

Background

To track HIV care, treatment and transmission potential, UNAIDS has set targets for the proportion of those testing HIV-positive who are aware of their positive status (90%), are on anti-retroviral therapy (ART, 90% of those who know their status, 81% of all HIV-positive) and are virally suppressed (90% of those on ART, 73% of all HIV-positive).

MSM/TG in sub-Saharan Africa experience a high burden of HIV, but population-based assessments of their engagement in the HIV care cascade are lacking.

Even where same sex behaviour is not criminalised, as in South Africa, social stigma and harassment and limitations to the availability of sensitive and friendly healthcare services could create barriers to HIV diagnosis, engagement in care and treatment.

Study aim

To inform HIV care and prevention programming, we aimed to estimate, among a representative sample of MSM/TG in Johannesburg: 1) HIV prevalence; 2) care engagement; 3) factors associated with viral suppression amongst those HIV-positive.

Methods

301 MSM/TG were recruited in 2017 via respondent driven sampling (RDS) in Johannesburg. Eligibility criteria were male gender (current or assigned at birth), sex with a man in the previous 12 months and resident in Johannesburg.

Participants completed a self-administered survey detailing socio-demographics, sexual behaviour, alcohol and substance use, depression (PHQ-9), HIV testing, referral, linkage to care, ever and current ART usage. They received HIV pre/post-test counselling and gave a blood sample for HIV rapid-testing, ELISA-confirmed if positive (Alere Combo and Advanced Quality HIV tests, back-up Alere Determine), and viral load testing (GeneXpert).

All analyses were RDS-II weighted. We calculated an age-standardised HIV prevalence ratio compared to men in South Africa as a whole (1) and estimated the proportions of HIV-positive MSM/TG who were virally suppressed (<200 viral copies/ml), knew their status, and were on ART, as well as where 'breaks' in the care cascade occurred. We used RDS-II weighted logistic regression to identify factors associated with viral suppression, retaining in a final model variables with $p < 0.1$ in crude associations and age.

Results

RDS recruitment

There were 9 seed participants, though the majority of participants came from 5 seeds, from up to 23 recruitment waves. There were challenges in recruiting White and Asian participants. HIV and viral suppression estimates converged reasonably.

Socio-demographics

Mean age was 26 years, 63% were born in Johannesburg, 95% were Black African, 50% resided in Soweto, the majority (69%) had completed high school and were unemployed (59%). 70% identified as gay and 27% as bisexual. 9% identified as transgender, 4% as female and 8% as other.

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Table 1: HIV prevalence amongst MSM/TG in Johannesburg compared to men in South Africa

	MSM/TG Johannesburg		Men in South Africa (1)		Prevalence Ratio per Age strata
	Proportional Age Distribution	HIV prevalence RDS-II weighted (95% CI)	Proportional Age Distribution	HIV prevalence	
18-19 years	0.10	6.8 (0.0-16.6)	0.13	0.7*	9.7
20-24 years	0.38	24 (8.7-39.3)	0.13	5.1	4.7
25-29 years	0.23	45.7 (26.2-65.3)	0.12	17.3	2.6
30-34 years	0.19	57.3 (35.8-78.7)	0.11	25.6	2.2
35-39 years	0.05	42.5 (4.7-80.2)	0.10	28.8	1.5
40+ years	0.06	80.2 (39.4-100.0)	0.41	11.1	2.7
			Age-standardised prevalence ratio:		2.91

* for 15-19 year-olds

HIV prevalence

37.5%, 95% CI 28.2-46.9%, (118/300 testing). The age-standardised prevalence ratio compared to men in South Africa as estimated in 2012 was 2.91, Table 1.

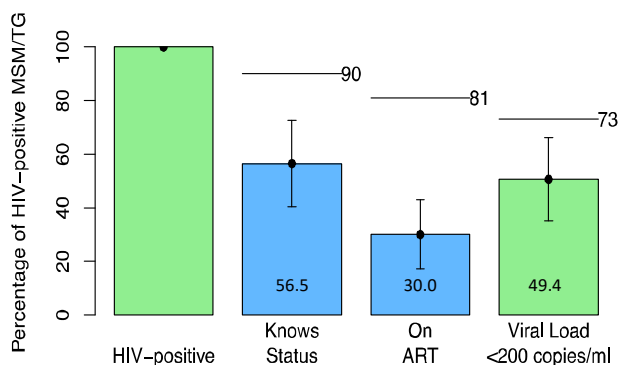
Engagement in care

Viral suppression amongst HIV-positive MSM/TG was 49.4%, 95% CI 33.8-65.0%, (64/118). Of those HIV-positive, 76 reported knowing their status, (56%, 95% CI 40.4-72.6%) and 39 reported currently taking ART (30%, 95% CI 17.1-43.0%) and while of these 32/39 were virally suppressed, there were an additional 32 HIV-positive participants who were virally suppressed but did not report knowing their status and/or current ART usage.

