

HIV incidence and associated risk factors among adolescent men who have sex with men and transgender women enrolled in a PrEP cohort study in Brazil

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Background

Adolescent men who have sex with men (aMSM) and transgender women (aTGW) are disproportionately affected by the HIV epidemic mainly due to structural and behavioral factors, and face barriers to accessing HIV prevention and care services.

Goal

We aimed to analyze factors associated with incident HIV infection among aMSM and aTGW enrolled in PrEP1519 study.

Methods

- PrEP1519 is a demonstration cohort study of daily TDF/FTC as PrEP among aMSM and aTGW aged 15-19 years old (yo);
- It is ongoing in three Brazilian capital cities (i.e., Belo Horizonte, Salvador and São Paulo);
- Eligible are those HIV uninfected at baseline, at high risk of HIV, and no risk of kidney or liver damage;
- In this analysis, we included participants enrolled in PrEP, who had at least one PrEP dispensation and two visits to the PrEP clinics;
- Study visits occurred at baseline, weeks 4, 12, and then quarterly from February/2019 to October/2021;
- Demographic and sociobehavioural data were collected by a questionnaire;
- In each visit participants were tested with an HIV rapid test. All HIV infections were confirmed by serology;
- Participants who had PrEP pills and tested negative for HIV were right-censored at the maximum follow-up date at 96 weeks;
- Cox regression was conducted to model the time to seroconversion of PrEP users. Results are summarized using adjusted hazard ratios (aHR), controlled by covariates PrEP medication possession ratio (MPR), gender identity, and years of schooling.

Results

- During the follow-up, 1,043 adolescents enrolled in the PrEP clinics initiated PrEP (89.7%) or other HIV prevention methods (10.3%) but in the follow-up visits decided to take PrEP at least once.
- Most MSM (91.9%), 18-19 yo (80.8%), self-identified as black/brown (69.7%).
- HIV incidence rate was 1.7 (95%CI: 0.8-2.6) per 100 person-years.
- Risk factors associated to HIV incidence:
 - Self-reported sexually transmitted infections;
 - PrEP initiation during the COVID-19 pandemic;
 - Commercial sex in the last 3 months.
- The estimated incidence for aTGW was lower than for aMSM, but the 95%CI was wide and imprecise.
- Indicators of sexual behavior were not associated with the HIV incidence.

Conclusions

- The estimated HIV incidence was lower when compared to adult MSM and TGW non-PrEP users in other Brazilian studies, but higher compared to the rates among adults in PrEP studies.
- Close follow-up and monitoring of adolescents in PrEP programs is needed, especially for those with the vulnerability factors identified in this study.

Table 1. Characteristics of the aMSM and aTGW in PrEP1519 study, Feb/2019 – Oct/2021, Brazil.

Variable		n	%
Study arm initially enrolled	PrEP	936	89.7
	Non-PrEP	107	10.3
Gender identity	aMSM	959	91.9
	aTGW	84	8.1
Years of education	≥ 12	478	45.8
	1 – 11	565	54.2
Demand creation strategy	Virtual	491	47.1
	Non-virtual	551	52.9
Relationship status	In a relationship	370	36.2
	Single	651	63.8
Living with	Parents and other relatives	842	81.8
	Partner, friends and others	187	18.2
Participation at an LGBTQIA+ NGO	No	913	88.9
	Yes	114	11.1
Chemsex (last 3 months)	No	487	95.9
	Yes	21	4.1
Commercial sex (last 3 months)	No	872	85.2
	Yes	152	14.8
Drug use made it difficult to use condoms (last 3 months)	Never	413	83.1
	Sometimes	84	16.9
Use of alcohol made it difficult to use condoms (last 3 months)	Never	544	76.1
	Sometimes	171	23.9
Discrimination due to sexual orientation or gender identity (lifetime)	No	593	65.0
	Yes	319	35.0
Physical violence due to sexual orientation or gender identity (last 6 months)	No	966	94.1
	Yes	61	5.9
HIV risk perception	Low	324	31.8
	Middle	243	23.8
	High	452	44.4
Number of casual partners (last 3 months)	0 - 1	478	45.8
	2 - 5	417	40.0
	≥ 6	148	14.2
Condom use with steady partner	Always	95	19.8
	Never/sometimes	384	80.2
Condom use with casual partner	Always	253	36.5
	Never/sometimes	441	63.5
Condomless sex (last 6 months)	No	172	16.5
	Yes	871	83.5
Self-reports of STI (last 12 months)	No	718	78.7
	Yes	194	21.3
PrEP initiation during the COVID-19 pandemic	No	356	34.1
	Yes	687	65.9
MPR	< 1	854	81.9
	≥ 1	189	18.1

Table 2. HIV incidence among aMSM and aTGW in PrEP1519 study, Feb/2019 – Oct/2021, Brazil.

	HIV incidence rate (100 person-year)			
	N	n	Rate	95% CI
Overall	1,043	16	1.7	[0.8 – 2.6]
aMSM	959	15	1.8	[0.9 – 2.7]
aTGW	84	1	1.3	[-1.3 – 3.8]

Table 3. Multivariate analysis of factors associated to HIV incidence among aMSM and aTGW in PrEP1519 study, Feb/2019 – Oct/2021, Brazil.

Variables		Hazard ratio*	95% CI	P-value
Self-reports of STI (last 12 months)	No	1		
	Yes	3.02	[1.06 – 8.56]	0.038
PrEP initiation during the COVID-19 pandemic	No	1		
	Yes	3.89	[1.13 – 13.4]	0.032
Commercial sex (last 3 months)	No	1		
	Yes	3.47	[1.14 – 10.58]	0.028

* Model adjusted by MPR, gender identity and years of schooling.

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