Potential transmission risk and prevention in HIV patients receiving care: results from the Medical Monitoring Project

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NYC Health

Background
Medical Monitoring Project (MMP)

- In the USA, at the end of 2006, there were an estimated 1.1m people living with HIV/AIDS (PLWHA) (MMWR, 2008)
- In NYC, at the end of 2009, there were an estimated 108,886 PLWHA (NYC DOHMH, 2010)
- MMP is a national study of PLWHA receiving medical care for HIV
- Conducted by the Centers for Disease Control and Prevention (CDC) with local partners

Objectives

Medical Monitoring Project (MMP)

- To develop greater understanding of the health status and health-related needs of PLWHA, and their HIV transmission risk and prevention
- Data driven based on locally and nationally representative samples of HIV infected adults in care
- Can inform the development and planning of policy and programs for PLWHA, e.g. Ryan White CARE Act planning councils and consortia

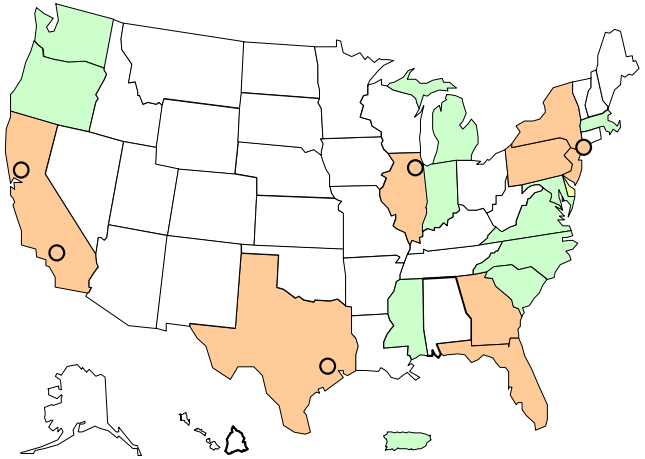
Methods

Medical Monitoring Project (MMP)

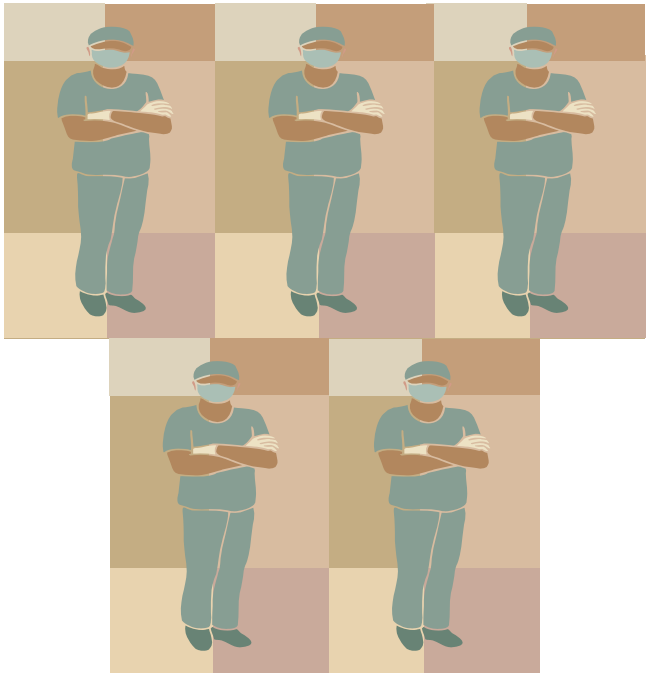
- Multi-year (2005-open) project of US adults in outpatient care for HIV
- Cross-sectional design
- Annual multi-stage probability sample

Method

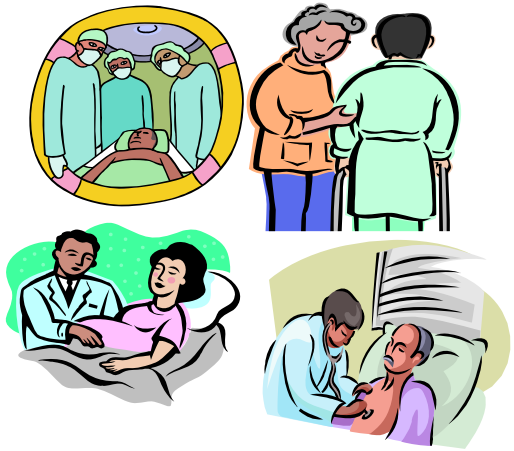
Medical Monitoring Project (MMP): 3-stage Sample Design



1st stage – local areas



2nd stage - providers



3rd stage - patients

Methods

Medical Monitoring Project (MMP): Sample Selection

- Stage 1 – Local Areas:
  - 26 areas selected (20 states and 6 cities)
  - Includes >80% of US AIDS cases
  - Probability of selection is proportional to size (PPS) (# of AIDS cases in 2002)

Methods

Medical Monitoring Project (MMP): Sample Selection

- Stage 2 – Medical Providers (facilities or private providers):
  - Providers who deliver HIV medical care
    - Monitor CD4 count, viral load
    - Rx ART

Methods

Medical Monitoring Project (MMP): Sample Selection

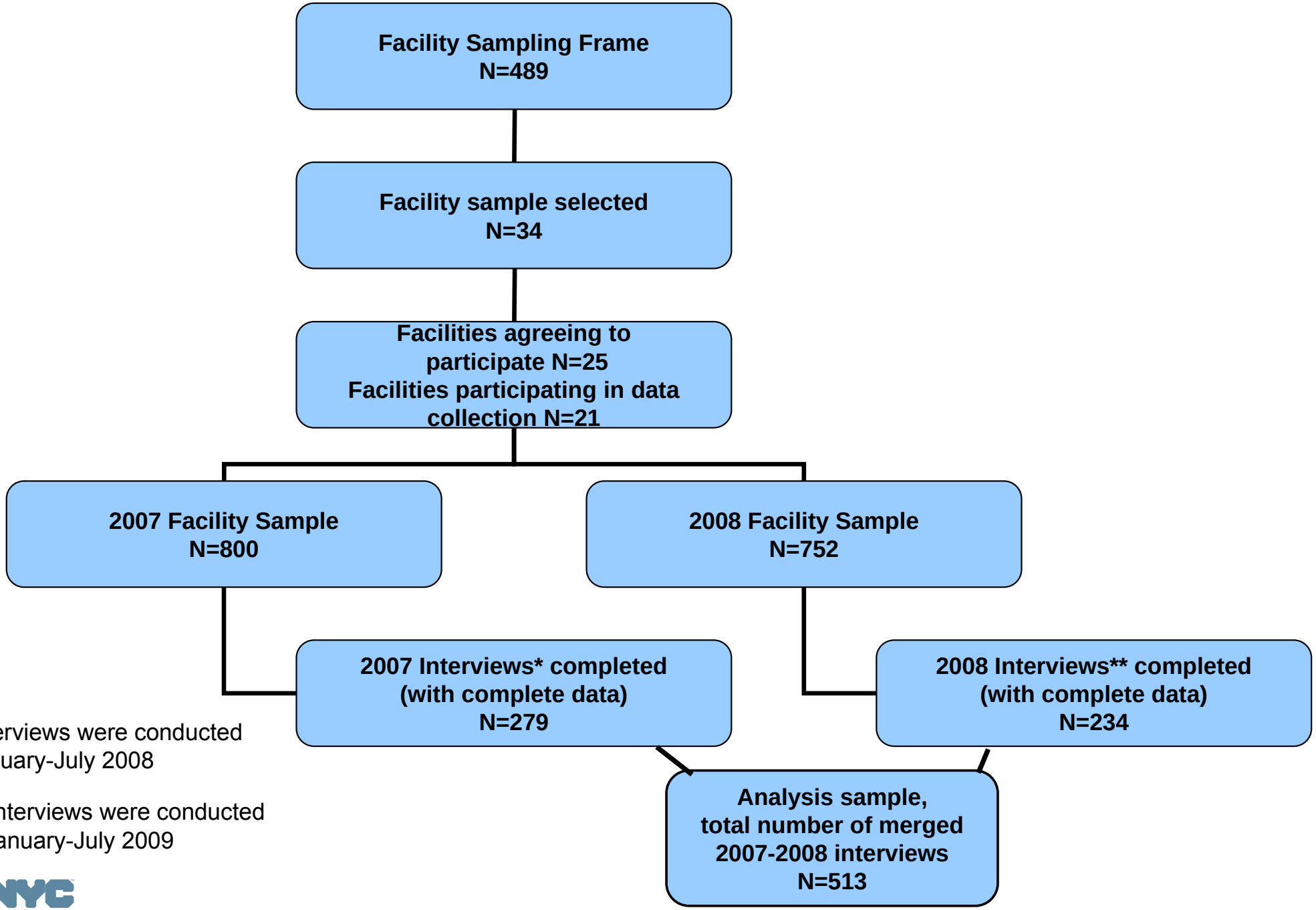
- Stage 3 – Patients seen by a Selected Provider
  - Randomly sampled
  - Eligibility
    - HIV-infected
    - ≥ 18 years of age
    - received HIV medical care at facility 1/1 – 4/30 in a given cycle year
  - Participation is voluntary and in NYC requires informed consent
  - Patient incentive for participation ($40 in transit cards)

Methods

Medical Monitoring Project (MMP)

- Data collection using 2 sources:
  - Computer-based structured interview, face-to-face by trained interviewer, conducted in private
  - Medical record abstractions
- Data collected:
  - Clinical status
  - Treatment adherence
  - Service utilization
  - HIV-related service needs
  - Health behaviors (health care utilization, sexual, drug use, prevention)

NYC 2007 and 2008 MMP Sample



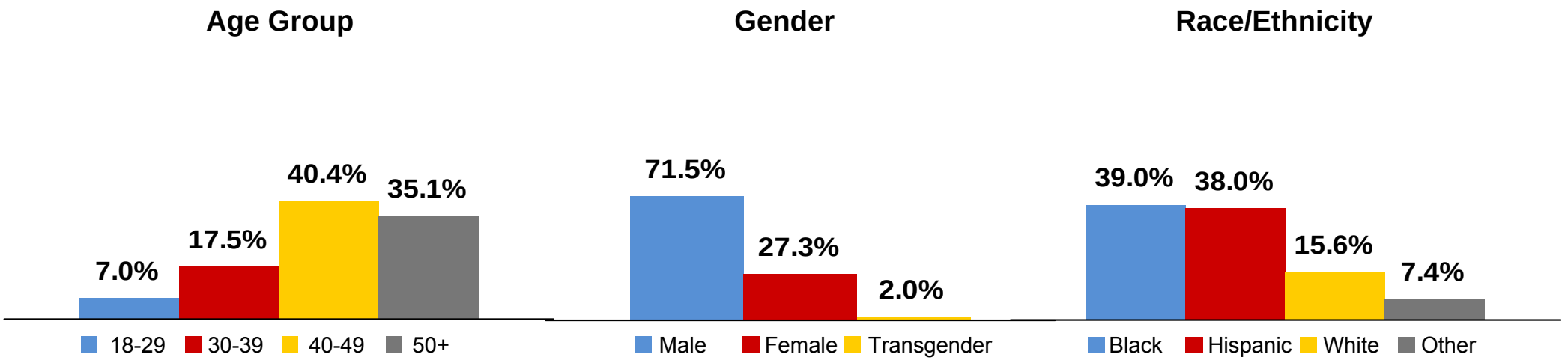
* Interviews were conducted January-July 2008