Satisfaction with HIV Care

75.6% attended HIV care at public clinics and 18.1% MSM-specific clinics. 89.3% were satisfied with their last clinic's privacy and 91.5% with the respect they were shown.

Figure 1: The HIV Care Cascade among MSM/TG in Johannesburg, compared to UNAIDS 90-90-90 targets, n=300



Breaks in the Cascade, viral suppression and mean viral load

A large proportion of HIV-positive men did not report being aware of their status (43.5%) and among these 29.7% were virally suppressed, Table 2. A significant proportion reported they were not referred to care on diagnosis (9.2%) or had not started ART (10.0%).

Table 2: Breaks at which HIV-positive MSM/TG 'drop' from the care cascade and associated viral suppression by these strata

HIV-Positive Individuals 'Dropping' from the Care Cascade	n*	% of HIV-Positive MSM, (95% CI)	% with viral load <200 copies/ml
HIV positive	118		49.4 (33.8-65.0)
Unsuppressed viral load (all HIV-positive)	62		
Unaware that they are HIV positive	42	43.5 (47.4-59.6)	29.7 (10.0-49.4)
Not referred to a healthcare clinic*	12	9.2 (0.4-18.0)	53.7 (8.8-98.6)
Referred but never received HIV care*	12	10.0 (0.2-19.8)	48 (3.5-92.4)
Received care but never started ART	13	4.3 (2.5-6.2)	40.9 (1.3-80.6)
Started ART but stopped it	7	2.5 (0.2-4.9)	90.9 (74.1-100.0)
Current ART but unsuppressed viral load	7	4.6 (0.0-12.6)	0

All %'s and means are RDS-II weighted

*Some participants reported no referral but attending for care.

Associations with viral suppression amongst MSM/TG testing HIV-positive

Viral suppression (<200 copies/ml) was associated with neighbourhood, each year of age (adjusted odds ratio=1.09, 95% CI 1.00-1.18), with use of a substance (other than alcohol and tobacco) in the last month (aOR=2.98, 95% CI 1.01-8.86), and with buying sex from a man in the last month, (aOR=13.51, 95% CI 1.66-109.78), adjusted for each other.

There was little evidence for associations with socio-demographic characteristics other than age, with gender and sexuality, depression, alcohol use or other sexual behaviours.

Conclusions

HIV prevalence among MSM/TG in Johannesburg is very high, and there is an urgent need to reach MSM at a young age with effective HIV prevention options.

The proportion of HIV-positive MSM/TG who were virally suppressed is similar to that in the South African population overall (45%, 95% CI 41-46%, (2)) but falls well short of the UNAIDS target of 73%. Knowledge of status and ART usage were lower (compared to 86% and 56% among people living with HIV nationally), but might have been under-reported. Support for MSM/TG in Johannesburg to HIV test, engage in care, access and adhere to ART is required, particularly to improve the proportion diagnosed, referred and treated and especially among younger MSM/TG. It is encouraging that MSM/TG reported satisfaction with services once engaged in care.

A higher than expected proportion of virally suppressed MSM/TG did not report being currently on ART. Discrepancies between self-reported cascade indicators and biological measures have been found in other surveys and may be attributable to misunderstandings from healthcare interactions and interpretation of survey questions, as well as social desirability reporting biases(3). Messages around treatment, viral load testing and viral suppression should be carefully communicated.

(1)Shisana O, Rehle T, Simbayi LC, Zuma K, Jooste S, Zungu N, et al. South Africa National HIV Prevalence, Incidence, and Behaviour Survey. 2012. South Africa: Human Sciences Research Council; 2014. (2)UNAIDS Data 2017. Geneva: UNAIDS; 2017. (3)Mooney AC, Campbell CK, Rathagana MJ, Grignon JS, Mazibuko S, Agnew E, et al. Beyond Social Desirability Bias: Investigating Inconsistencies in Self-Reported HIV Testing and Treatment Behaviors Among HIV-Positive Adults in North West Province, South Africa. AIDS Behav. 2018.