

# Characterizing behavioral exposure and predictors in PrEP users

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## Background

- Routine PrEP delivery programs often assume users experience sexual HIV exposure continuously, warranting indefinite PrEP use.
- However, when PrEP use is temporally aligned with sexual activity, the risk of sexually acquired HIV is reduced. This is also known as preventive effective use (PEU).
- We sought to temporally characterize sexual exposure and abstinence among oral PrEP and PrEP ring users to better understand dosing frequency requirements for PEU.

## Methods

- In research embedded in the PEPFAR/USAID-supported CATALYST study, women in Kenya and South Africa responded daily to three questions about their PrEP use and sexual activity for 42 days.
- Questions and responses were sent by telephone through SMS or USSD (Figure 1).
- Outcomes were the total and maximum contiguous days of sex, condomless sex, and abstinence over the 42-day period.
- Due to non-normality, median and interquartile ranges are reported.
- We used the Kruskal-Wallis test to compare differences in sexual behavior by PrEP method and sociodemographic characteristics.
- Data from 240 participants were analyzed.

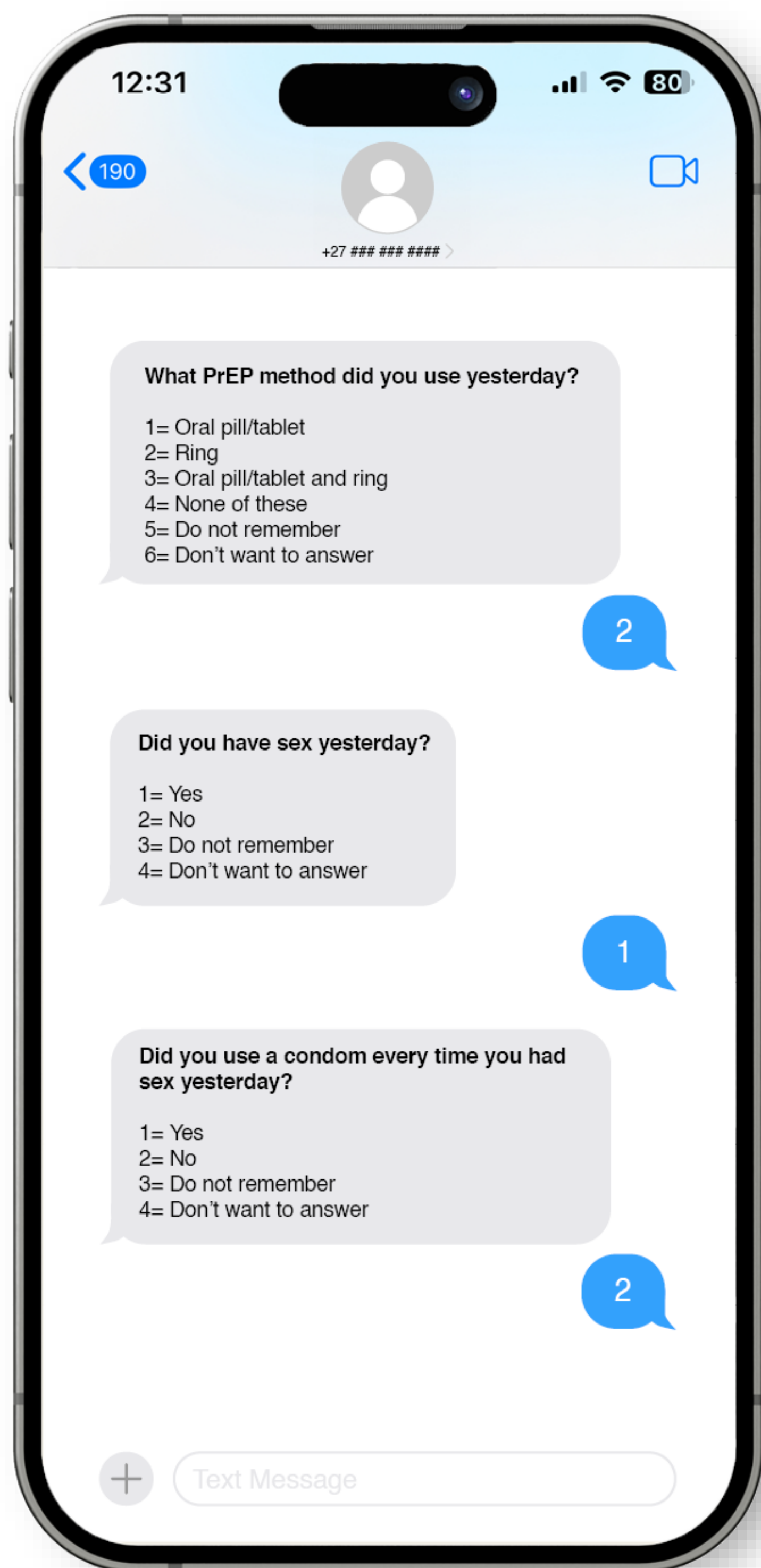


Figure 1. Daily messages sent to participants

## Results

- The median age of participants was 29 years (IQR: 24–35).
- A higher proportion of ring users identified as a female sex worker (FSW) (79%) compared to oral PrEP users (67%).
- Participants with higher incomes reported greater total days of sex ( $p < 0.001$ ).
- Total and contiguous days of sex were higher among FSWs (Total:  $p < 0.001$ ; Contiguous:  $p < 0.001$ ) and those who reported having  $\geq 3$  partners prior to enrollment (Total:  $p < 0.001$ ; Contiguous:  $p < 0.001$ ).
- There were no significant differences in the number of days of sex or abstinence between oral PrEP or ring users.
- However, ring users reported higher contiguous ( $p = 0.049$ ) and total ( $p = 0.008$ ) days of condomless sex.

Table 1. Participant characteristics

	N (%)	