** Interviews were conducted January-July 2009

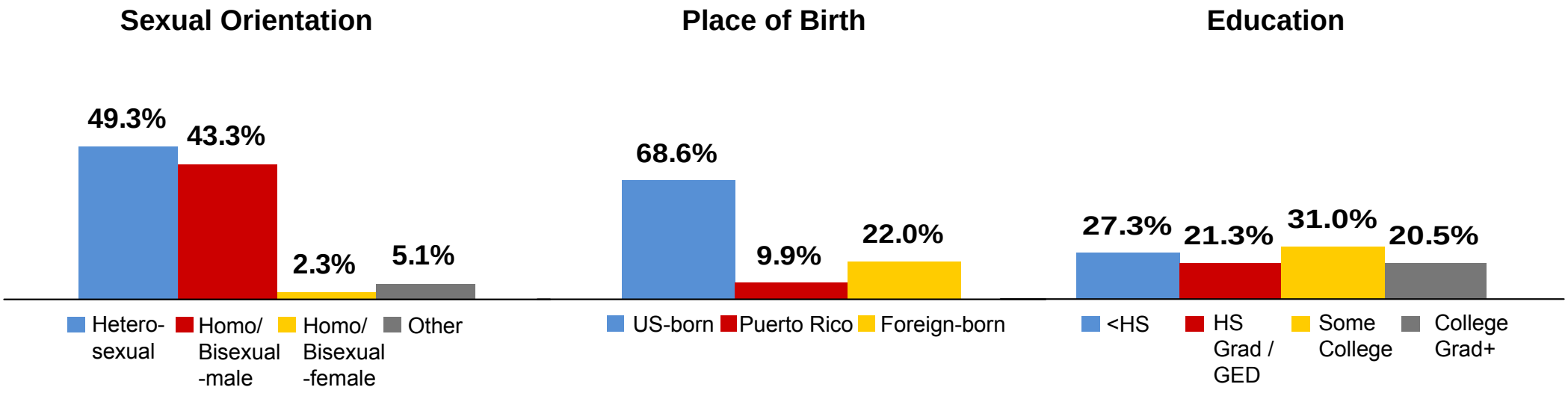
MMP Participants' Social Demographics

Participants' Social Demographics (N=513)

MMP, NYC, 2007/2008



(Mean age = 45.5 years, SD = 9.6, range 21-74)

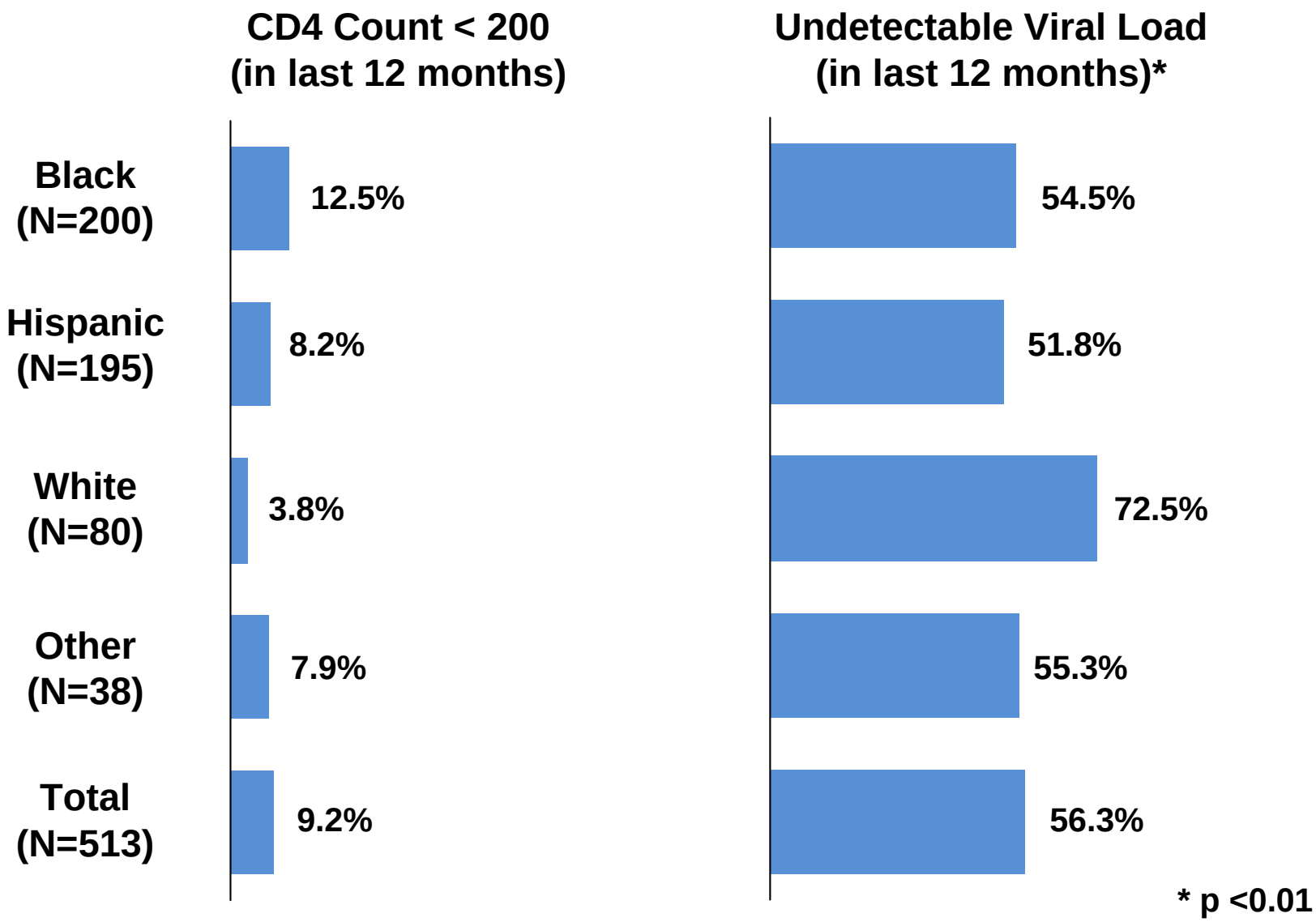


MMP Participants' Clinical Characteristics

Participants' Health Status by Race/Ethnicity

CD4 Count < 200 and Undetectable Viral Load (most recent in last 12 months)

MMP, NYC, 2007/2008



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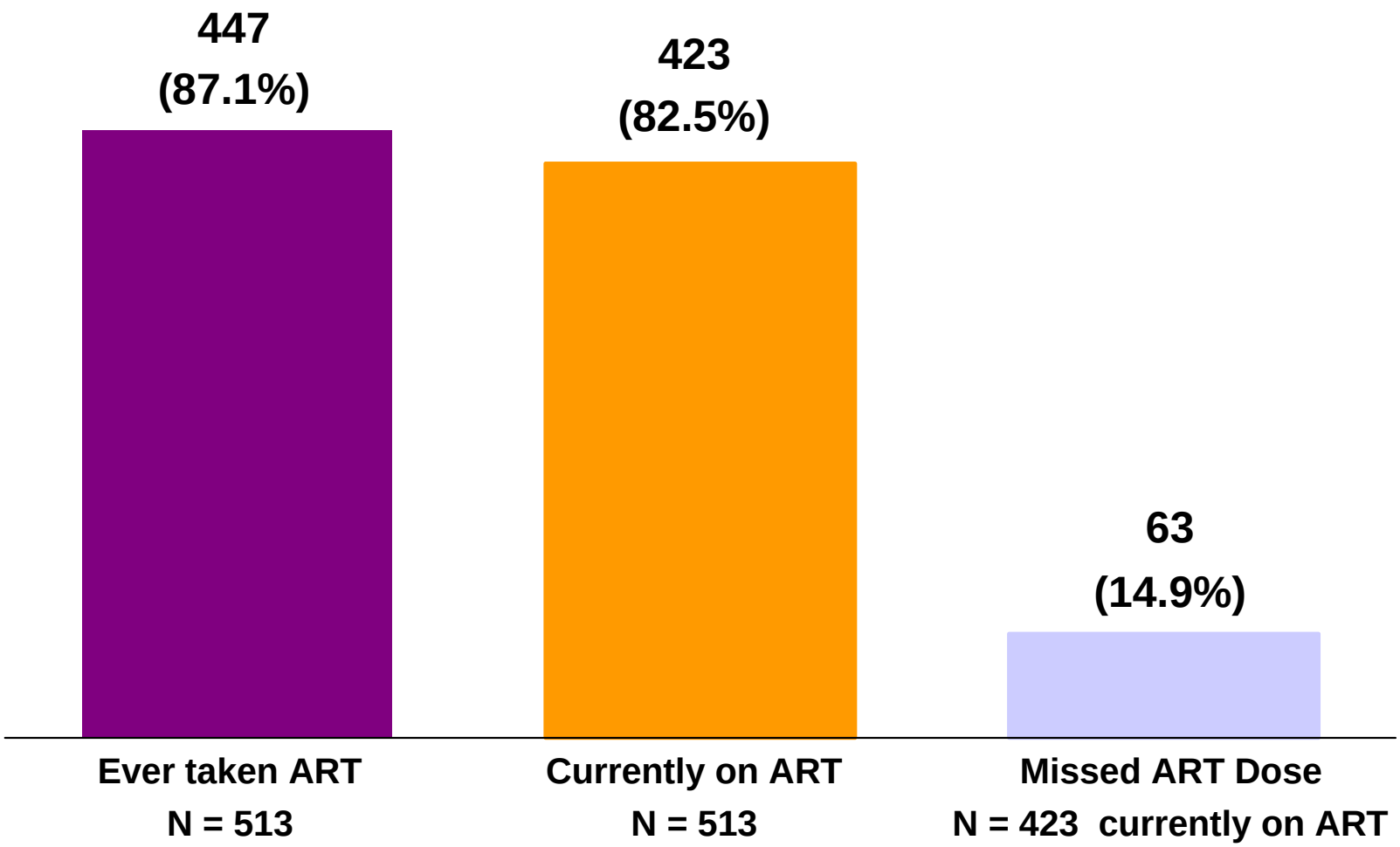
Antiretroviral Treatment (ART) and Adherence

