Factors Associated with PrEP Uptake, Persistence, and Adherence Among Incarcerated People in Zambia

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BACKGROUND

For justice-involved people, the times during and immediately after incarceration can be high-risk periods for HIV acquisition since these periods afford limited access/ adherence to effective HIV prevention. We report results from one of the first longitudinal studies to characterize PrEP use among justice-involved people in sub-Saharan Africa.

METHODS

- HIV-negative incarcerated persons were offered PrEP by the corrections health system and were then approached by study staff for participation.
- Consenting participants were followed for 12 months from incarceration through release into the community for PrEP outcomes, including uptake, persistence, and adherence.
- A randomly selected subset of participants on PrEP underwent urine tenofovir (TFV) screening for adherence.
- Descriptive statistics were used to summarize study outcomes and multivariable logistic regression to identify factors associated with PrEP uptake and PrEP persistence.

Table 1. Baseline Characteristics

	Initiated on PrEP N=326 (46.1%)	Declined PrEP N =380 (53.8%)	p-value	Overall (N=706)
Sex				
Male	310 (95.1%)	362 (95.3%)	1	672 (95.2%)
Female	16 (4.9%)	18 (4.7%)		34 (4.8%)
Age at enrollment				
Median [Min, Max]	27.0 [18.0, 52.0]	28.0 [18.0, 66.0]	0.04	27.0 [18.0, 66.0]
Facility				
Central Facility	133 (40.8%)	222 (58.4%)	<0.001	355 (50.3%)
Open Air Facility	73 (22.4%)	44 (11.6%)		117 (16.6%)
Remand 1	23 (7.1%)	6 (1.6%)		29 (4.1%)
Remand 2	97 (29.8%)	108 (28.4%)		205 (29.0%)
Incarcerated Type				
Remandee	127 (39.0%)	207 (54.5%)	<0.001	334 (47.3%)
Sentenced	199 (61.0%)	172 (45.3%)		371 (52.5%)
Prior Incarceration				
No	305 (93.6%)	357 (93.9%)	1	662 (93.8%)
Yes	14 (4.3%)	17 (4.5%)		31 (4.4%)
Previously heard of PrEP				
No	64 (19.6%)	145 (38.2%)	<0.001	209 (29.6%)
Yes	259 (79.4%)	234 (61.6%)		493 (69.8%)
Self-Reported diagnosis of STI				
No	293 (90.0%)	367 (96.3%)	0.002	660 (93.5%)
Yes	30 (9.2%)	13 (3.4%)		43 (6.1%)

Note: Any column that does not sum to 'N' reflects missing data"

Initial uptake of PrEP among a cohort of incarcerated people in Zambia was high. While one-third persisted on PrEP in the community, adherence was low and demonstrates the need for differentiated prevention services in this group.

RESULTS

Follow-Up

- 87% (612/706) had at least one follow-up visit and 65% (459/706) had at least one follow-up visit in the community (**Figure 1**)

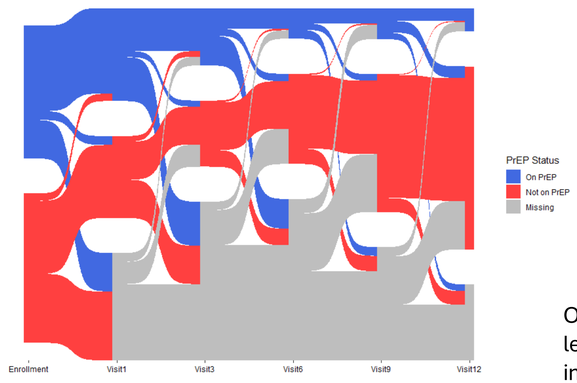


Figure 1. Follow-up and PrEP status over 12-month follow-up

Uptake

Adjusting for age and sex, participants were significantly more likely to initiate PrEP at enrollment if they:

