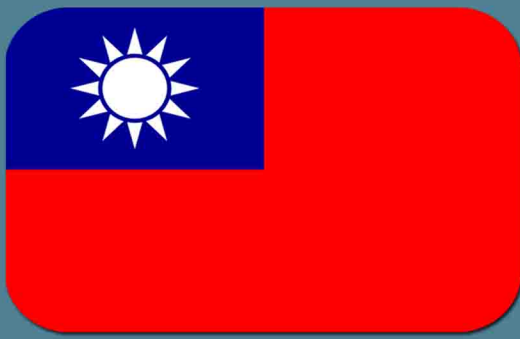


Reducing Sexual Harm among Gay and Bisexual Men (GBM) in Taiwan Who Engage in Chemsex: Uptake of Biomedical Prevention Technologies

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Background

- People engaging in Chemsex are at a higher risk of sexual health-related harm. Various biomedical interventions have proven effective against STIs, such as vaccines for human papilloma virus (HPV) and mpox, PrEP and treatment as prevention for HIV, and doxy-PEP for syphilis and Chlamydia infection.
- **TDF/FTC (Truvada® or generics):** approved for PrEP by Taiwan FDA in 2016, partially covered by Taiwan CDC if eligible for government-funded programs, available out-of-pocket for 30-360 NTD (~1-12 USD) per pill.
- **Quadrivalent/nonavalent HPV vaccine (Gardasil-4®/Gardasil-9®):** approved for 9-26 year-old men by Taiwan FDA in 2018, available out-of-pocket for 4,500 NTD (~150 USD) and 6,000 NTD (~200 USD) per dose, respectively.
- **Mpox vaccine (Jynneos®):** provided by Taiwan CDC since Apr 2023, available for free.
- **Doxycycline:** neither approved for PEP by Taiwan FDA nor recommended by Taiwan CDC yet, available out-of-pocket for 5-30 NTD (~0.25-1 USD) per dose.
- **HIV care:** fully covered by National Health Insurance (NHI) in Taiwan, with proportions of 91-95-95 per treatment cascade goal in 2023.
- Whilst these well-established harm reduction strategies are recommended for GBM engaging in Chemsex, the actual uptake remains unknown in Taiwan.

Methods

- Between November 28th-December 28th 2023, a survey comprising 65 questions was administered online to adult GBM using social networking applications in Taiwan.
- Basic demographics, HIV serostatus, risk behaviours, current PrEP use (if HIV-negative) and recent viral load (if living with HIV), actual uptake of other biomedical preventions, as well as Chemsex and frequency of crystal methamphetamine use were collected.
- Chi-square and ANOVA were used for comparison. Association between Chemsex and significant factors were analysed by using multivariable logistic regression.

Results

- A total of 1,656 survey responses were included in this analysis
 - Mean age: 34.7 years (SD 8.2)
 - HIV serostatus: 328 (19.8%) living with HIV, with 309 (94.2%) reported viral suppression from last time
 - Chemsex in the past three months : 149 (9.0%)
- Biomedical preventions for HIV among GBM engaging in chemsex
 - PrEP uptake among HIV-negative GBM: 50.0% in Chemsex group vs. 23.2% in comparator group (P <0.05)
 - Viral suppression among GBM living with HIV: 88.5% in Chemsex group vs. 96.3% in comparator group (P <0.05)
- Significant factors associated with practice of Chemsex per multivariable logistic regression
 - **Condomless anal sex in past 3 mo (vs. none):** aOR 4.51 (95% CI 2.59-8.37, P<0.001
 - **Self-reported STI in past 12 mo (vs. none):** aOR 2.43 (95% CI 1.59-3.67, P<0.001)
 - **HIV(-) with PrEP or living with HIV (vs. HIV(-) without PrEP):** aOR 1.95 (95% CI 1.07-3.58, P <0.05); aOR 10.05 (95% CI 5.56-18.47, P<0.001)
 - **Doxy-PEP use (vs. never):** aOR 2.41 (95% CI 1.10-5.07, P<0.05)

Table. Demographic characteristics, risk behaviours, uptake of biomedical preventions, and mental wellbeing categorised by practice of Chemsex.

