Improving Medication Adherence in HIV-Positive Young Adults

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Introduction

Background
- Human immunodeficiency virus (HIV) is an epidemic which affects more than 36.7 million people worldwide.
- Of the 70% with known HIV infection globally, 20.9 million are on antiretroviral therapy (ART).
- DHHS recommends everyone diagnosed with HIV begin ART as soon as possible after diagnosis.
- Starting, stopping, then re-initiating ART can lead to unsuppressed virus, which can lead to medication resistance.
- Medication adherence is important for HIV-positive patients on ART as non-adherence can lead to drug resistance, transmission of HIV to other people, and complications and progression of the disease process up to and including death.
- Patients face many barriers to ART adherence, including side effects, difficulty taking medication, living situation, mental health issues, substance abuse, pill burden, and forgetfulness.
- Specific barriers at the HIV Clinic include transportation, pill burden, and forgetfulness.
- Approximately 36.9 million people currently living with HIV.
- Almost 21 million, 53%, are on antiretroviral (ART) medication.
- CDC (2018) estimates 38,500 new HIV infections in the US.
- Fewer new infections, primarily due to ART.
- The HIV Clinic sees about 1,200 HIV-positive patients.

Methods

Design: Pre-posttest design was used for this quality improvement project.
Setting: Dedicated HIV Clinic located in an urban, public, academic, health sciences center.

Inclusion Criteria:
- HIV-positive
- On an antiretroviral medication regimen
- Age 19-29

Exclusion Criteria:
- HIV-negative
- Not on antiretroviral medication
- Age 18 and below or 30 and above

Intervention:
- Medication adherence survey
- Cellular telephone medication reminder app, free

Data Collection:
- Pre- and post-intervention survey, 8-item, paper
- Pre-intervention lab (CD4 count and viral load), collected at regularly scheduled clinic visit

Table 1 Baseline Characteristics of HIV-Positive Young Adults

<table>
<thead>
<tr>
<th>Demographic characteristics</th>
<th>N (%)</th>
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</thead>
<tbody>
<tr>
<td>Age, mean (SD)</td>
<td>26.0 (1.8)</td>
</tr>
<tr>
<td>Sex, n (%)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5 (83.3)</td>
</tr>
<tr>
<td>Female</td>
<td>1 (16.7)</td>
</tr>
<tr>
<td>Race, n (%)</td>
<td></td>
</tr>
<tr>
<td>Black, African American</td>
<td>4 (66.7)</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>2 (33.3)</td>
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<tr>
<td>SD = Standard Deviation</td>
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</tbody>
</table>

Table 1 Baseline Characteristics of HIV-Positive Young Adults

Demographics
Baseline (n=6): More males (83.3%), mostly African-American (66.7%), 33.3% Hispanic/Latino.
Post-intervention (n=6): Same demographics

Descriptive Statistics
Baseline pre-intervention survey scores (n=6): Median summary score: 5 (total score possible: 11)
Post-intervention survey scores (n=6): Median summary score: 6 (total score possible: 11)

Discussion & Conclusions

Purpose & Aims

Purpose: The purpose of this quality improvement project is to implement a mobile app to encourage medication adherence among HIV-positive young adults as evidenced by decreased viral load and increased CD4 count.

Aim 1: To implement the use of a cellular telephone app to support current antiretroviral medication adherence teaching practices for HIV-positive young adults.

Aim 2: To increase antiretroviral medication adherence in HIV-positive young adults as evidenced by decreased viral load and increased CD4 count.

Discussion

Findings:
- Medication adherence app is helpful for some, but not all.
- Forgetfulness most common cause for medication non-adherence.
- Other barriers to adherence include side effects of medication, feelings of depression and hopelessness, and fear that someone would find out what they are taking and why.

Limitations:
- Small sample size.
- Difficulty recruiting.
- Recruitment process lasted longer than estimated.
- Post-intervention lab unable to be collected due to time constraints.

Strengths:
- Identification of multiple barriers to adherence.
- Findings may be used to inform further research.

Recommendations:
- Continue assessment of patient-identified barriers to adherence.
- Evaluate adherence at each clinic visit.
- Re-evaluate and modify intervention based on findings.

Conclusions

- May improve adherence.
- May improve patient outcomes by reducing the viral load and increasing the CD4 count.
- May inform further research.