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.

CARE+ Corrections Study

<u>Overall Objective:</u>

- To assess the feasibility of an mHealth intervention to increase engagement in HIV care and viral suppression among persons recently released from correctional facilities.

<u>Intervention:</u>

- CARE+ Corrections (<u>C</u>omputer <u>A</u>ssessment and <u>R</u>isk-Reduction <u>E</u>ducation) - one session, computer-based motivational interviewing (MI) and counseling tool for HIV-infected persons released from correctional facilities.

- Texting intervention delivered after release

<u>Hypothesis:</u>

- The use of mHealth tools will increase engagement in care and viral suppression in the intervention group

CARE+ Corrections Session

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- Anonymous log-in, avatar selection

- Introduction/How to use

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  - Skills-Building Videos

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- Prevention Plan

- Printout (option to share)

Please select one of the counselors to be your guide through this session.

Karen   JJ   Julie   Russel

Quit   Sound Off   Back   Continue

When you are HIV-positive you've got to make your health a priority. Here's what you have been doing to keep yourself healthy.

- You seem to be doing great taking your HIV medications every day. Taking all of your HIV meds everyday will keep you healthy and prevent you from developing resistant virus. Whatever routine you have in place to help remember to take your meds, continue when you are released.

- You have connected with a health care provider in the past. That's really helpful for taking care of your health. Be sure to reconnect once you get released/go home.

- Thanks for taking the time today to think about your health. Spending some time thinking about your health is important.

- It's tough moving from inside to outside. You deserve help when you get released/go home.

Quit   Sound On   Back   Continue

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
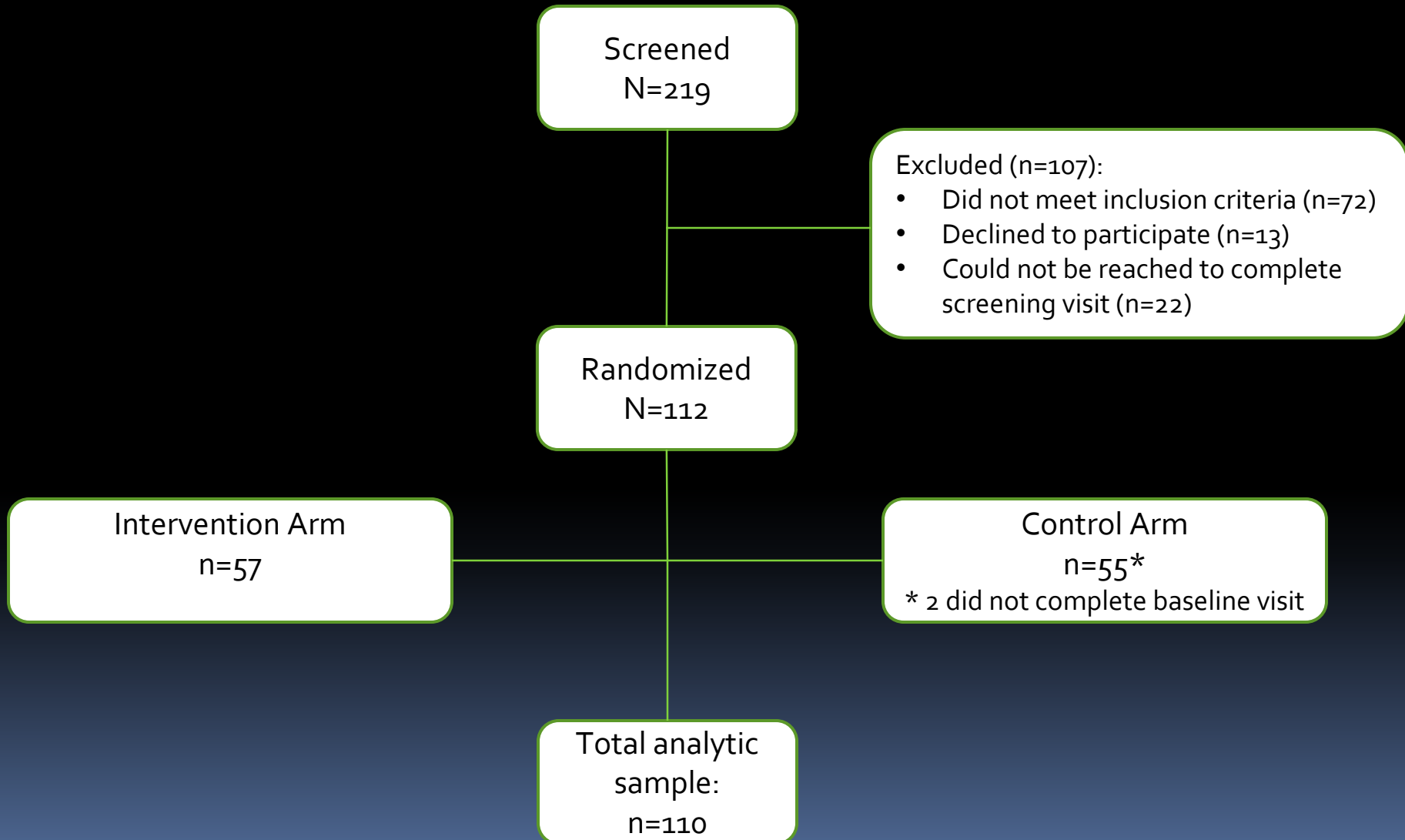 - ≥18 years old
  - Recent release from jail, prison, or halfway house (≤6 months post-release)

