Use of an mHealth Intervention to Improve HIV Treatment and Engagement in HIV Care among Recently Incarcerated Persons in Washington, DC

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Background

- Criminal justice-involved populations experience disproportionate burden of HIV prevalence
- Recently released HIV-infected individuals have suboptimal linkage and engagement in care in community
- mHealth interventions shown effective for HIV treatment and prevention
  - HIV-infected youth, men who have sex with men, sub-Saharan African populations
- Previous mHealth studies have not focused on criminal justice-involved populations in the U.S.
**Overall Objective:**
- To assess the feasibility of an mHealth intervention to increase engagement in HIV care and viral suppression among persons recently released from correctional facilities.

**Intervention:**
- CARE+ Corrections (Computer Assessment and Risk-Reduction Education) - one session, computer-based motivational interviewing (MI) and counseling tool for HIV-infected persons released from correctional facilities.
- Texting intervention delivered after release

**Hypothesis:**
- The use of mHealth tools will increase engagement in care and viral suppression in the intervention group
CARE+ Corrections Session
CARE+ Corrections Session

- Anonymous log-in, avatar selection
- Introduction/How to use
CARE+ Corrections Session

- Anonymous log-in, avatar selection
- Introduction/How to use
- Risk Assessment
CARE+ Corrections Session

- Anonymous log-in, avatar selection
- Introduction/How to use
- Risk Assessment
- Tailored Feedback
  - Skills-Building Videos
CARE+ Corrections Session

- Anonymous log-in, avatar selection
- Introduction/How to use
- Risk Assessment
- Tailored Feedback
  - Skills-Building Videos
- Prevention Plan
- Printout (option to share)
Texting Intervention

- Messages “library” developed through formative work and adaptation of previous library
  - Medical visit reminders
  - ARV adherence reminders
  - Supportive messaging
  - Barriers to care

- Option to customize messaging

- Option to customize frequency
  - Daily, weekly or monthly (as desired)

- Cell phone provided by study
CARE+ Corrections Study - Methods

Recruitment:
- Jail-based recruitment of persons from DC Jail with anticipated release
- Community-based recruitment of persons released from correctional facilities (≤6 months post-release)
  - Engaged more than 46 community-based and DOC-affiliated organizations that work with returning citizens
  - Street-based recruitment

Eligibility:
- HIV-infected
- ≥18 years old
- Recent release from jail, prison, or halfway house (≤6 months post-release)
CARE+ Corrections Study - Methods

- Random assignment:
  - CARE counseling session and texting
  - Control = overdose prevention video

- Assessments:
  - Baseline; 12 week and 24 week follow-up visits
  - Structured survey:
    - Demographics, incarceration history, sex/drug use behaviors, health care utilization, HIV care engagement and ARV adherence
    - Blood draw/medical records for viral load
Primary outcomes assessed at week 24:
- HIV viral suppression: <200 copies/mL
- Engagement in HIV community-based care: having at least one HIV care visit in past 6 months

- Intent to treat; random effects logistic regression

- Baseline and other covariates differing across intervention/control groups at p<0.10 were included in final models

- Multiple imputation using fully conditional specification models for missing data
CARE+ Corrections Study - Results

Screened N=219

Randomized N=112

Excluded (n=107):
- Did not meet inclusion criteria (n=72)
- Declined to participate (n=13)
- Could not be reached to complete screening visit (n=22)

Control Arm
n=55*
* 2 did not complete baseline visit

Intervention Arm
n=57

Total analytic sample: n=110
CARE+ Corrections vs. Control Group

- Community recruitment (%)
- Male (%)
- Transgender women (%)
- Black (%)
- Median # times in correctional facilities
- Median yrs in correctional facilities

- CARE+ Corrections
- Control
CARE+ Corrections vs. Control Group

<table>
<thead>
<tr>
<th>Category</th>
<th>CARE+ Corrections</th>
<th>Control</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Regular provider pre-incar</td>
<td>80</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>Had ARV Rx pre-incar</td>
<td>70</td>
<td>50</td>
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<tr>
<td>Regular provider at enrollment</td>
<td>90</td>
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<td>Taking ARVs at enrollment</td>
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* p<0.05
# Viral Suppression

<table>
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<tr>
<th>Variable</th>
<th>Univariable OR (95% CI)</th>
<th>Multivariable AOR (95% CI)</th>
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<tr>
<td>CARE+ Corrections/texting intervention</td>
<td>1.56 (0.47, 5.13)</td>
<td>2.04 (0.62, 6.70)</td>
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<td>DC Jail (vs. Community) enrollment</td>
<td>0.60 (0.14, 2.51)</td>
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<td>Female (vs. Male)**</td>
<td>0.29 (0.06, 1.38)</td>
<td>0.28 (0.07, 1.24)</td>
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<td>Transgender (MTF) (vs. Male)**</td>
<td>4.66 (0.73, 29.81)</td>
<td>2.22 (0.36, 13.50)</td>
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<td>Black race (vs. white and non-black Hispanic)**</td>
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<td>5.56 (0.98, 31.69)</td>
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<td>Regular healthcare provider (baseline)*</td>
<td>8.13 (1.45, 45.58)</td>
<td>1.30 (0.22, 7.60)</td>
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<td>Mental health diagnosis*</td>
<td>1.13 (0.18, 7.23)</td>
<td>2.33 (0.40, 13.74)</td>
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<td>27.96 (3.24, 241.45)</td>
<td>6.55 (0.79, 54.44)</td>
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<td>≥90% adherence pre-incarceration (vs. no ARV)**</td>
<td>27.82 (3.70, 68.00)</td>
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<td>&lt;90% adherence pre-incarceration (vs. no ARV)**</td>
<td>4.13 (0.88, 19.47)</td>
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*Variables not balanced at baseline

**p<0.10 and included in multivariable analysis
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Conclusion

- CARE+ Corrections intervention had no significant effect on viral suppression and HIV care engagement
  - Lack of statistical significance may be due to low sample size

- Persons with high adherence prior to study enrollment were significantly more likely to be virally suppressed at follow-up

- Persons with PTSD were more likely and persons enrolled in the DC Jail were less likely to be engaged in HIV care during study follow-up

- Future research should explore how to optimize interventions to continue to improve outcomes in this population
CARE Corrections: Technology for Jail HIV/HCV Testing, Linkage, and Care (TLC)
National Institute on Drug Abuse (R01DA030747)

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Irene Kuo, George Washington University
Ann Kurth, Yale University
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  - Rudy Patrick, MPH
  - Breana Castonguay, MPH
  - Halli Olsen, MPH
  - Alice Cates, MS
  - James Peterson, EdD

- DC Department of Corrections
  - Beth Mynett, MD
  - Reena Chakraborty, PhD
CARE+ Corrections vs. Control Group

- Any mental health dx
- Unstable housing, past 3 mo
- Hazardous/harmful drinking
- Drug dependence
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CARE+ Corrections vs. Control Group

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Percentage

- CARE+ Corrections
- Control
Texting Intervention (cont’d)

- Four types of messages:
  - Medical visit appointment reminder
    - Don’t forget your upcoming [X] Clinic appointment. Call the clinic at 202-XXX-XXXX if you can’t make it
    - Don’t forget your upcoming meeting at Church. Call the pastor if you can’t make it
  - ART adherence reminder
    - Don’t forget your medications today. They are important!
    - Don’t forget to eat skittles today. They are important!
  - Supportive messaging/secondary prevention
    - Don’t forget to use protection. Protect yourself and your partner!
  - Barriers to care
    - Get your benefits/insurance programs set up: call xxx-xxx-xxxx