.0%; Chi-square = 0.4; p = 0.55)
    - Males (66.7% vs. 67.2%; Chi-square = 0.0; p = 0.95)

o Females (62.8% vs. 57.3%; Chi-square = 0.7; p = .40)
o Aged over 30 years (59.2% vs. 68.4%; Chi-square = 1.8; p = 0.18)

Negative findings
- None reported

Other related findings
- This intervention is also determined to be evidence-based for the Linkage to, Retention, and Re-engagement in HIV Care (LRC) chapter.

Implementation research-related findings
- None reported

Process/study execution findings
- 90% of the persons newly diagnosed with HIV who volunteered to participate in the study were found ineligible to participate during the prescreening and screening processes due to the smartphone specifications required to install the SmartLink App.

Adverse events
- None reported

Funding
Department for International Development of the UK Government
World Bank

REFERENCES AND CONTACT INFORMATION

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