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
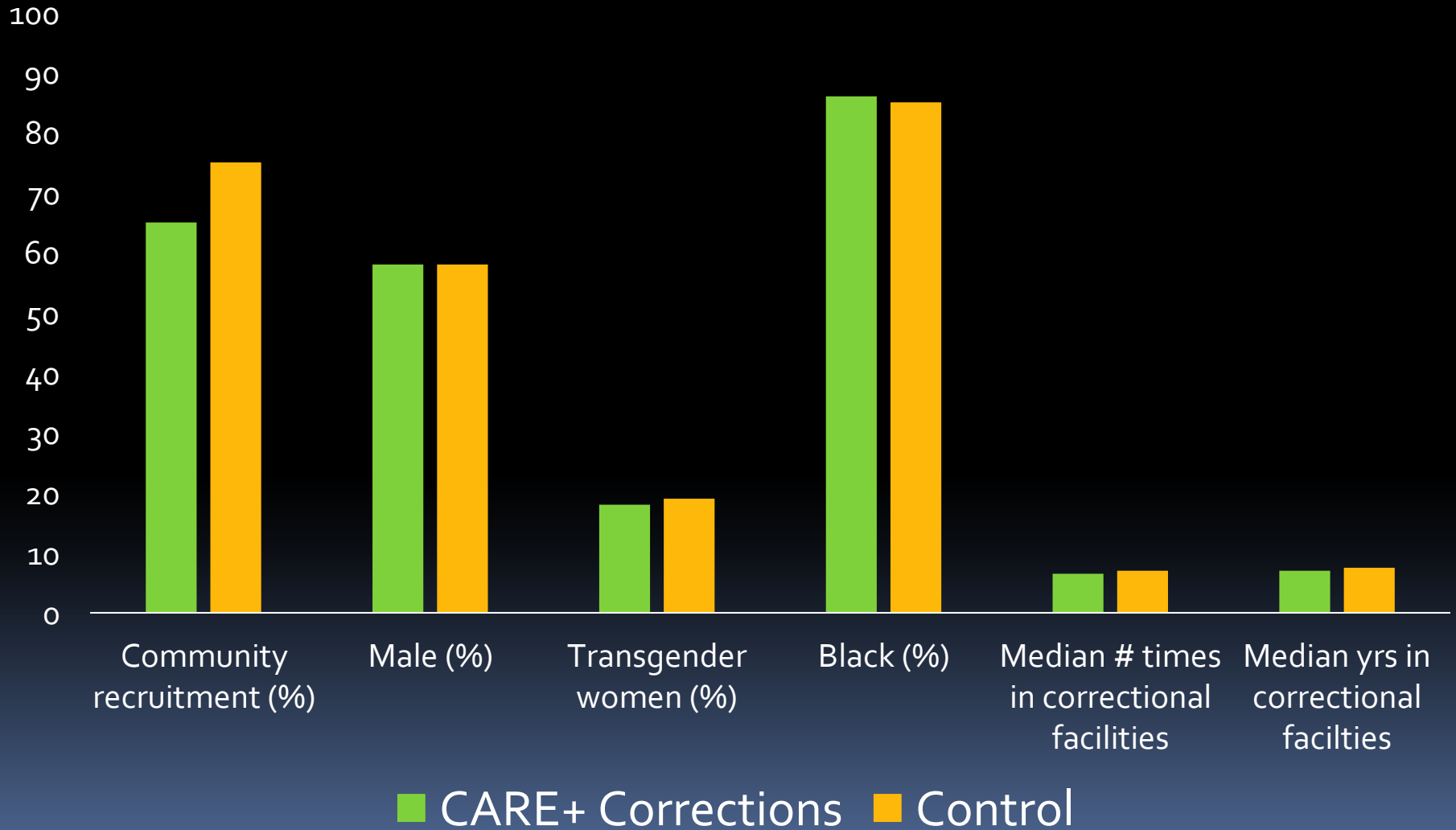 - Blood draw/medical records for viral load