MMP, NYC, 2007/2008



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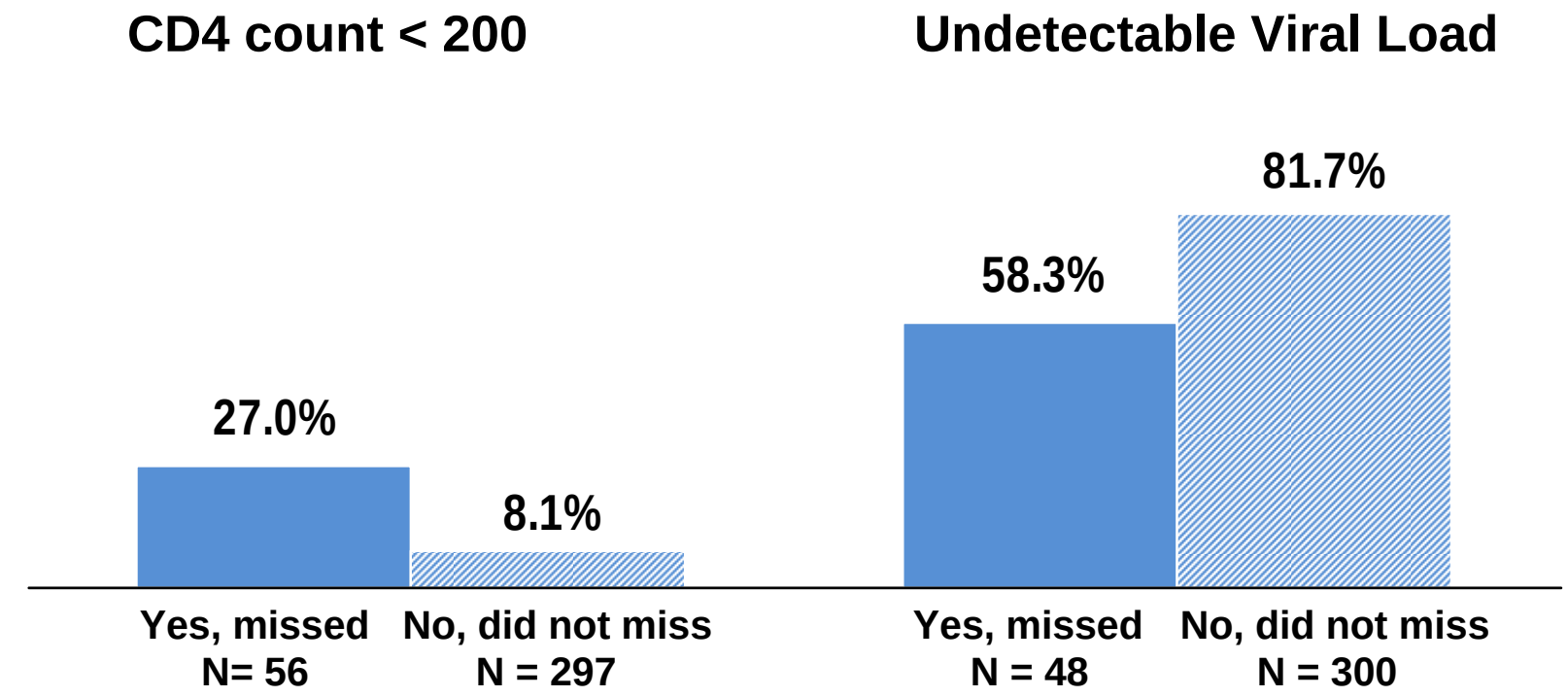
Recent CD4 Count < 200 and Undetectable Viral Load by Missed ART Dose

MMP, NYC, 2007/2008



(Of 353 who knew their CD4 count)

p <0.0001

(Of 348 who knew their viral load)

p <0.0001

Sexual Activity and Sexual Risk Behaviors

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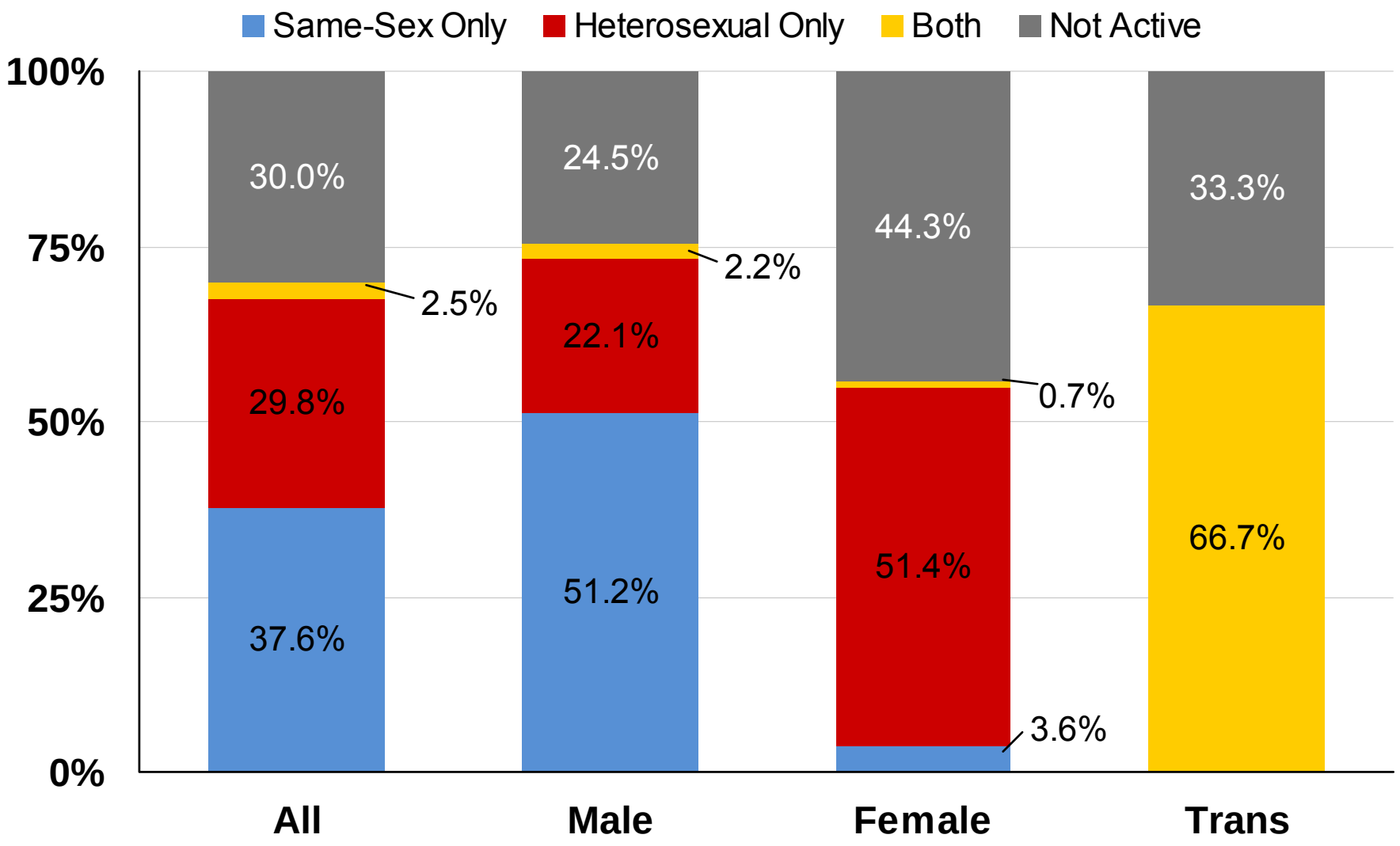
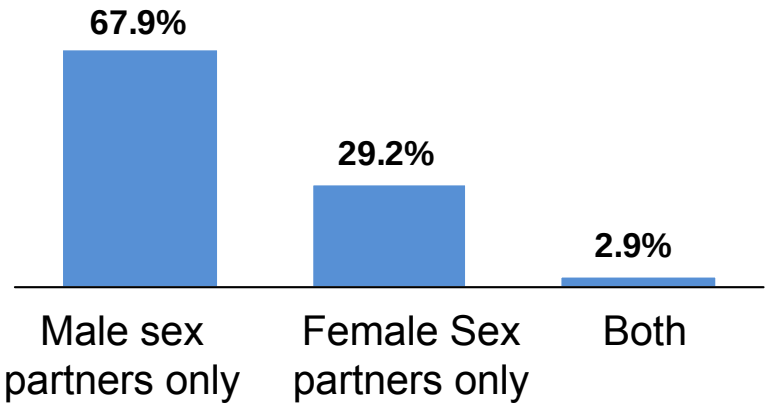
Sexually Active Status by Gender (Last 12 months)

MMP, NYC, 2007/2008

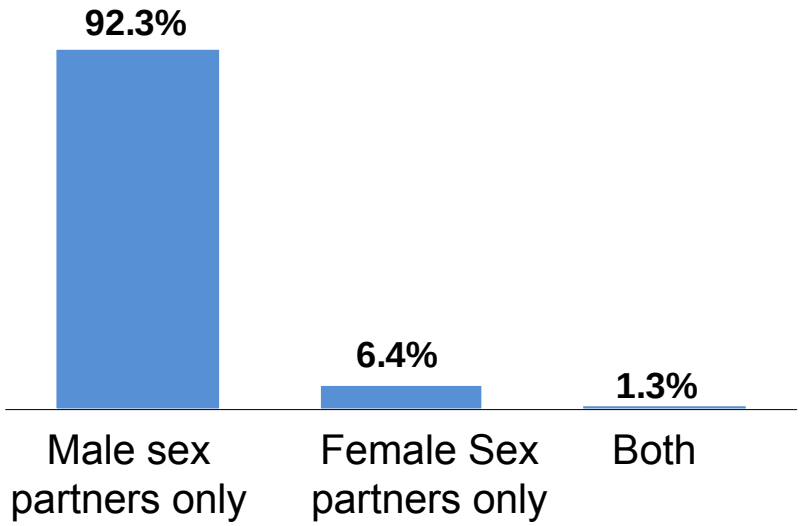


Partner Gender Among the Sexually Active (N=359) MMP, NYC, 2007/2008

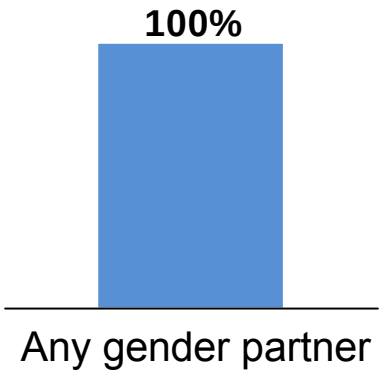
Male Participants (N = 277)



Female Participants (N = 78)



Transgender Participants (N=4)