Variables, n(%)	Total (n=1655)	Chemsex (n=149)	No Chemsex (n=1506)	P-value
Age, mean (SD)	34.7 (8.2)	35.8 (7.2)	34.6 (8.3)	0.057
Living in 6 largest cities	1293 (78.2)	123 (83.1)	1170 (77.7)	0.128
Income >45,000 NTD (~1,500 USD) per month	943 (57.0)	90 (60.4)	853 (56.6)	0.376
Multiple (≥6) male sexual partners in the past 12 months	556 (33.6)	76 (51.0)	480 (31.9)	<0.001
Any condomless anal sex in the past 3 months	977 (59.0)	133 (89.3)	844 (56.0)	<0.001
Any self-reported STI in the past 12 months*	237 (14.4)	56 (37.8)	181 (12.1)	<0.001
Having any sexual partner living with HIV	331 (20.0)	66 (44.6)	265 (17.6)	<0.001
HIV serostatus and PrEP use				<0.001
HIV(-) without PrEP	1002 (60.5)	31 (20.8)	971 (64.5)	
HIV(-) with PrEP	325 (19.6)	31 (20.8)	294 (19.5)	
Living with HIV	328 (19.8)	87 (58.4)	241 (16.0)	
Ever use of doxy-PEP	1605 (97.1)	135 (90.6)	1470 (97.7)	<0.001
Mpox vaccination				<0.001
Two doses	720 (43.5)	85 (57.0)	635 (42.2)	
Single dose	216 (13.1)	29 (19.5)	187 (12.4)	
Unvaccinated	719 (43.4)	35 (23.5)	684 (45.4)	
HPV vaccination				0.041
Three doses or more	410 (24.8)	43 (28.9)	367 (24.4)	
Single or two doses	140 (8.5)	19 (12.8)	121 (8.0)	
Unvaccinated	1105 (66.8)	87 (58.4)	1018 (67.6)	
Always or sometimes feeling loneliness in the past 6 months	996 (60.2)	92 (61.7)	904 (60.1)	0.69
Feeling happy with sexual life	865 (53.6)	78 (54.9)	787 (53.5)	0.738

*STI including syphilis, gonorrhea, chlamydia, anogenital wart, hepatitis C, and mpox