CARE+ Corrections Study - Analysis

- 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

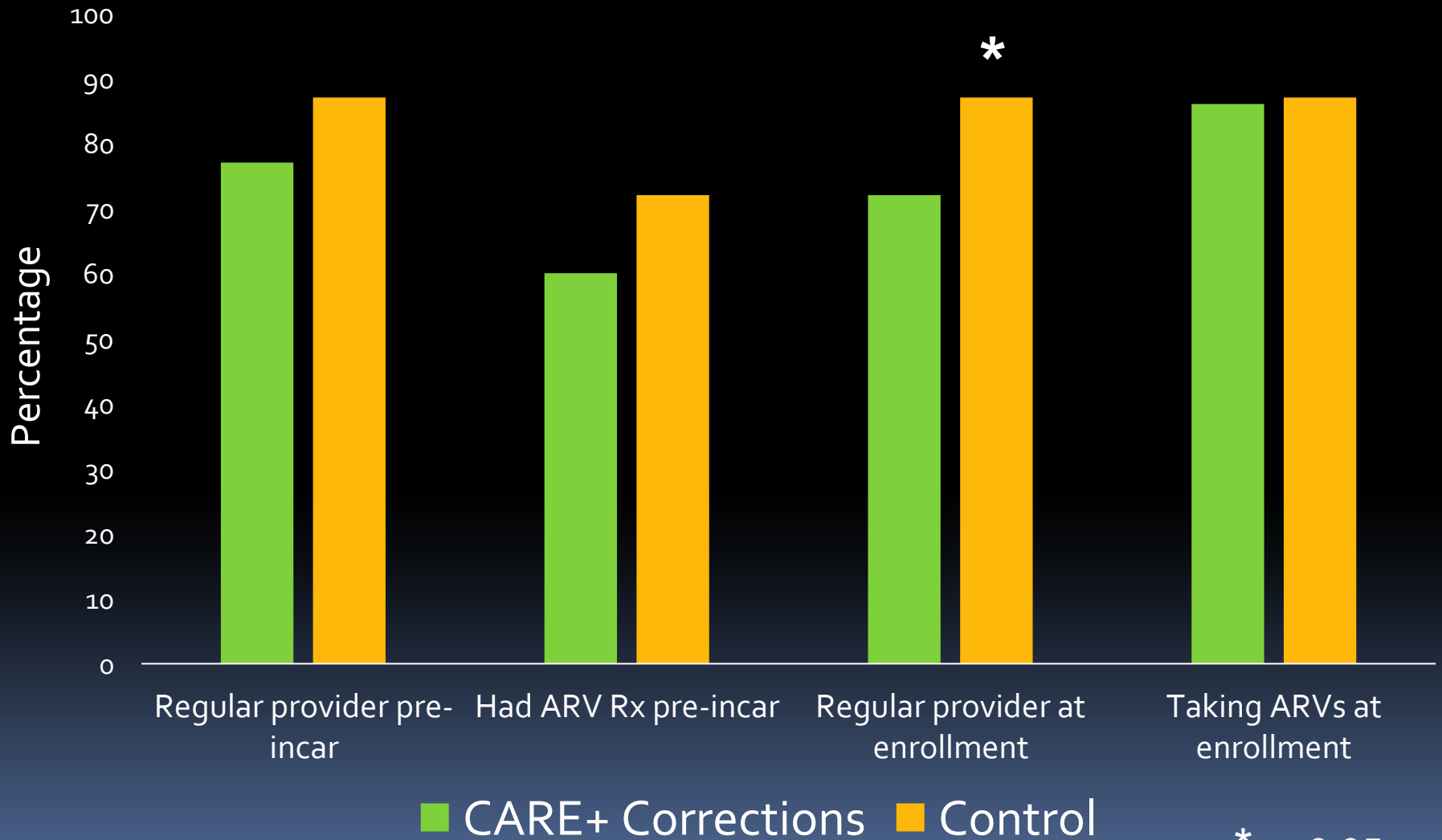- Multiple imputation using fully conditional specification models for missing data