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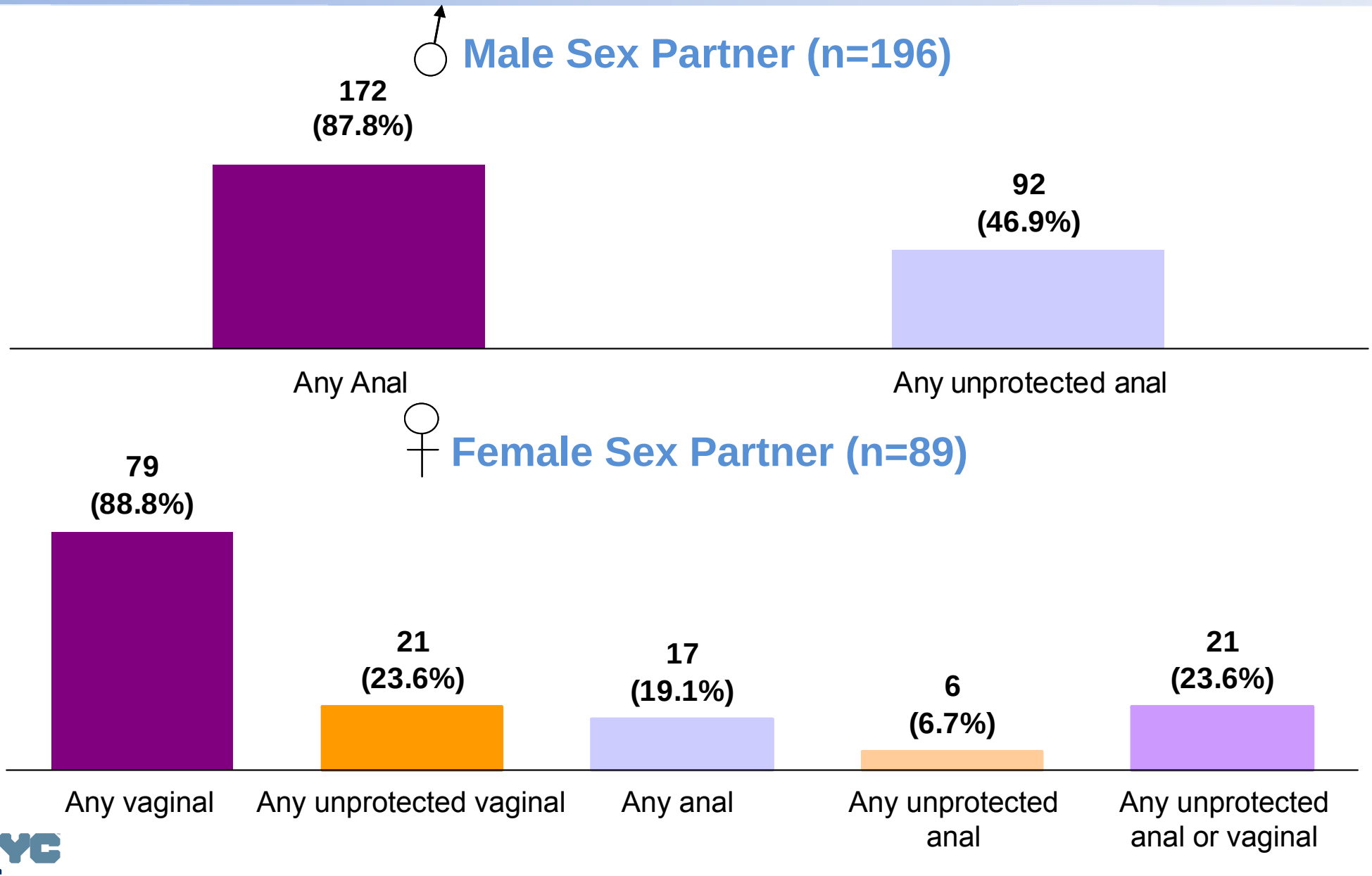
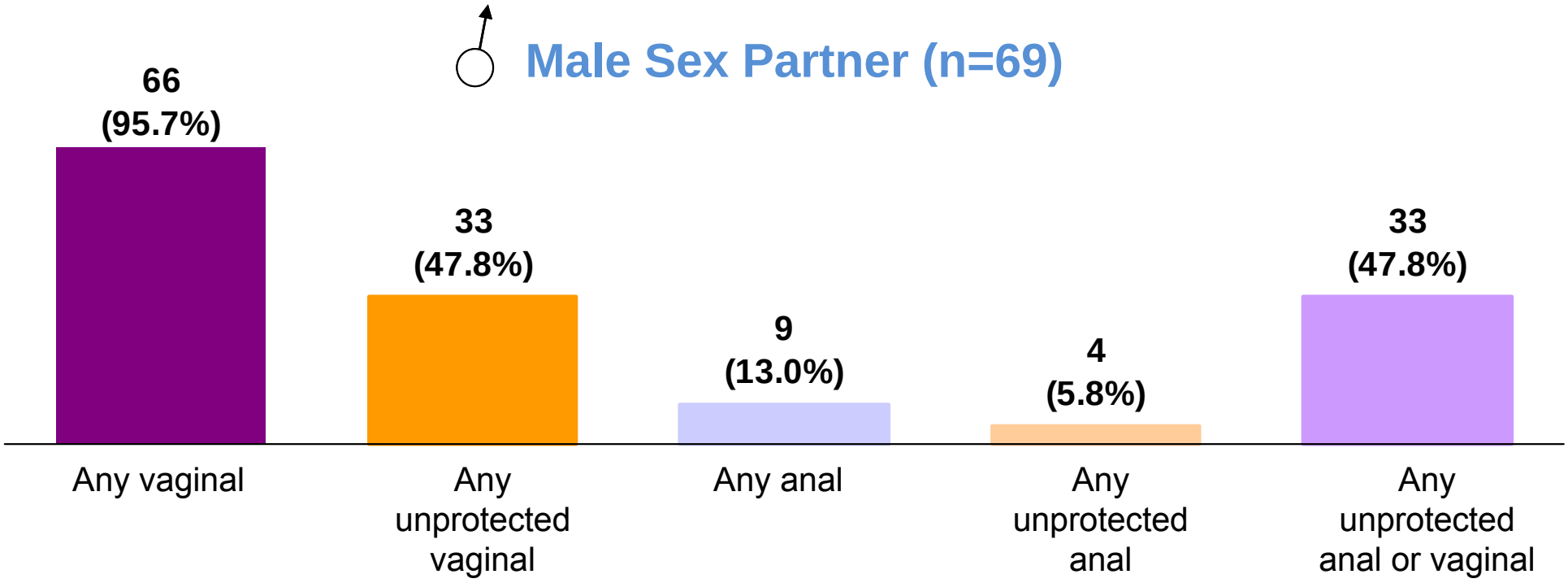
Sexual Behaviors among Sexually Active Male Participants by Partnership Gender (past 12 months)

MMP, NYC, 2007/2008



Sexual Behaviors among Sexually Active Female Participants by Partnership Gender (past 12 months)

MMP, NYC, 2007/2008



Sexual Behaviors with Last Sex Partner

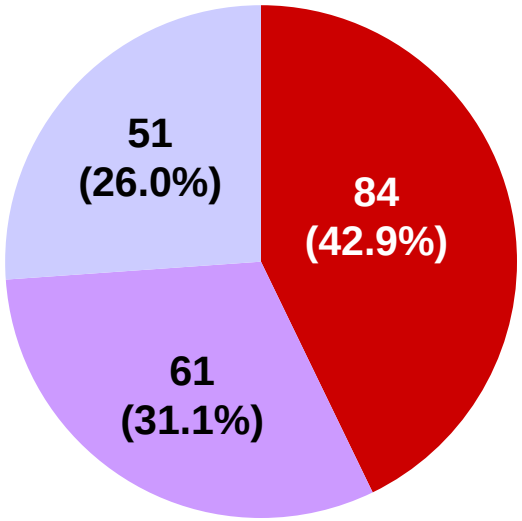
Male Participants' Sexual Activities

Unprotected Anal Sex (UAS) with Last Male Sex Partner by HIV Status of Partner

MMP, NYC, 2007/2008

Male Participants
Male Sex Partner*

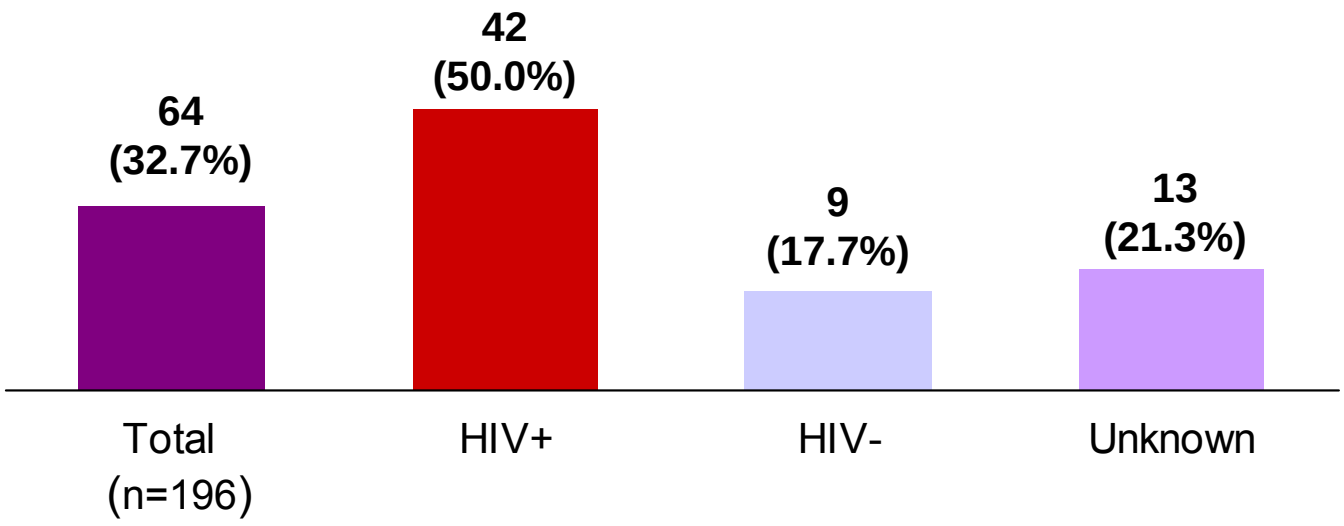
(n=196)



HIV Status of Last Sex Partner

Engaged in UAS with last sex partner

** p <0.0001*



HIV + HIV - Unknown

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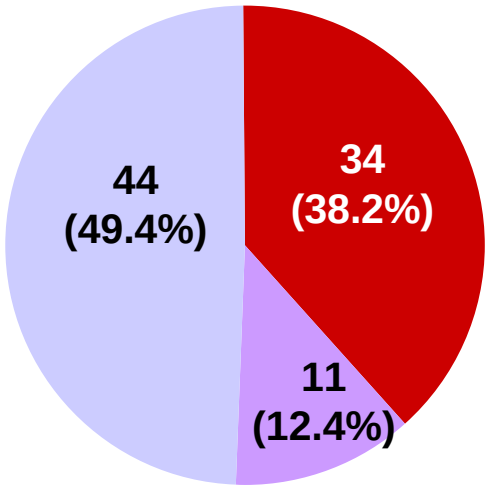
Male Participants' Sexual Activities

