High Reported Adherence But Low PrEP Levels among Kenyan Men Who Have Sex with Men

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BACKGROUND

- Gay, bisexual, and other men who have sex with men (MSM) are at high risk of HIV acquisition in Kenya, where pre-exposure prophylaxis (PrEP) has recently become available.
- Our aim was to evaluate factors associated with tenofovir diphosphate (TFV-DP) detection and protective TFV-DP levels in a cohort of high-risk, HIV-negative MSM in Kisumu, Kenya.

METHODS

- HIV-negative MSM ≥18 years were enrolled if they reported recent unprotected anal sex, ≥3 male sex partners, STI, transactional sex, or injection drug use.
- All participants were offered PrEP at baseline, with adherence counselling at each visit.
- Follow-up occurred at week 2; months 1, 2 and 3; then quarterly for 1 year.
- Adherence was measured by visual analogue scale (VAS) and qualitative self-rating.
- Dried blood spots (DBS) were collected at months 3 and 9 for TFV-DP testing.
- Generalized estimating equations (GEE) with robust variance were used to detect associations with:
  (1) TFV-DP detection and
  (2) protective TFV-DP levels (≥700 fmol/punch, compatible with ≥4 weekly doses).

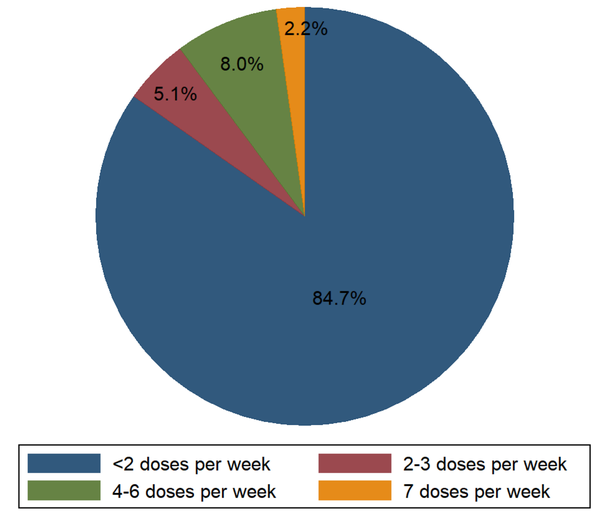


DBS results showed *no detectable TFV-DP* at 178 visits (64.7%), and protective TFV-DP levels at only 28 visits (10.2%). Older age, reporting female sex partners, and lower social support were associated with protective PrEP levels.

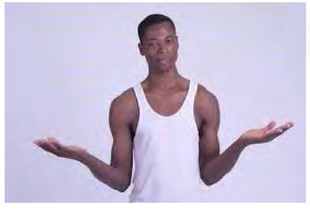
RESULTS

- DBS were provided at 275 visits by 161 participants.
- At baseline, median age was 26, 46.6% reported unprotected anal sex, 86.5% reported ≥3 male partners, 9.8% reported a recent STI, 66.3% reported transactional sex, and 5.5% reported injection drug use.
- Median VAS adherence was 98% (IQR 90%-100%), and men reported taking PrEP “most” or “all of the time” at 89% of visits.

TFV-DP Levels (Doses per Week) at 275 Visits by Kenyan GBM







RESULTS, CONT.

- In bivariable GEE analysis, age, education, occupation, sex with female partners, injection drug use, depressive symptoms, social support, and time were associated with TFV-DP detection or levels.
- Only time predicted TFV-DP detection in multivariable analysis (adjusted odds ratio [aOR] 0.84, 95% CI 0.78-0.90 per month).
- Increasing age (aOR 1.12, 95% CI 1.04-1.21), sex with a female partner in the past 3 months (aOR 3.98, 95% CI 1.33-11.9), and lower social support score (aOR 0.97, 95% CI 0.95-0.99) were associated with protective TFV-DP levels in multivariable analysis.
- Condomless receptive anal intercourse and number of anal sex partners did not predict PrEP use.

CONCLUSIONS

- Despite high reported adherence, drug levels were undetectable in most participants, and only 10% had protective levels.
- These results suggest that PrEP adherence is not aligned with risk among GBMSM in Kenya.
- Tailored interventions to address PrEP adherence in this population are urgently needed, and are currently in development by the study team (R34MH118950, PI Graham).

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Acknowledgements: We would like to thank the study participants and research team at the Nyanza Reproductive Health Society (https://nrhskenya.org/). The Anza Mapema PrEP study was supported by Evidence for HIV Prevention in Southern Africa, grant (MM/EHPSA/NRHS/0515008). Truvada® was provided by Gilead.