Usability and Acceptability of an mHealth Platform for People Living with HIV in Washington, DC

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D.C. HIV Statistics

- EHE – Priority Jurisdiction
- 12,161 (1.7%) PWH
- >50% of PWH are 50 yrs or older
- Sexual contact is the leading mode of transmission
The D.C. Cohort Study

• Longitudinal multi-site research study of PWH receiving outpatient care at 14 participating clinics in DC

• Goal: Improve quality of care and contribute to body of knowledge of HIV in DC

• Enrollment from Jan. 2011 – present

• >12,200 consenting PWH
The D.C. Cohort Study

- Database of HIV patients receiving outpatient care inclusive of treatments, diagnoses, lab results, procedures
- Monthly upload of data from sites EMRs
- Active CAB participation
- Close collaboration with DOH; periodic linkage of cohort data and DOH HIV, STD, and other infectious disease databases
PositiveLinks (PL)

- mHealth app for PWH to improve RIC
- Increased VS and CD4
- Mainly in non-urban settings
- Used by patients and providers
- Endorsed by: CDC, NASTAD, HRSA
PL in the DC Cohort (1R01MH122375-01A1)

• Hybrid effectiveness-implementation design
  – Effectiveness of PL on HIV related outcomes (i.e., VS and Retention in care)
  – Implementation using CFIR and RE-AIM

• Cluster randomized trial at 12 Cohort sites

• Three aims
  – 1: Mixed methods formative work to tailor PL for DC population
  – 2: Cluster Randomized Efficacy trial
  – 3: Implementation evaluation
Methods: Aim 1 – Beta Testing

• Recruited PWH from participating sites
• Eligibility: Enrolled in DC Cohort, English or Spanish speaking, 16 or older
• Beta testing: Provided access to PL app for 1 month period
• Data collected
  – Demographics
  – App usage
  – System Usability
  – In-depth interviews
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>9</td>
<td>64%</td>
</tr>
<tr>
<td>Non-Hispanic Black</td>
<td>9</td>
<td>64%</td>
</tr>
<tr>
<td>Age in years (mean, range)</td>
<td>49</td>
<td>20-74</td>
</tr>
<tr>
<td>Education (HS/GED)</td>
<td>5</td>
<td>36%</td>
</tr>
<tr>
<td>State of Residence (DC)</td>
<td>13</td>
<td>93%</td>
</tr>
<tr>
<td>Spanish speaking</td>
<td>2</td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>--------------------------------</td>
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<tr>
<td>Response Rate</td>
<td>71.29</td>
<td>35.38</td>
</tr>
<tr>
<td>Medication Adherence</td>
<td>72.14</td>
<td>33.11</td>
</tr>
<tr>
<td>Average Mood</td>
<td>1.92</td>
<td>1.98</td>
</tr>
<tr>
<td>Average Stress</td>
<td>3.38</td>
<td>2.02</td>
</tr>
<tr>
<td>Quiz Response</td>
<td>4.57</td>
<td>2.66</td>
</tr>
<tr>
<td>Community Post</td>
<td>2</td>
<td>2.51</td>
</tr>
<tr>
<td>App Launches</td>
<td>42.57</td>
<td>23.31</td>
</tr>
<tr>
<td>Messages Received</td>
<td>4.43</td>
<td>2.16</td>
</tr>
<tr>
<td>Messages Sent</td>
<td>4.29</td>
<td>3.39</td>
</tr>
</tbody>
</table>
Figure 1: App Use Acceptability

- **System Usability Scale**
  - 10 item questionnaire
  - 5 possible responses
    - Strongly agree – strongly disagree
  - >68 indicates above average usability

- **PL SUS Score = 77%**
Qualitative Findings from Beta Testing

- Exit interviews n=14
- Records, transcribed, entered into Dedoose
- 4 coders, each transcript coded by minimum of 2 coders
- Codebook developed via iterative method
- Overall 84% agreement level
Qualitative Findings from Beta Testing

• Five major themes (code presence)
  – Likes of the App (14)
  – Dislikes of the App (14)
  – App Communications (14)
  – Technical Issues (14)
  – Suggestions (12)
Table 3: Qualitative Findings from Beta Testing
Exit Interviews, N=14

<table>
<thead>
<tr>
<th>Most Applied Codes</th>
<th>Number of Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Likes&quot; of the app</td>
<td>52</td>
</tr>
<tr>
<td>Daily Reminders</td>
<td>23</td>
</tr>
<tr>
<td>Medication/mood/stress</td>
<td>21</td>
</tr>
<tr>
<td>Suggestions</td>
<td>35</td>
</tr>
<tr>
<td>&quot;Dislikes&quot; of the app</td>
<td>23</td>
</tr>
</tbody>
</table>
Representative Quotes from Qualitative Analysis

“There’s nothing that I don’t like or that doesn’t look good to me. Everything is fine.”

“I liked that it was simplified, simple explanations like under lab results, the answers to those frequently asked questions, explain HIV and just everything it was just simple it wasn’t overwhelming I really like that.”
Representative Quotes from Qualitative Analysis

“So I was thinking maybe if there is an option where the person can opt for how many reminders they might want or how long a reminder hangs around or something like that, I’m not sure if that’s an option or not.”
Discussion

- Demographics mirror HIV population in Washington D.C.
- App response rate = 71.29 / Adherence rate = 72.14
- SUS indicates high usability
- Most discussed theme: “Likes of the app” & “Suggestions”
Next Steps

• Finalize analysis of Aim 1 substudies

• Efficacy trial (Aim 2) currently under way
  – 6 of 12 sites launched
    • 4/6 intervention sites
    • 2/6 control sites

• Implementation data on clinic services and providers collected concurrently with Aim 2
References


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