Unprotected Anal Sex (UAS) or Unprotected Vaginal Sex (UVS) with Last Female Sex Partner by HIV Status of Partner

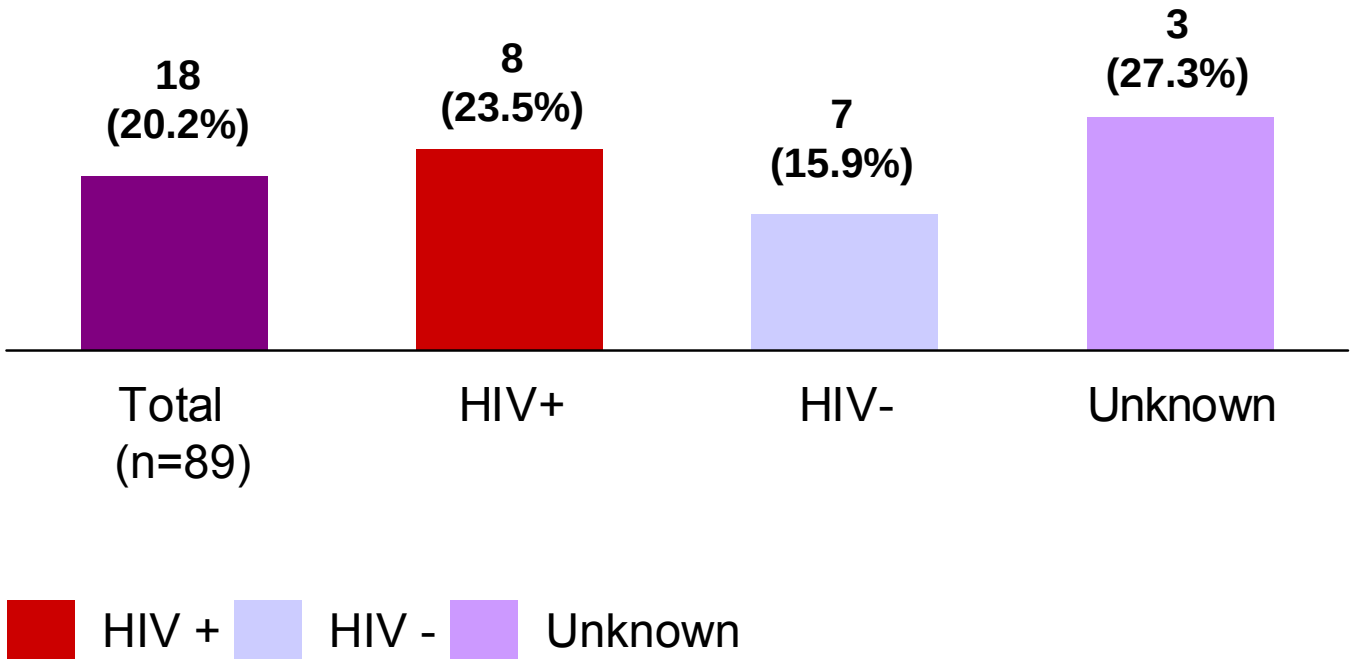
MMP, NYC, 2007/2008

Male Participants
Female Sex Partner
(n=89)



HIV Status of Last Sex Partner

Engaged in UAS or UVS with last sex partner



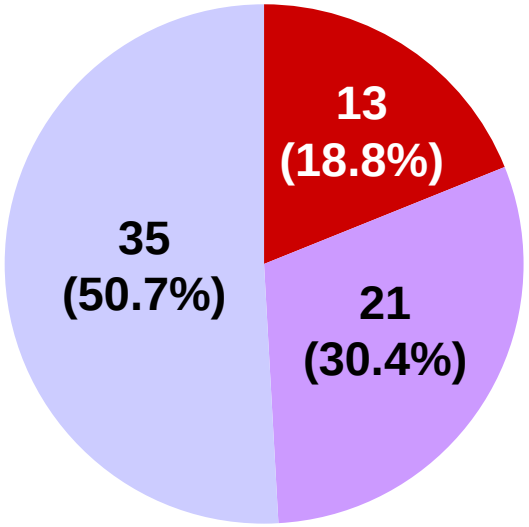
Female Participants' Sexual Activities

Unprotected Anal Sex (UAS) or Unprotected Vaginal Sex (UVS) with Last Male Sex Partner by HIV Status of Partner

MMP, NYC, 2007/2008

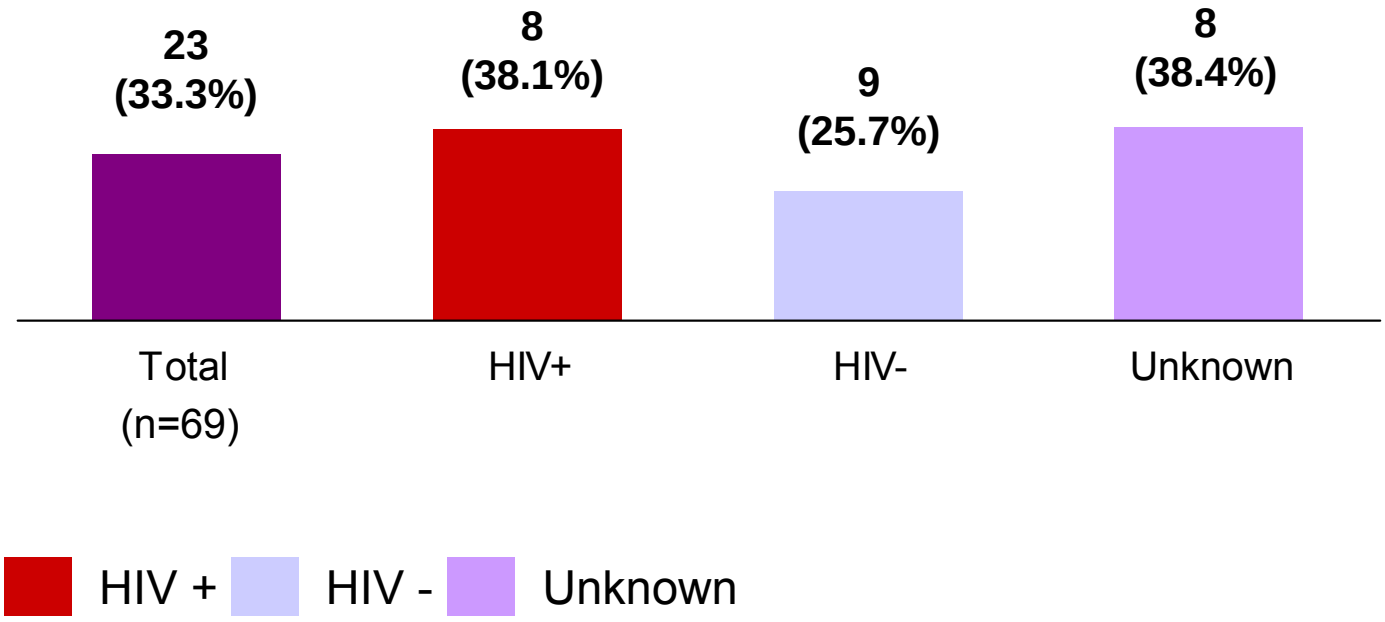
Female Participants
Male Sex Partner

(n=69)



HIV Status of Last Sex Partner

Engaged in UAS or UVS with last sex partner



Substance Use and Unprotected Sex

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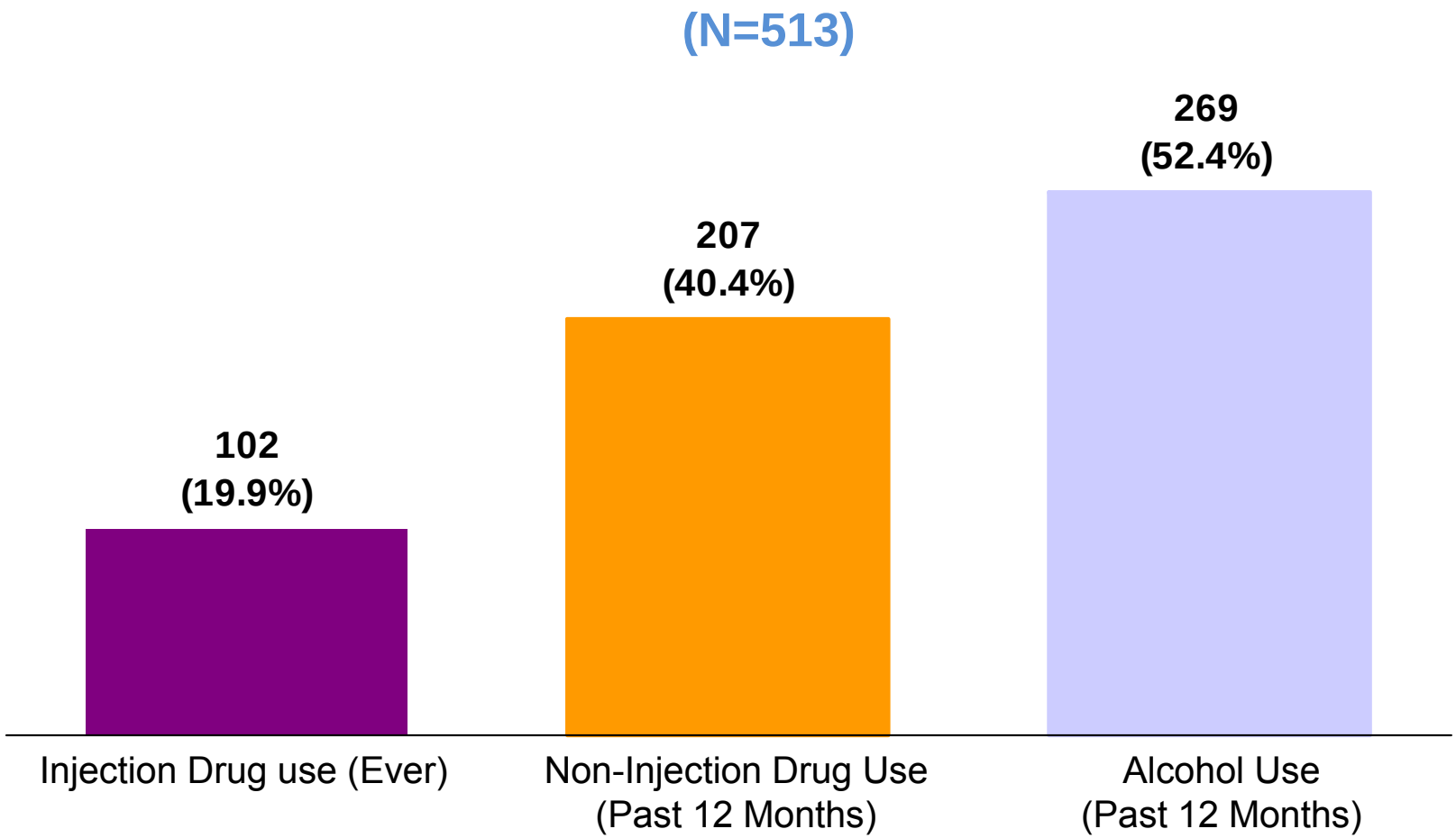
Drug and Alcohol Use

