Young Black Sexually Minoritized Men Living with HIV, Substance Use, and Syphilis Want Doxy-PEP

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KEY POINTS

- **YBSMM with active syphilis were interested in doxy-PEP**
- **Methamphetamine use was associated with doxy-PEP interest**
- **The relative risk of active syphilis among YBSMM with HIV was 2.88 times greater than those not living with HIV**
- **Methamphetamine use was associated with a 95% increased risk of syphilis acqusition**
- **We should prioritize YBSMM with HIV, a prior syphilis diagnosis, and methamphetamine use for doxy-PEP**

BACKGROUND

- Doxycycline post-exposure prophylaxis (doxy-PEP) offers a cheap and effective method for pharmacologic syphilis and chlamydia prevention among MSM.
- Doxy-PEP is underutilized by populations most in need.
- Young Black sexually minoritized men (YBSMM) in the United States continue to bear the brunt of new syphilis infections.
- This study examined factors associated with syphilis acquisition and doxy-PEP interest among an HIV status-neutral cohort of YBSMM.

METHODS

The Networks and Neighborhoods Phase 2 cohort included:

- YBSMM aged 16-34 years who identified as Black
- Assigned male at birth, who reported at least 1 sexual encounter with a cisgender man or transgender woman in the past 12 months
- Our primary outcome was defined as active syphilis with a titer ≥1:8
- Generalized linear models were fit to calculate unadjusted and adjusted RR between participants with and without active syphilis based on demographics, health factors, substance use, and doxy-PEP interest

RESULTS

468 participants were included in the analysis and 25.6% had active syphilis.

Table 1. Syphilis status by demographic characteristics

	Total (N=468)	Active Syphilis (n=120)	No Active Syphilis (n=348)	p-value
	N (%)	n (%)	n (%)	
SOCIO-DEMOGRAPHIC CHARACTERISTICS				
Age, mean (SD)	27.9 (SD 3.8)	28.7 (SD 3.6)	27.6 (SD 3.8)	<0.01*
Sexual orientation				
Gay/homosexual	294 (62.8%)	81 (67.5%)	213 (61.2%)	0.63
Bisexual	126 (26.9%)	27 (21.43%)	99 (28.45%)	
Straight/heterosexual	6 (1.3%)	1 (0.83%)	5 (1.4%)	
Other	42 (9.0%)	11 (9.2%)	31 (8.9%)	
Completed HS or Greater	431 (92.1%)	106 (88.3%)	325 (93.4%)	0.08
Annual income <$25,000	247 (53.5%)	67 (56.3%)	180 (53.5%)	0.47
Has health insurance	405 (87.7%)	108 (90.8%)	297 (86.6%)	0.23
HIV Status				
Positive	258 (55.1%)	98 (81.7%)	160 (46.0%)	<0.01*
Negative	210 (44.9%)	22 (18.3%)	188 (54.0%)	
Doxy-PEP				
Has taken doxy-PEP	36 (7.8%)	14 (11.7%)	22 (6.5%)	0.07
Has heard of doxy-PEP	94 (20.2%)	31 (25.8%)	63 (18.2%)	0.07
Interest in doxy-PEP	245 (59.9%)	77 (75.5%)	168 (54.7%)	<0.01*
SUBSTANCE USE LAST 12 MONTHS				
Alcohol (AUDIT)				
Abstainer	75 (16.0%)	23 (19.2%)	52 (14.9%)	0.63
Non-hazardous Use	261 (55.8%)	65 (54.2%)	196 (56.3%)	
Hazardous Use	92 (19.7%)	24 (20.0%)	68 (19.5%)	
Possible Use Disorder	40 (8.6%)	8 (6.7%)	32 (9.2%)	
Cannabis (CUDIT-R)				
Abstainer	55 (11.8%)	14 (11.9%)	41 (11.8%)	0.85
Non-hazardous Use	81 (17.4%)	18 (15.3%)	63 (18.1%)	
Hazardous Use	119 (25.5%)	53 (27.8%)	86 (24.7%)	
Possible Use Disorder	211 (45.3%)	53 (44.9%)	158 (45.4%)	
Other substance use				
Methamphetamine	63 (13.5%)	32 (26.7%)	31 (8.9%)	<0.01*
Cocaine	91 (19.4%)	27 (22.5%)	64 (18.4%)	0.33

* Indicates a p-value less than 0.05. ** Indicates a p-value less than 0.01

Table 2. Predictors of syphilis positivity

	Unadjusted		Adjusted	
	RR (95% CI)	p-value	RR (95% CI)	p-value
Age	1.07 (1.02-1.11)	<0.01*	1.00 (0.95-1.04)	0.84
Living with HIV	3.63 (2.37-5.55)	<0.01*	2.88 (1.83-4.53)	<0.01**
Doxy-PEP interest	2.06 (1.37-3.09)	<0.01*	1.55 (1.04-2.32)	0.03*
Methamphetamine use last 12 months	2.33 (1.72-3.16)	<0.01*	1.95 (1.43-2.66)	<0.01**

*** Indicates a p-value less than 0.05. ** Indicates a p-value less than 0.01. Adjusted model controls for age, HIV status, interest in doxy-PEP, and methamphetamine use**

CONCLUSION

- YBSMM who were older were more likely to have a syphilis diagnosis.
- YBSMM living with HIV were also more likely to have a syphilis diagnosis.
- Methamphetamine use was also a predictor of syphilis positivity.
- Men with a syphilis diagnosis were significantly more interested in doxy-PEP than men without a syphilis diagnosis.
- Given the relative cost of treating syphilis and other STIs to the *prevention* of syphilis, it would be prudent for public health departments across the United States to prioritize syphilis prevention among YBSMM.
- **Our study demonstrates that key groups of YBSMM who might benefit from doxy-PEP are interested in doxy-PEP.**

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