CARE+ Corrections Study - Results

Screened
N=219

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)

Randomized
N=112

Intervention Arm
n=57

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

Total analytic sample:
n=110

CARE+ Corrections vs. Control Group

CARE+ Corrections vs. Control Group

Viral Suppression	Univariable OR (95% CI)	Multivariable AOR (95% CI)
CARE+ Corrections/texting intervention	1.56 (0.47, 5.13)	2.04 (0.62, 6.70)
DC Jail (vs. Community) enrollment	0.60 (0.14, 2.51)	
Female (vs. Male)**	0.29 (0.06, 1.38)	0.28 (0.07, 1.24)
Transgender (MTF) (vs. Male)**	4.66 (0.73, 29.81)	2.22 (0.36, 13.50)
Black race (vs. white and non-black Hispanic)**	5.49 (0.84, 35.83)	5.56 (0.98, 31.69)
Regular healthcare provider (baseline)*	8.13 (1.45, 45.58)	1.30 (0.22, 7.60)
Mental health diagnosis*	1.13 (0.18, 7.23)	2.33 (0.40, 13.74)
Unstable housing**	0.28 (0.06, 1.25)	0.35 (0.08, 1.46)
Taking ARVs (at enrollment)**	27.96 (3.24, 241.45)	6.55 (0.79, 54.44)
≥90% adherence pre-incarceration (vs. no ARV)**	27.82 (3.70, 68.00)	10.77 (1.83, 63.31)
<90% adherence pre-incarceration (vs. no ARV)**	4.13 (0.88, 19.47)	1.51 (0.29, 8.02)

*Variables not balanced at baseline
**p<0.10 and included in multivariable analysis

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Engagement in Care	Univariable OR (95% CI)	Multivariable AOR (95% CI)
CARE+ Corrections/texting intervention	1.28 (0.25, 6.55)	1.18 (0.25, 5.53)
DC Jail (vs. Community) enrollment**	0.06 (0.02, 0.26)	0.07 (0.02, 0.29)
Female (vs. Male)**	1.20 (0.36. 4.05)	0.65 (0.23, 1.86)
Transgender (MTF) (vs. Male)**	3.80 (0.84, 17.20)	1.91 (0.51, 7.12)
Regular healthcare provider (baseline)*	2.15 (0.59, 7.85)	1.13 (0.41, 3.16)
Mental health diagnosis*	2.40 (0.57, 10.16)	0.85 (0.24, 2.98)
PTSD**	4.63 (1.40, 15.31)	3.37 (1.14, 9.97)

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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+