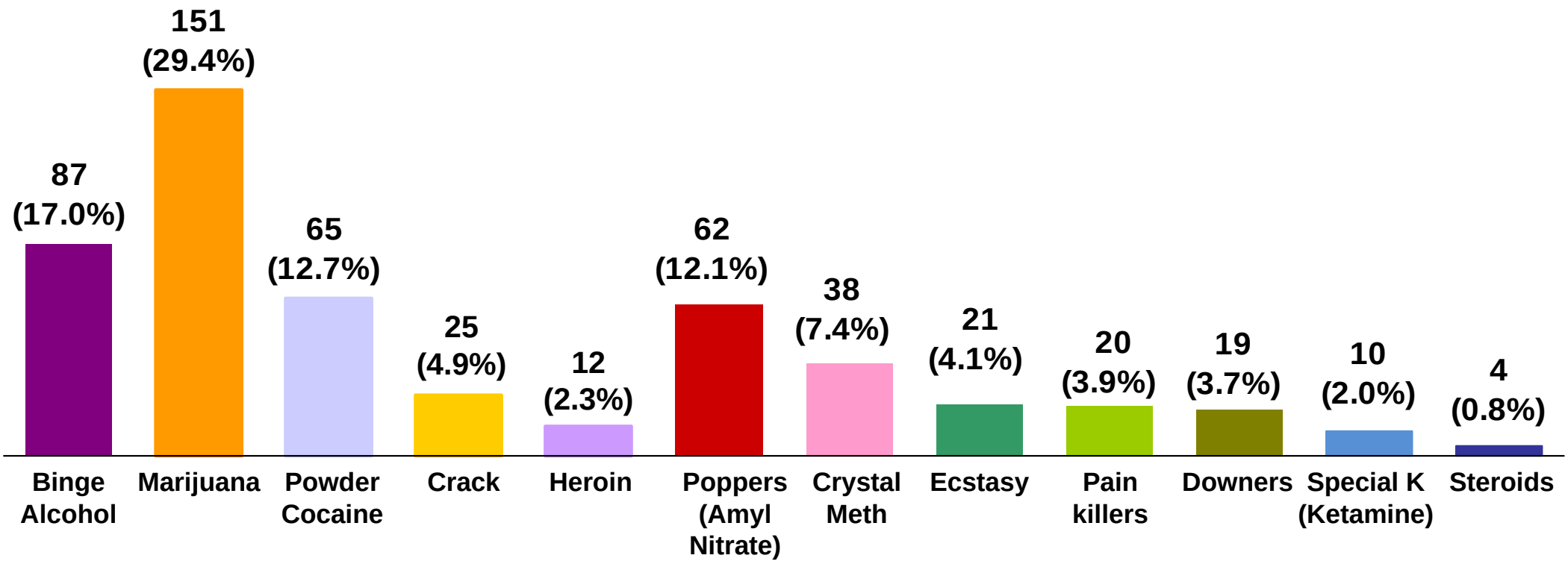
MMP, NYC, 2007/2008



Non-Injection Drug Use and Binge Alcohol Drinking

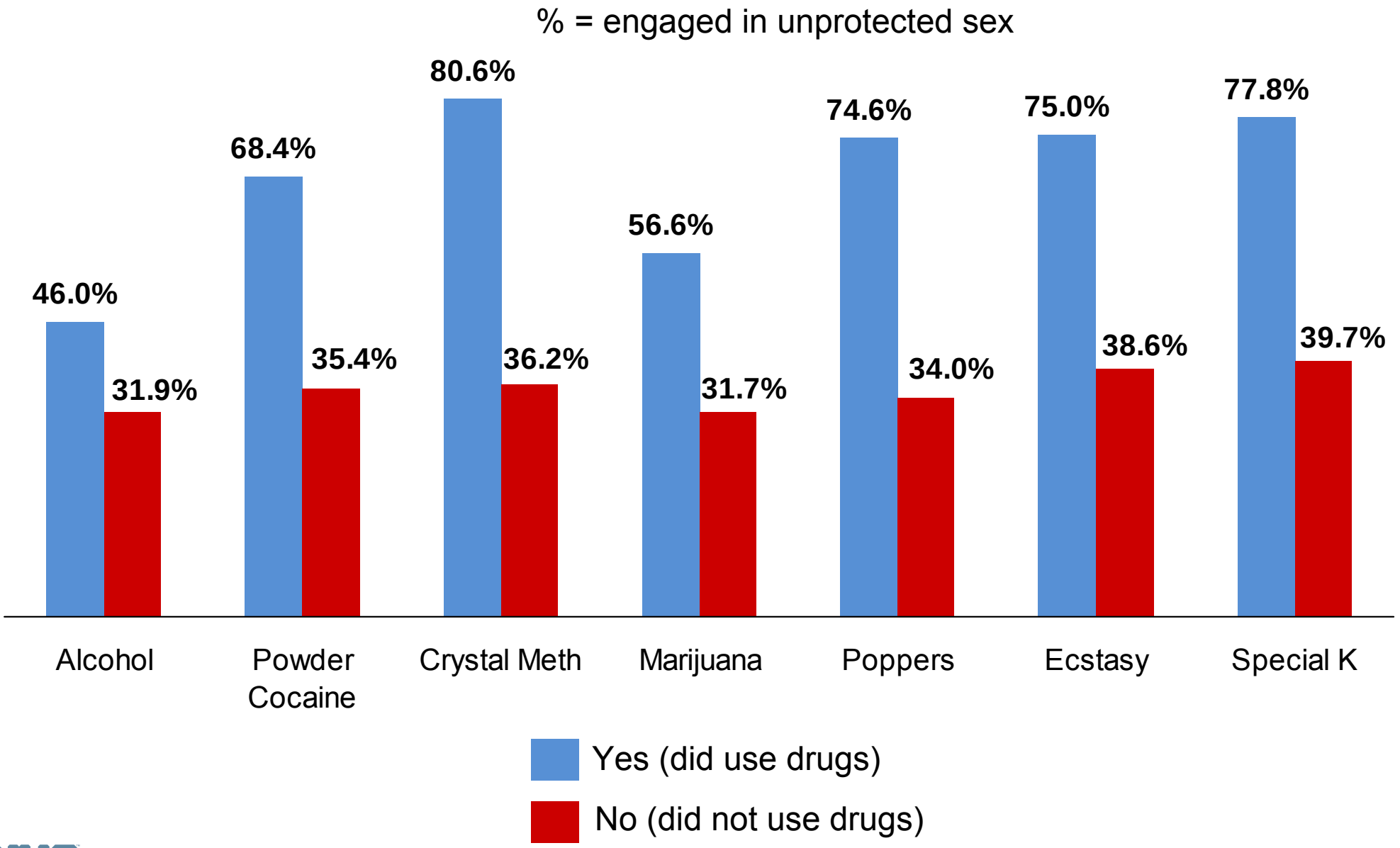
MMP, NYC, 2007/2008

(N=513)



Substance Use and Unprotected Sex (statistically significant)

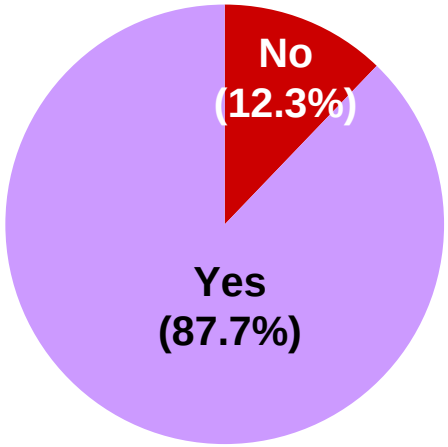
MMP, NYC, 2007/2008



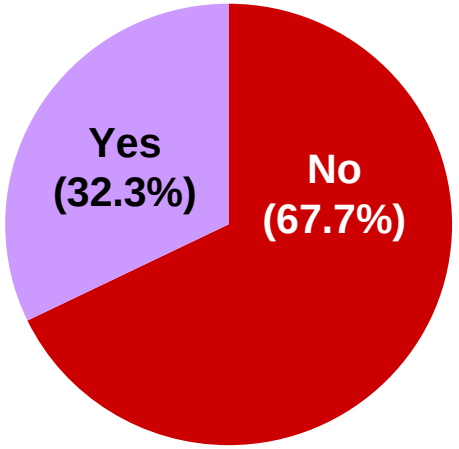
Exposure to Individual Counseling or Group Prevention

Sexually Active Participants and Exposure to Prevention in the Past 12 Months (N=359) (2007-2008 Sample)

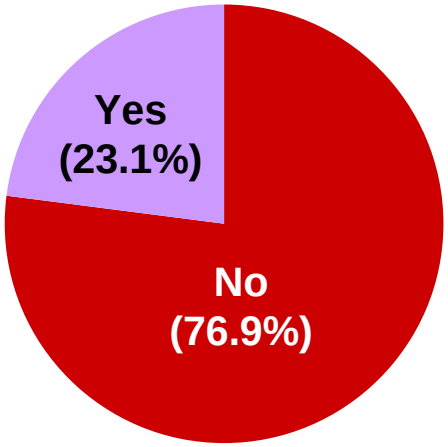
Received any free condoms



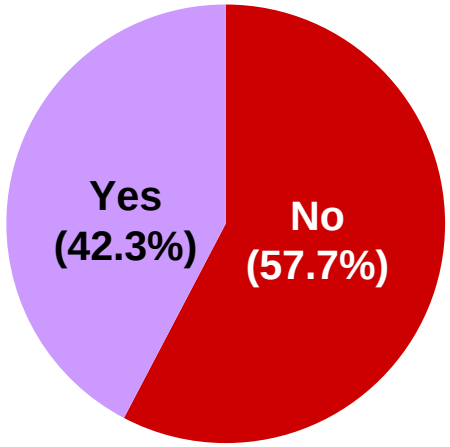
Talked with a counselor (one-on-one) about HIV prevention



