

Factors associated with daily and non-daily sex-related PrEP adherence among women in the HPTN067 study in Cape Town, South Africa

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Background

- PrEP acceptability studies suggest women prefer low burden strategies which provide peace of mind and fit into their lifestyles
- HPTN067/ADAPT study compared daily to non-daily dosing of oral FTC/TDF in MSM and TGW (New York and Bangkok), and cisgender women (Cape Town)
 - 1) Daily Arm – 1 PrEP pill daily
 - 2) Event-driven Arm – 1 PrEP pill 24-48hrs pre-sex, plus 1 pill within 2 hrs post-sex
 - 3) Time-driven Arm – 1 PrEP pill twice a week, plus 1 PrEP pill within 2hrs post-sex
- Sex-related PrEP adherence or coverage defined as taking at least 1 PrEP dose within 96hrs (4 days) pre-sex and another dose within 24hrs (1 day) post-sex

HPTN067 ADAPT study

Methods

Concurrent triangulation mixed-methods design to explore factors associated with sex-related PrEP adherence among women

Randomization (1:1:1)

Quantitative

Qualitative

Daily Arm (n=59)
Event-driven (n=60)
Time driven (n=59)

Participants used PrEP over a period of 24 weeks

Age: 26 (21-37)
Sex acts: 27 (min: 1, max: 153)

Descriptive, Univariate and Multivariate analysis ($P < 0.1$ considered)

CASI survey, wisepill (electronic drug monitoring) data, weekly brief interviews to obtain information on PrEP coverage per sex act

Subset of 60 women participated in IDI's and FGD's

Thematic analysis applied to explore factors associated with sex-related PrEP (non)adherence

Results: Univariate analysis

*Model outcome is sex-related adherence:
adherence to at least 1 PrEP pill taken within 96hrs before the sexual activity and at least 1 additional pill taken within 24hrs after the sexual activity

Factor	OR (95% CI)	P-value
Dosing Regimen <i>Event-driven vs Daily</i>	0.37 (0.24 to 0.56)	<.0001
<i>Event-driven vs Time-driven</i>	0.78 (0.53 to 1.17)	0.2333
<i>Time-driven vs Daily</i>	0.47 (0.31 to 0.71)	0.0003
Age, per 5 year change <i>Continuous</i>	1.15 (1.04 to 1.28)	0.0086
Depression <i>CESD score >=16 vs. CESD score <16</i>	0.95 (0.67 to 1.35)	0.7782
Alcohol use <i>AUDIT >=8 vs AUDIT 0-7</i>	1.09 (0.55 to 2.17)	0.8053
Reported Side-effects <i>Yes vs No</i>	0.90 (0.70 to 1.15)	0.4047
Other Barrier: "I forgot" <i>Yes vs No</i>	0.90 (0.74 to 1.10)	0.2970
PrEP information (range 0-6) <i>Continuous</i>	1.05 (0.99 to 1.12)	0.1136
PrEP motivation (range 0-32) <i>Continuous</i>	1.00 (0.98 to 1.02)	0.9988
Perceived HIV vulnerability <i>Continuous</i>	0.98 (0.93 to 1.02)	0.3192
Regimen fit to daily life <i>Continuous</i>	0.84 (0.71 to 1.00)	0.0523
Planned vs spontaneous sex event over past 3 months <i>Continuous</i>	0.93 (0.83 to 1.04)	0.2182
Planned vs spontaneous sex event over past 3 months <i>Continuous</i>	1.07 (0.94 to 1.23)	0.2858

Results: Multivariable Analysis

PrEP regimen, age, and fit to daily life remained significantly associated with sex-related PrEP adherence ($P < 0.1$).

Factor	OR (95% CI)	P-value
Dosing Regimen		
<i>Event-driven vs Daily</i>	0.45 (0.27 to 0.76)	0.0024
<i>Time-driven vs Daily</i>	0.49 (0.28 to 0.84)	0.0104
Age, per 5 year change		
<i>Continuous</i>	1.17 (1.07 to 1.29)	0.0009
Regimen fit to daily life		
<i>Continuous</i>	0.85 (0.71 to 1.02)	0.0869

*Model outcome is sex-related PrEP adherence: adherence to at least 1 PrEP pill taken within 96hrs before the sexual activity and at least 1 additional pill taken within 24hrs after the sexual activity

1. Lower sex-related PrEP adherence was observed in either event-or time-driven dosing compared to daily dosing arm

Role of Disclosure

- Feels like forced disclosure for non-daily regimen to partner or alternatively not take the PrEP dose
- A wider circle of disclosure is needed (friends and partner) for event-driven and not just those who you stay with

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“I wouldn’t even take it along. I would take the pill when I come back. I’m avoiding having to explain [to partner]”

Setting reminders and ease of routine

- Daily can set reminders and create a network of social support with peers also taking it daily
- Multiple sex partners or multiple sex acts per week makes pre- & post-sex doses confusing

2. Increase in age associated with better sex-related PrEP adherence across all arms

Women in FGD suggest segmentation is needed for different regimens

- Daily suitable for young people, unable to plan social lives/weekends, unable to plan sex. Young people have less personal and relational agency, less influence on their social lives and surroundings
- Time/Event driven suitable for older people who can plan, able to disclose PrEP use, have a set schedule when they see their partners

Place of sex: especially younger women go to a location outside of their homes for sex acts

“So, for those of us who are not married, we leave our stuff back home and go to another place to sleep there...I would prefer the everyday one [daily PrEP] because you won't have to remember to take them because you know you have already taken them at home in the morning”

3. PrEP regimen fit to daily life was associated with sex-related PrEP adherence

Women shared that they lived busy lives and remembering to take a pill was not their primary focus. Described ideal regimen to be longer acting products (once a week pill or monthly injection)

“I mean it’s annoying to have to suddenly rush home to take a pill”

Not being able to forecast sex made time- and event-driven regimen difficult for post-sex dose especially

“You are meant to know when you will have sex, Sometimes, you don’t know when you will have sex. It just happens”

Participants shared that alcohol use made taking pre- and post-sex dose more difficult: forgetting, peer environment, and lifestyle around alcohol and parties over weekends

“Sometimes you told yourself that you’re just going to party and that you’ll come back home. Sometimes you’ve told yourself that nothing is going to happen that night and it does”

Conclusion

- Sex-related PrEP adherence was significantly associated with daily PrEP regimen.
- Establishing regimen fit to women's lifestyles: look at frequency of sex, relationship dynamics, age, alcohol use, social support and no harm during disclosure
- Regimen needs to find a balance between the need for habit formation vs. pill-taking fatigue and the implementation of prevention-effective adherence

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