CARE Corrections: Technology for Jail HIV/HCV Testing, Linkage, and Care (TLC)

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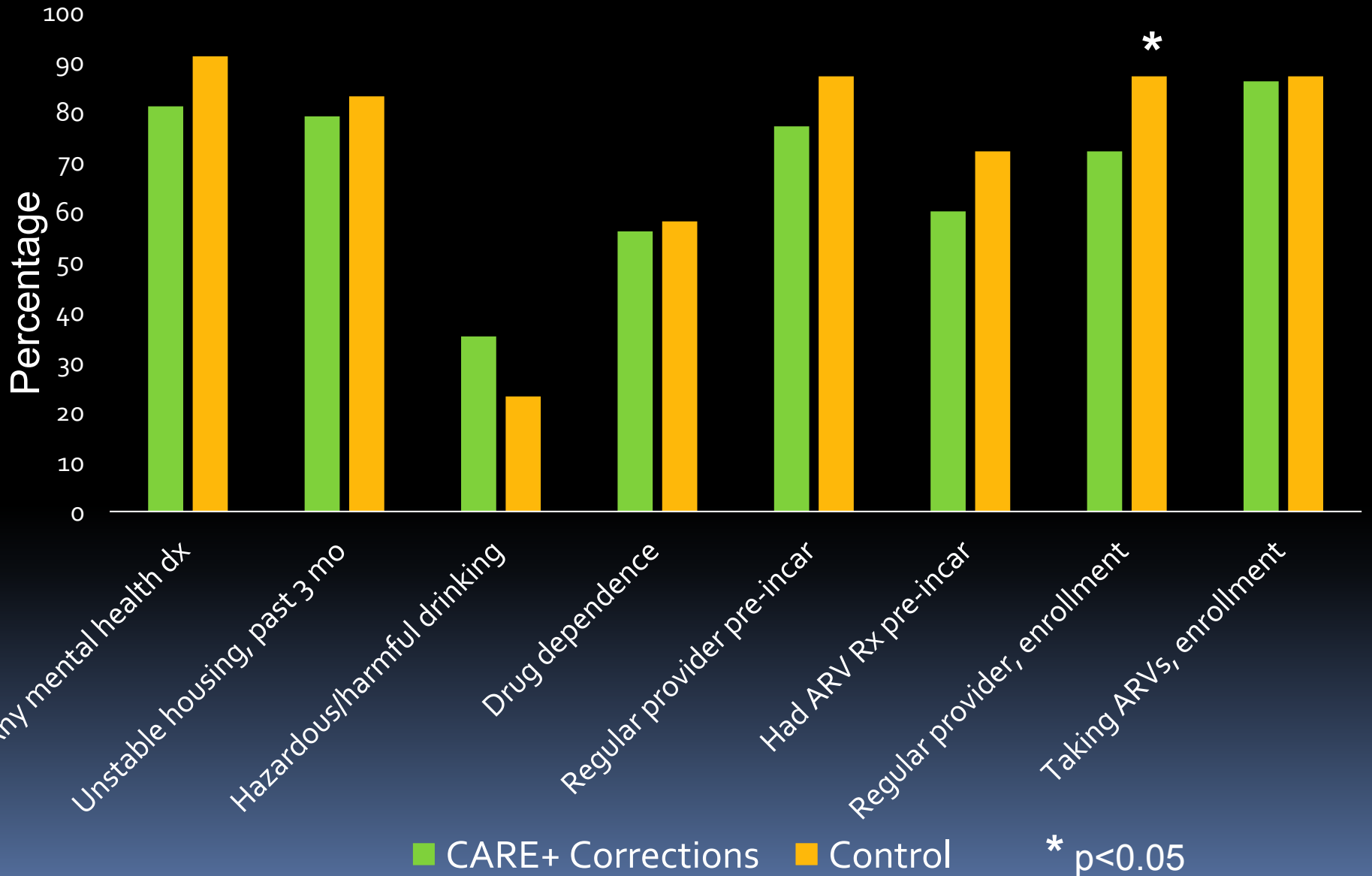