Participated in group sessions to talk about HIV prevention



Participated in group sessions or talked with a counselor about HIV prevention



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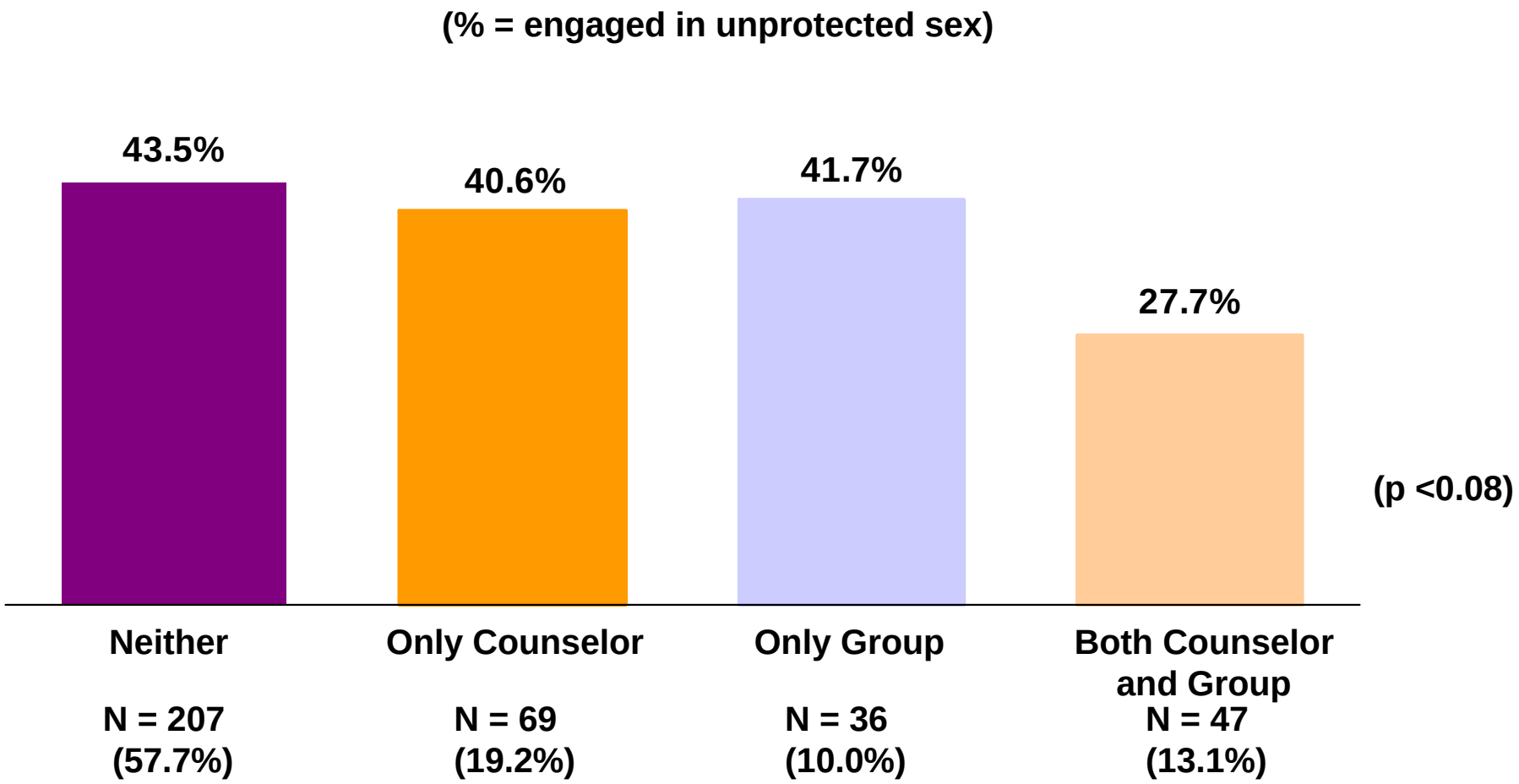
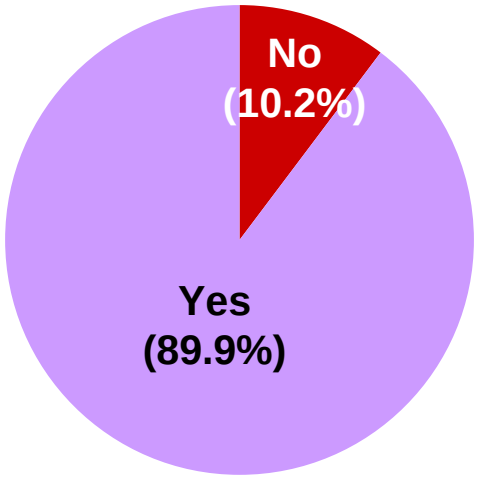
Exposure to Prevention in the Past 12 Months and Unprotected Vaginal or Anal Sex (2007-2008 Sexually Active Sample, N=359)



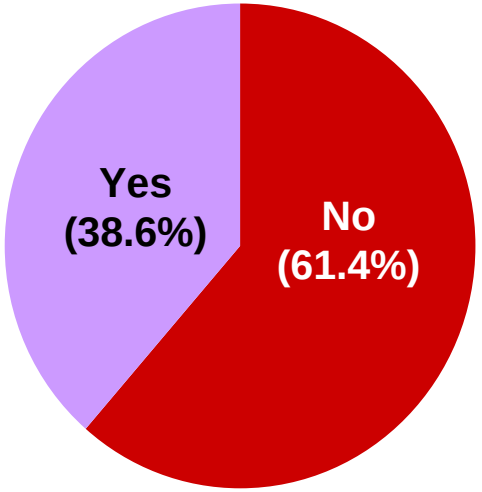
Exposure to Prevention and Unprotected Sex (2007 sample)

Sexually Active Participants and Exposure to Prevention (Past 12 Months (N=197))

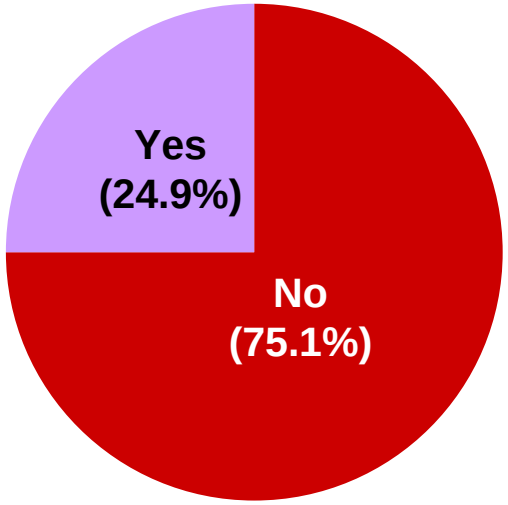
Received any free condoms



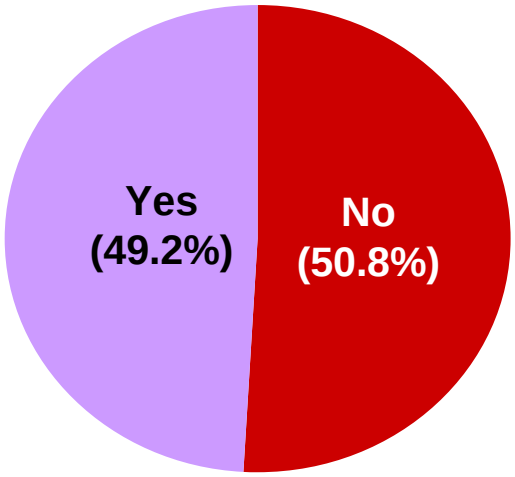
Talked with a counselor (one-on-one) about HIV prevention



Participated in group sessions to talk about HIV prevention



Counselor or group sessions



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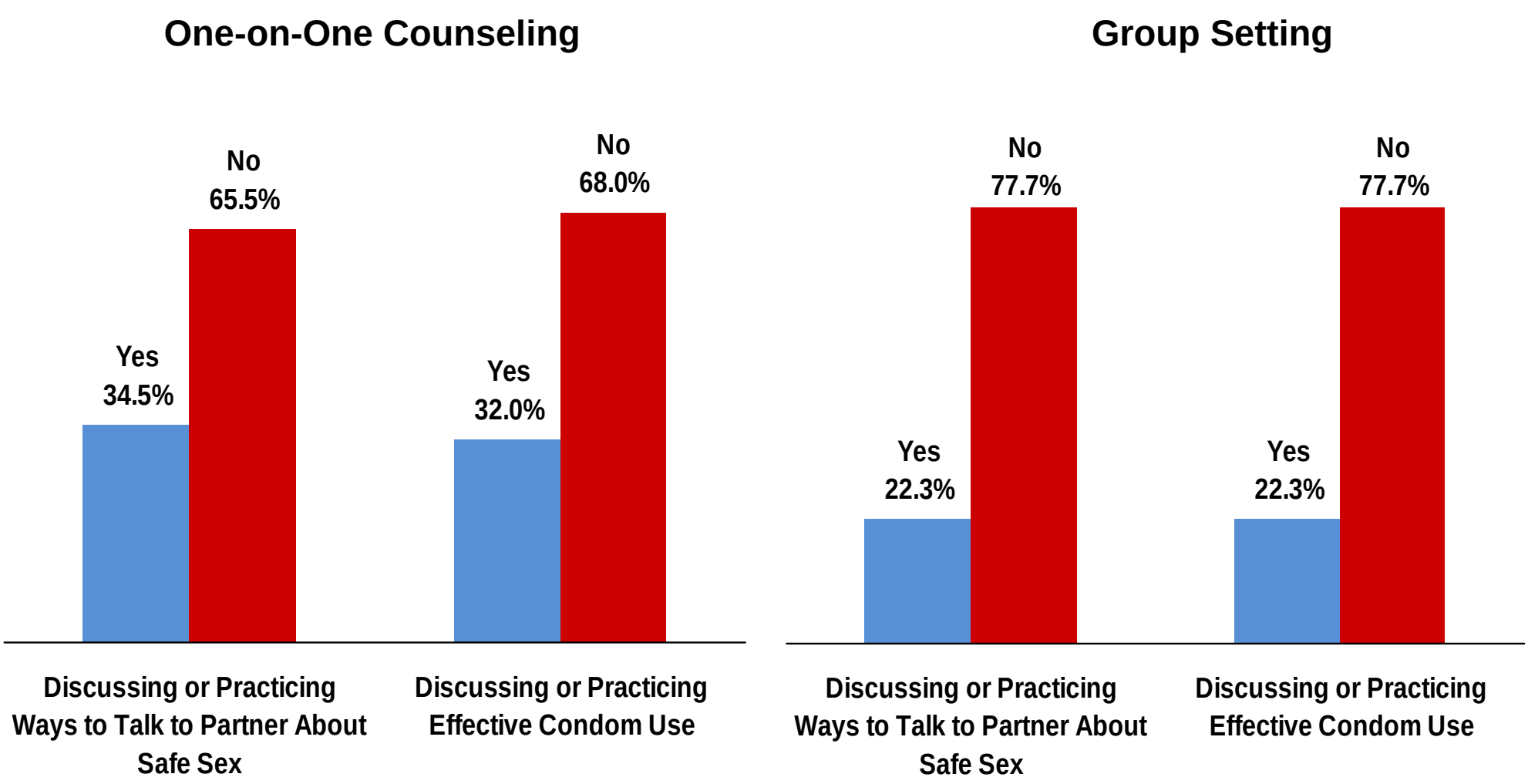
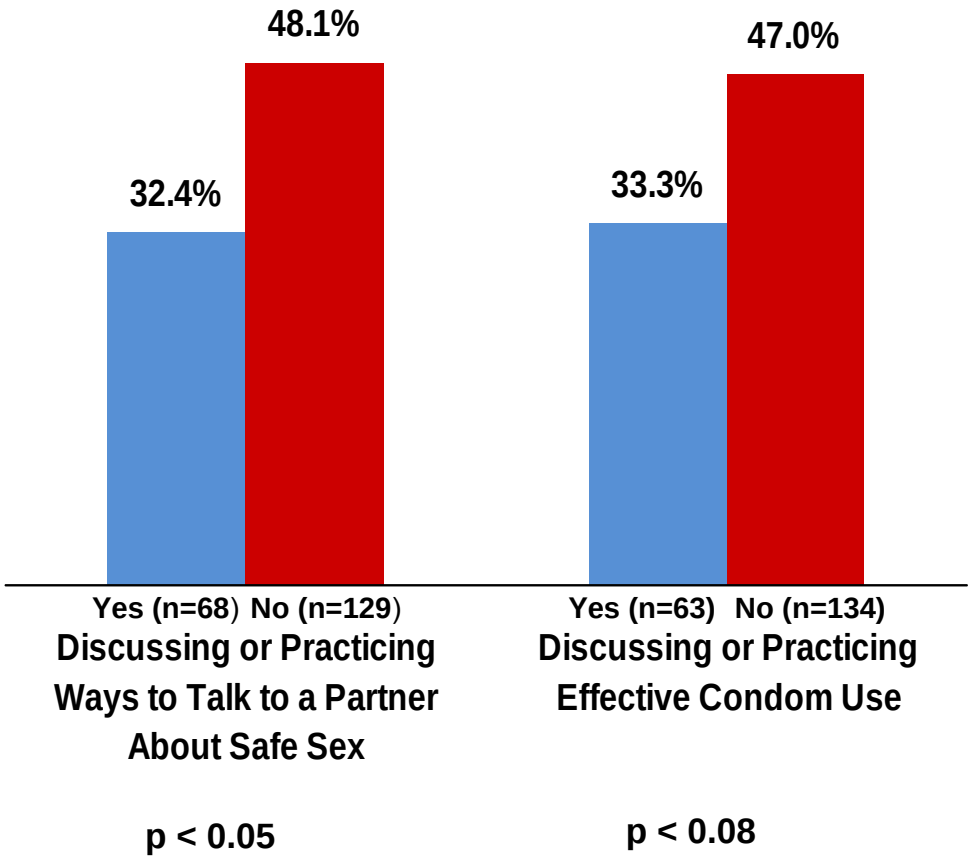
Sexually Active Participants and Prevention Content (one-on-one or group setting) (N=197)