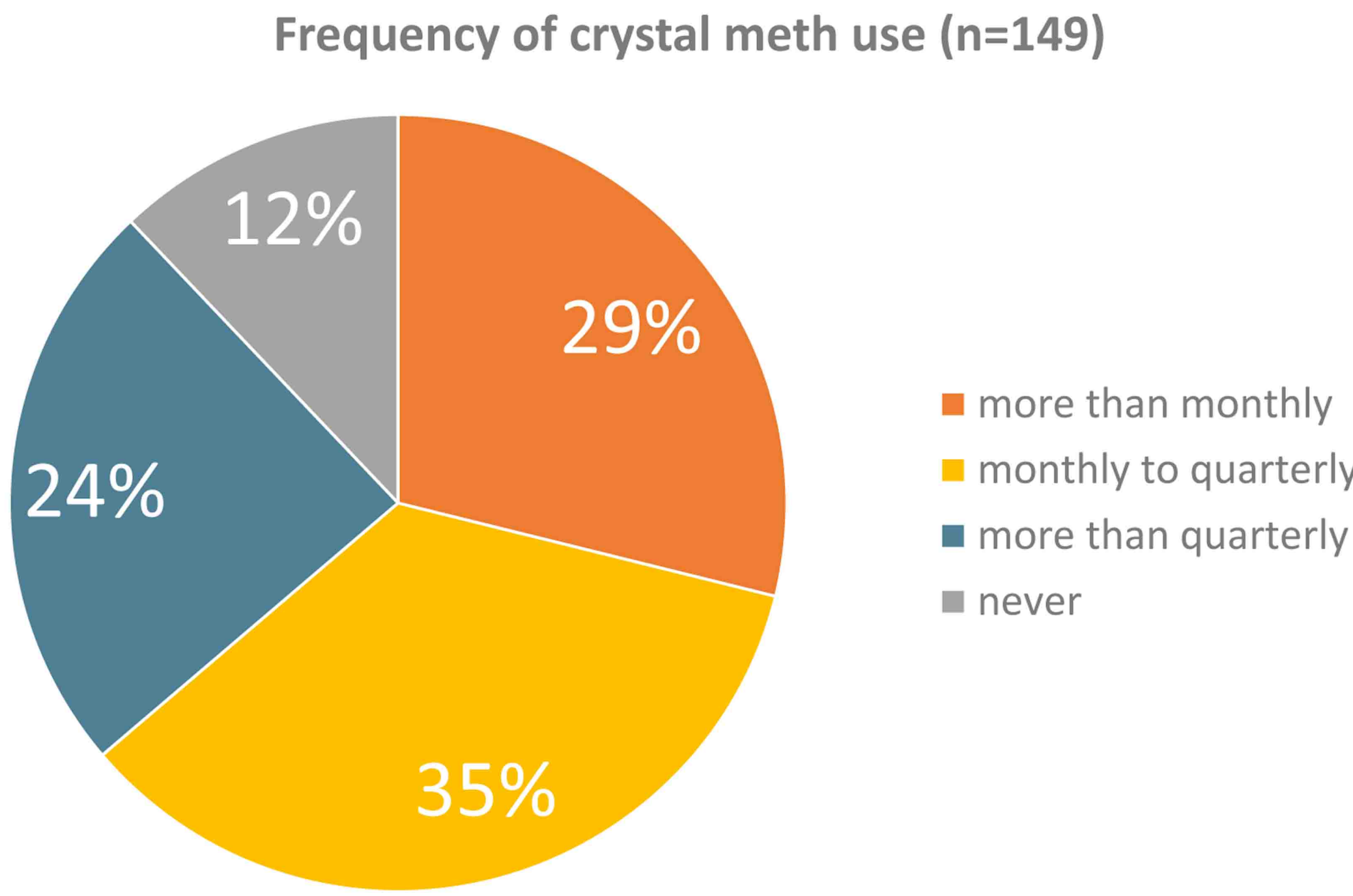
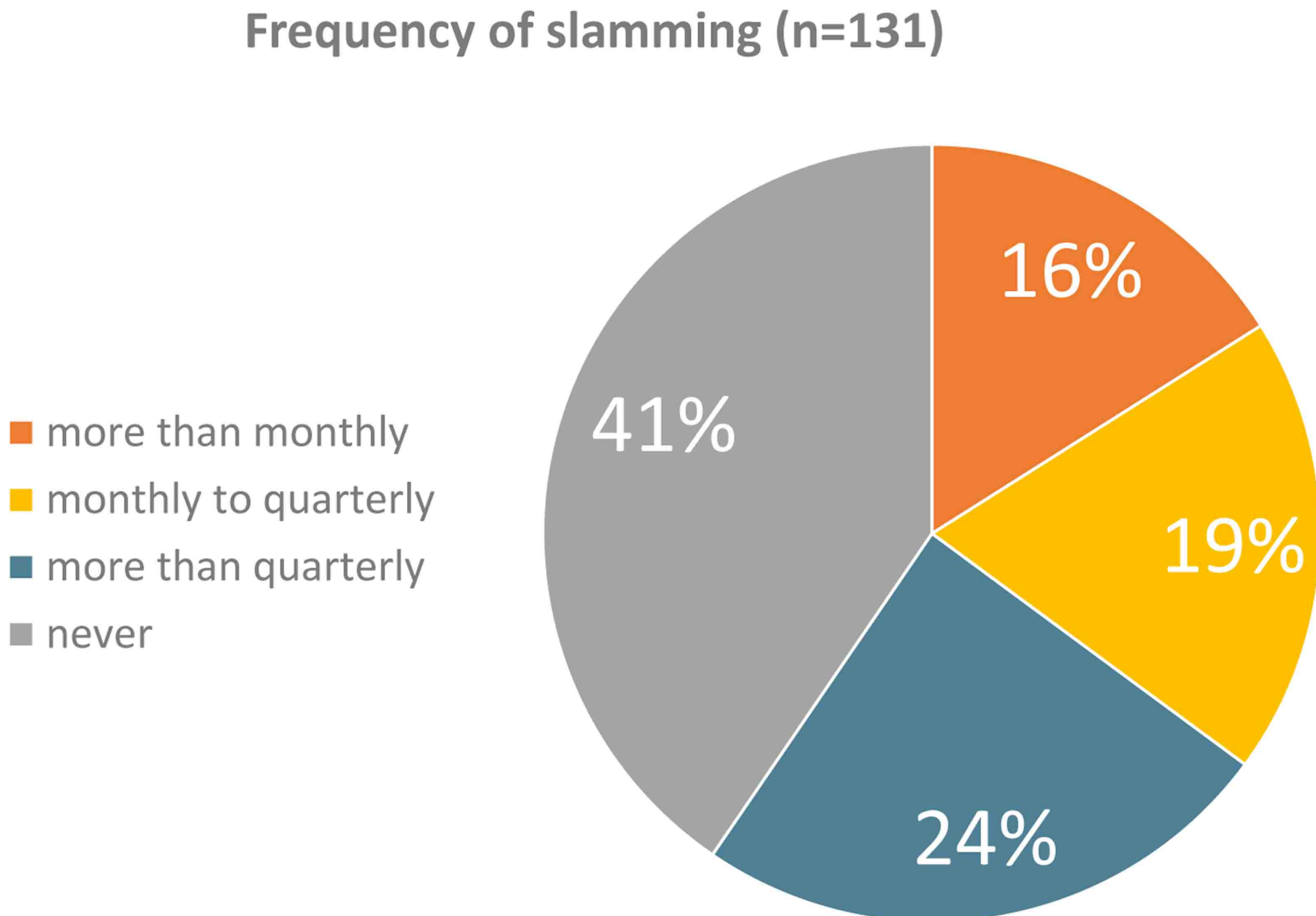


Figure. Frequency of crystal methamphetamine use among GBM engaging in chemsex and “slamming” (intravenous injection) among GBM reporting crystal methamphetamine use.

Conclusions

- Whilst Taiwanese GBM engaging in Chemsex adopted HIV and other STI biomedical preventions, the coverage was far from universal.
- Only 89% of GBM living with HIV achieving viral suppression
- Only 50% of HIV-negative GBM taking PrEP
- Only 57% having full series of mpox vaccination; 29% having full series of HPV vaccination
- Only 9% taking doxy-PEP
- Optimising their implementation and maximising its uptake, especially improving viral suppression among people living with HIV, is imperative.