<b>Age</b>	18–24	72 (30.0)
	$\geq 25$	168 (70.0)
<b>Education</b>	None or some primary	10 (4.2)
	Completed primary—some secondary	91 (37.9)
	Completed secondary	139 (57.9)
<b>FSW status</b>	FSW	173 (72.1)
	Non-FSW	67 (27.9)
<b>Marital status</b>	Never married	185 (77.1)
	Married/Living as married	27 (11.2)
	Divorced/separated/widowed	27 (11.2)
	No response	1 (0.4)
<b>Primary partner HIV status</b>	Positive	6 (2.5)
	Negative	74 (30.8)
	No primary partner	160 (66.7)
<b># partners in last 3 months</b>	0	10 (4.2)
	1	73 (30.4)
	2	18 (7.5)
	$\geq 3$	139 (58.7)

Primary partner = a person they have sex with on a regular basis whom they consider to be their main partner

Table 2. Sexual behaviors across PrEP method and FSW status over 42 days

	FSW Status		PrEP Method	
	FSW	Non-FSW	Oral PrEP	Ring
<b># days sex – total</b>	29.0** (19.0–37.0)	11.0** (4.0–20.0)	24.5 (11.0–35.0)	24.0 (16.0–33.0)
<b># days sex – contiguous</b>	24.0** (9.0–35.0)	4.0** (0.0–14.0)	16.0 (3.0–31.5)	19.5 (6.0–30.5)
<b># days condomless sex – total</b>	8.0 (0.0–15.0)	6.0 (1.0–11.0)	3.5** (0.0–11.0)	9.0** (3.0–14.0)
<b># days condomless sex – contiguous</b>	2.0 (0.0–7.0)	0.0 (0.0–6.0)	0.0* (0.0–6.0)	2.0* (0.0–7.0)
<b># days abstinence – total</b>	8.0** (2.0–16.0)	24.0** (16.0–31.0)	10.0 (3.0–23.0)	12.0 (5.0–21.0)
<b># days abstinence – contiguous</b>	2.0** (0.0–8.0)	17.0** (6.0–29.0)	2.0 (0.0–18.0)	5.0 (0.0–14.0)

All results presented = Median (IQR); \* $p < 0.05$  \*\* $p < 0.01$

## Conclusions

- PrEP users had sustained sexual exposure in a six-week period and few days of abstinence.
- Given the use durations necessary for sufficient protection by both methods, a goal of daily use remains warranted in this population, acknowledging that imperfect use may afford some protection.
- Additional analyses are planned to temporally associate reported PrEP use and condomless sex to better evaluate PEU.
- Similar research with a higher proportion of non-FSWs and to differentiate by vaginal vs. anal sex, and across additional subpopulations, including men, is needed.

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