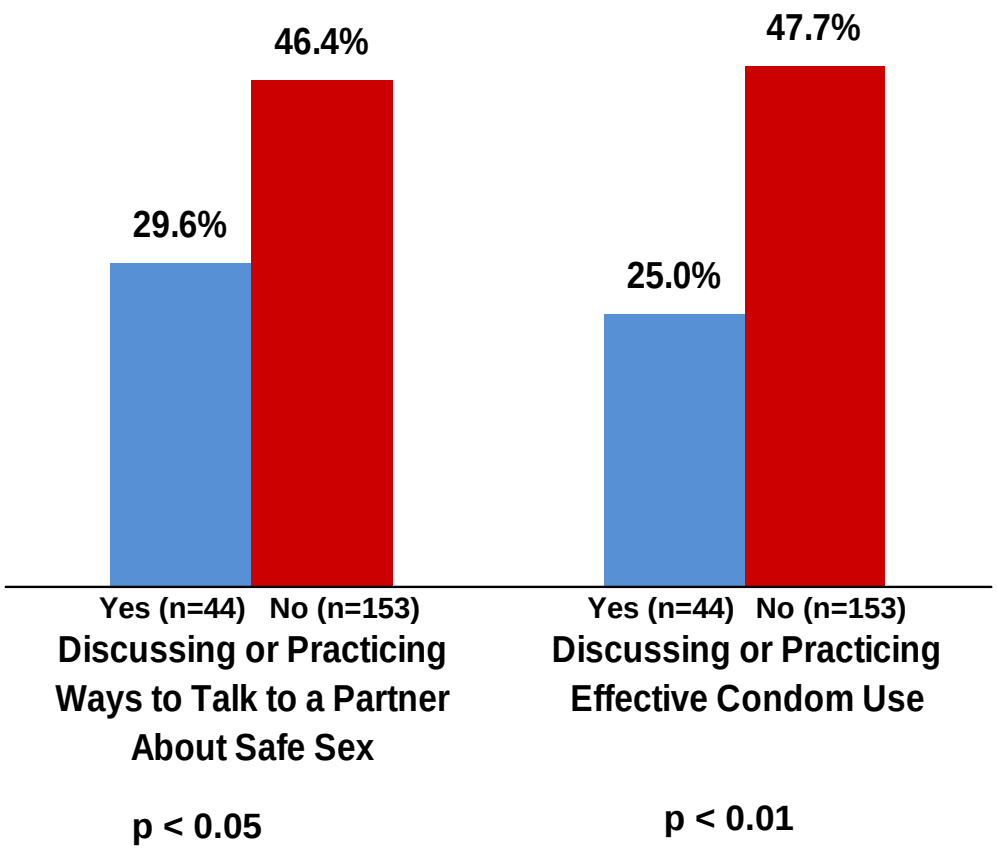


Engaging in Unprotected Sex and Exposure to Prevention (N=197)

Unprotected Sex by Prevention Exposure Through One-on-One Counseling



Unprotected Sex by Prevention Exposure Through a Group Session



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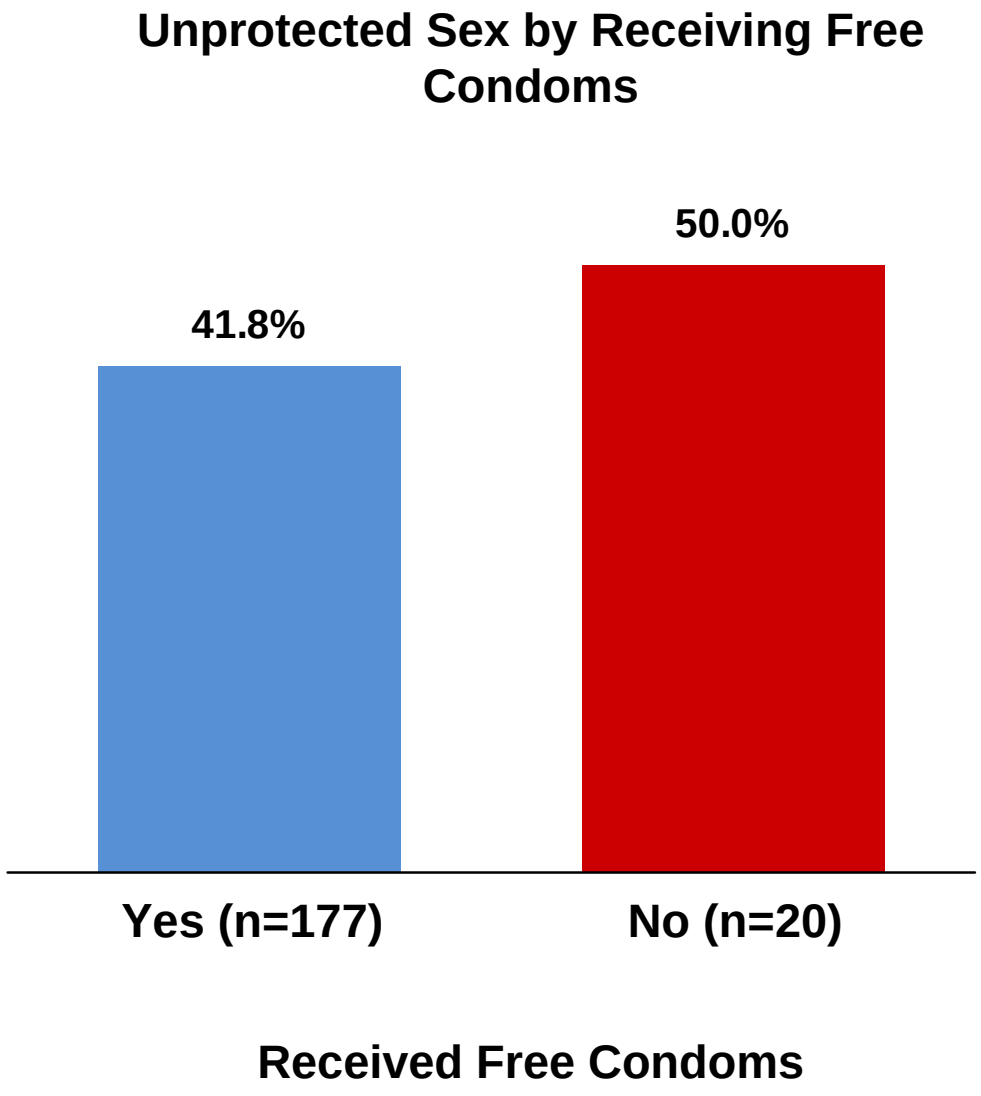
Engaging in Unprotected Sex and Receiving Free Condoms (N=197)



Summary 1 (potential transmission risk)

- The majority (70%) were sexually active
  - ~ half of sexually active MSM engaged in unprotected anal sex
  - ~ half of sexually active women and a quarter of sexually active men engaged in unprotected heterosexual sex
  - ~ half or greater reported last sex partners with unknown or negative HIV status
- Alcohol use and non-injection drug use common
- Alcohol and drug use (esp. stimulant drugs) increased the risk of unprotected sex

Summary 2 (prevention)

- Most had received free condoms
- ~ half of the sexually active had received individual or group counseling
- Those receiving both individual and group counseling tended to be less likely to engage in unprotected sex
- Receiving more specific interventions, e.g., practicing how to use condoms, was associated with a lower risk of unprotected sex (2007 sample)
- Those receiving free condoms (vs. those who did not) were not significantly less likely to have engaged in unprotected sex (2007 sample)
- MSM, but not those engaging in heterosexual sex, may have been more likely to have practiced “serosorting”

Summary 3 (medical intervention)

- HIV transmission efficiency may be decreased through lower viral loads as a consequence of adherence to ART regimens
- Promoting early use and adherence to ART may reduce HIV incidence

Conclusion

- There is substantial potential for the sexual transmission of HIV among HIV positives receiving care in NYC
- Prevention with positives is likely to require a spectrum of modalities (condom distribution, intensive individual or group interventions, alcohol and drug misuse treatment, and adherence to ART)
- Since this population is in care, HIV care settings could be used to implement interventions to prevent HIV transmission

References

CDC. HIV prevalence estimates—United States, 2006. *MMWR*. 2008;57(39):1073-1076.

New York City HIV/AIDS Annual Surveillance Statistics. New York: New York City Department of Health and Mental Hygiene, 2010. Update December 31, 2010. Accessed at http://www.nyc.gov/html/doh/html/ah/hivtables.shtml

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