- Were sentenced (OR: 1.7, 95% CI:1.2-2.3) vs awaiting trial (remandee)
- Had previously heard of PrEP (OR: 2.4, 95% CI:1.7-3.4)
- Had greater worry about acquiring HIV in prison (OR 1.2, 95% CI:1.1-1.4)
- Self-reported an STI in the previous 3 months (OR 2.6, 95% CI 1.3-5.5)
- Reported having had engaged in condomless sex (OR 1.5, 95% CI 1.0-2.3)

Of those who declined PrEP at enrollment and had at least one follow-up visit 13% (43/323), chose to initiate PrEP later (**Figure 1**)

Table 2. Factors Associated with Community PrEP Collection

	Community PrEP N=67 (33.8%)	No Community PrEP N=131 (66.1%)	Overall (N=198)	OR (95% CI)	aOR (95% CI)
Sex					
Male	60 (89.6%)	123 (93.9%)	183 (92.4%)	1.79 (0.60-5.22)	1.03 (0.28-3.80)
Female	7 (10.4%)	8 (6.1%)	15 (7.6%)		
Age					
Median [Min, Max]	28.0 [18.0-49.0]	27.0 [18.0-51]	28.0 [18.0-51.0]	1.02 (0.98-1.07)	1.04 (0.99-1.10)
Incarcerated Type					
Sentenced	51 (76.1%)	73 (55.7%)	124 (62.6%)	2.53 (1.33-5.01)	**2.43 (1.18-5.24)**
Remandee	16 (23.9%)	58 (44.3%)	74 (37.4%)		
Sexually active in past 3 months					
Yes	49 (73.1%)	115 (87.8%)	164 (82.8%)	0.38 (0.18-0.80)	**0.38 (0.16-0.90)**
No	18 (26.9%)	16 (12.2%)	34 (17.2%)		
Compared to your peers, how do you see your risk of getting HIV?					
Neutral or less	56 (83.6%)	60 (45.8%)	116 (58.6%)	6.02 (2.99-13.07)	**5.78 (2.79-12.94)**
More or much more	11 (16.4%)	71 (54.2%)	82 (41.4%)		

Persistence

Of N=198 initiated on PrEP at enrollment and with at least one follow-up in the community, 34% (67/198) had at least one PrEP refill in the community (**Table 2**).

- Median time from enrollment to community follow-up was 8.9 months (7.5 months with community PrEP collection, 9.5 months without, p<0.001)

Adherence

- 61 (24%) of 252 urine tenofovir (TFV) screening tests at follow-up of self-reported PrEP persisters indicated adequate adherence and adherence decreased over time (p-trend <0.001) (Figure 2)
- Self-reported PrEP adherence had a positive predictive value of 0.69 (95% CI:0.58-0.78) and negative predictive value of 0.98 (95% CI:0.94-0.99) compared to urine TFV.

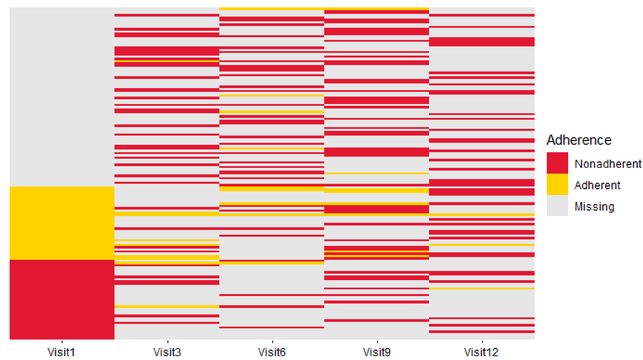


Figure 2. Results of urine tenofovir screening tests at follow-up among adherence subcohort

CONCLUSIONS

Results suggest high PrEP uptake among incarcerated people in Zambia, particularly among those who were sentenced, had heard of PrEP before, had greater worry about acquiring HIIV in prison and reported an STI or engaging in condomless sex. Sentenced persons and persons perceiving their risk of HIV acquisition to be lower than their peers were more likely to report community PrEP collection, while those who were sexually active were less likely to report community PrEP collection. PrEP adherence adjudicated objectively was low (24%).

ADDITIONAL KEY INFORMATION

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