Use of HIV Post-Exposure Prophylaxis among Women Sexual Assault Survivors is Not Associated with Increased Posttraumatic Stress Symptoms

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Introduction

- Nationwide, approximately one in five women report sexual assault (SA) in their lifetime.[1]
- A 28-day course of HIV PEP is recommended to SA survivors at higher risk of HIV.[2]
- Use of HIV PEP medication, and associated symptoms, may serve as reminders of the event and increase posttraumatic stress symptoms (PTSS) and worsen outcomes.[3]
- In this analysis, we evaluated PTSS burden among SA survivors who did and did not receive HIV PEP.

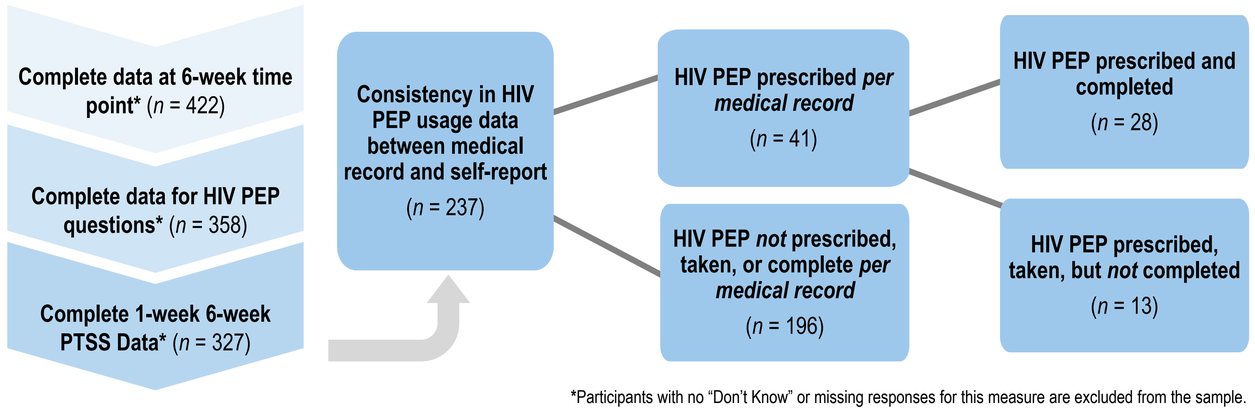
Methods

- Data for this analysis came from the ongoing Women's Health Study (R01 AR064700), the first large-scale, multisite prospective study of sexual assault survivors.
- Participants include female SA survivors ≥ 18 years of age who presented to a network study site ("The Better Tomorrow Network", Figure 2) for SANE care.
- Potentially study-eligible patients are approached by a research assistant (RA) for consent to contact them in 48-72 hours and access medical records related to the assault.
- Follow-up evaluation of enrolled participants is performed at 1 week, 6 weeks, 6 months, and 1 year. This interim analysis includes health outcomes data through 6 weeks. Follow-up evaluations included an assessment of PTS symptoms (PCL for DSM-IV), anxiety symptoms (PROMIS), and overall pain and somatic symptoms (0-10 NRS).
- The study sample for this analysis consisted of participants who had complete medical record data, concordance between self-report and medical record data regarding HIV PEP use, and 6-week follow-up data.

Analysis

- The influence of HIV PEP was estimated in R for the following outcomes: PROMIS Anxiety, PROMIS Depression, PCL PTSD, Overall Pain, and Somatic Symptoms.
- We used nonparametric matching to adjust for observed confounding as implemented in MatchIt[5]; balance was evaluated using cobalt[6].
- Welch's t-tests were then performed between the matched users and non-users of HIV PEP.
- For all non-significant outcomes, equivalence tests were performed using the TOSTER[7] package to perform two one-sided *t*-tests using the Minimally Important Difference (MID) for each scale.

Figure 1. Participant Selection Criteria and Categorization



*Participants with no "Don't Know" or missing responses for this measure are excluded from the sample.