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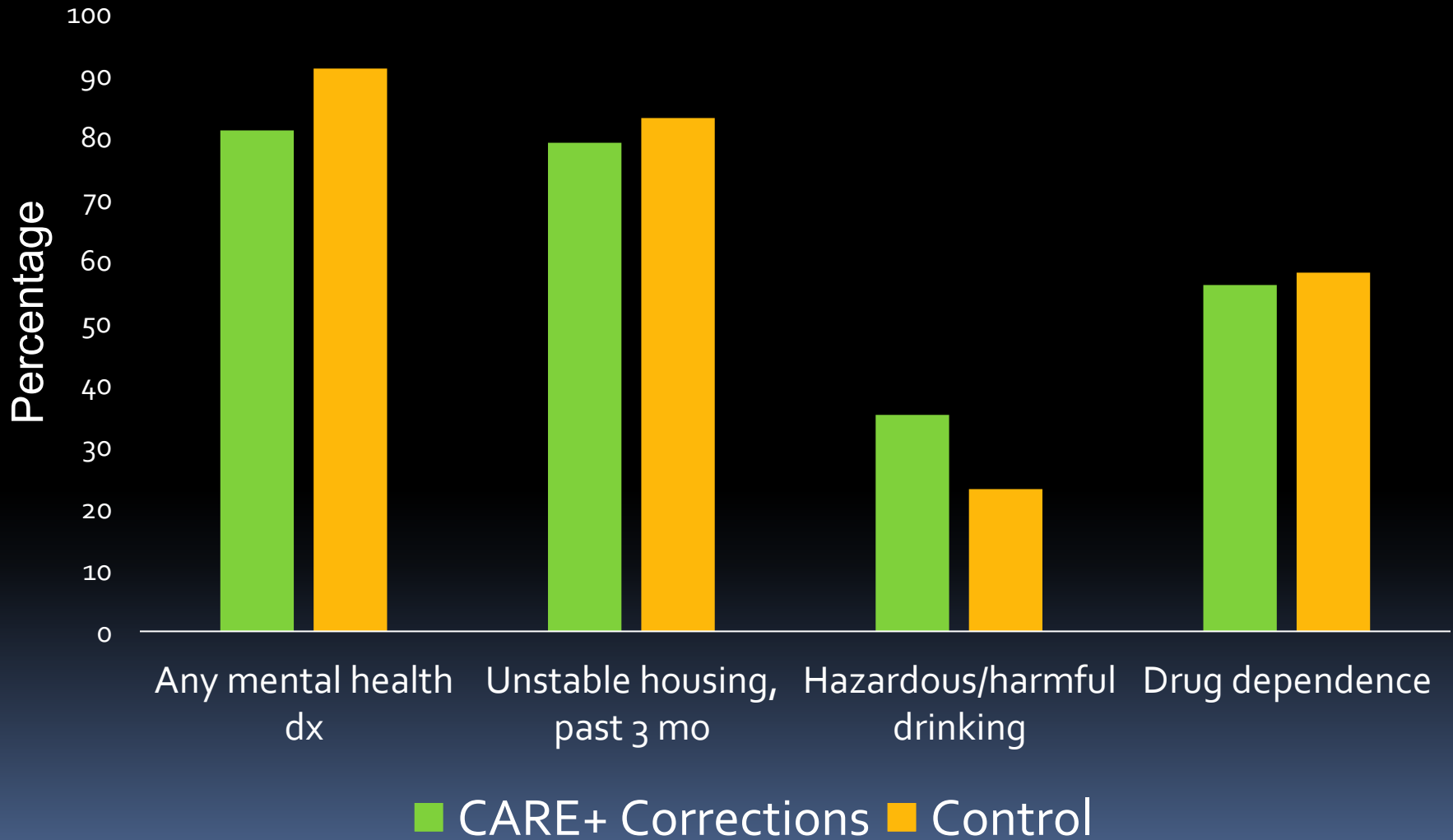
Texting Intervention (cont'd)

- 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*