Figure 2. The Better Tomorrow Network

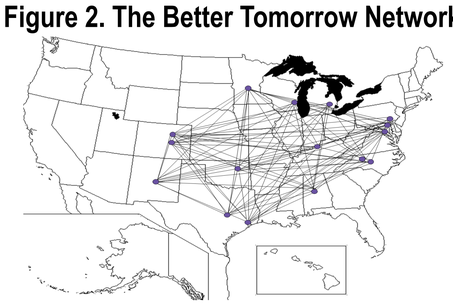


Table 1. Sexual Assault Survivor Characteristics**

Work Status, *n* (%)	
No Work/Disabled	70 (32)
Student/Part-Time	62 (29)
Full-Time	85 (39)
Race, *n* (%)	
African American	32 (12)
Caucasian	158 (61)
Multiracial/Other	69 (27)
Education Status, *n* (%)	
Less than college	221 (80)
College or beyond	56 (20)
Annual Income Level, *n* (%)	
<$20K	100 (40)
$20K-$40K	58 (23)
$40K-$80K	58 (23)
>$80K	36 (14)

**The prevalence of these survivor characteristics exclude "don't know" and missing responses and are presented out of the total number of Y/N responses received.

Table 3. Sociodemographic characteristics in women who did and did not receive HIV PEP were similar after matching

Confounder	Std. Difference after Matching
Education	0.063
Trauma History	0.107^
Work Status	0.086
Age	0.166^
Income	0.057
Race	0.057
Ethnicity	0.028

Table 2. Use of HIV Post-Exposure Prophylaxis Regimen in Immediate Aftermath of Sexual Assault, *n* (%) (n = 237)

Not Prescribed by Emergency Care Provider	196 (83)
Prescribed by Emergency Care Provider	41 (17)
Completed Course	28 (68)
Did Not Complete Course	13 (32)

Table 4: Use of HIV Post-Exposure Prophylaxis Among Sexual Assault Survivors is Not Associated with Increased Posttraumatic Stress Symptoms

Post-Traumatic Health Outcome		*t*	*df*	*p*
PROMIS Depression [E] (MID=5)	*t*-test	0.06	62.6	0.955
	TOST Upper	-2.06	62.6	0.022*
	TOST Lower	2.17	62.6	0.017*
PROMIS Anxiety (MID=5)	*t*-test	-0.41	60.3	0.686
	TOST Upper	-2.35	60.3	0.011*
	TOST Lower	1.53	60.3	0.065
PCL PTSS (MID=8)	*t*-test	-1.48	65.7	0.143
	TOST Upper	-3.30	65.7	0.001*
	TOST Lower	0.34	65.7	0.367
Overall Pain [E] (MID=2)	*t*-test	-0.46	66.2	0.649
	TOST Upper	-2.92	66.2	0.002*
	TOST Lower	2.01	66.2	0.024*
Somatic Symptoms (MID=3)	*t*-test	-1.08	67.2	0.285
	TOST Upper	-1.31	67.2	0.098
	TOST Lower	-0.86	67.2	0.800

*$p < 0.05$
[E]$p < 0.05$ for TOST and $p > 0.05$ for *t*-test

"I decided not to take the medication because I already have a busy schedule and adding more things to worry about feels like it will only complicate my life."

"HIV meds are very hard to be on while working - very hard on the body. Effects you physically and mentally not knowing if you have a life threatening disease."

"On top of all the side effects, I slowly would put taking them off. I would talk my self out of having the chance of getting HIV and even caring."

Figure 3. Illustrative Participant Comments

Results

- Demographic characteristics of initial participants enrolled are shown in Table 1.
- Of our sample with complete data, 196 of 237 (83%) were not prescribed HIV PEP, and 41 of 237 (17%) were prescribed HIV PEP. 28 of the 41 (68%) prescribed HIV PEP completed the regimen and 13 of the 41 (32%) did not complete the regimen (Table 2).
- Adequate balance was achieved for measured confounders. The sample may have remained unbalanced for Trauma History and Age (Table 3).
- The effect of HIV PEP on any post-traumatic outcome was not significant (Table 4).
- TOST equivalence tests produce evidence that the magnitude of an effect of HIV PEP on depression and overall pain is not greater than their respective MID.
- Example qualitative comments from enrolled participants are shown in Figure 4.

Conclusion

- Using nonparametric matching, it was possible to achieve adequate balance on observed confounders (Table 3).
- Sociodemographic characteristics in women who did and did not receive HIV PEP were similar (Table 3).
- Receipt of HIV PEP was not associated with worse pain, depressive symptoms, or mental health outcomes at six weeks (Table 4).
- Further analyses will evaluate the association between HIV PEP use and PTSS in the full cohort at later time points.

References

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