

Preferences for Long-Acting HIV Pre-Exposure Prophylaxis (PrEP) Formulations among East and Southern African Women – Evidence from a Discrete Choice Experiment (DCE)

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Background

- Young women often have challenges adhering to daily oral PrEP
- PrEP products centered around women's preferences could address some of these barriers

Objective: Using a longitudinal DCE, 1) we evaluated young African women's preferences for PrEP product attributes, including daily pills, monthly pills, and long-acting injections, and 2) whether their preferences changed after taking daily oral PrEP for a month.

Methods

- Enrolled HIV-uninfected cisgender women from 6 African countries, sexually active and 16–30 years old.
- Women were offered PrEP at each visit
- DCE survey administered at enrollment and month 1 with 16 randomly assorted choice sets assessing 5 PrEP attributes (Table 1)
- DCE analyzed using Sawtooth software
- Preference weights:** relative desirability of an attribute level with higher numbers indicating a greater preference, computed using hierarchical Bayesian model
- Importance scores:** relative importance across the 5 attributes (higher scores indicate greater importance)

Table 1. PrEP product attributes and levels assessed at enrollment and month 1

Attribute	Level 1	Level 2	Level 3	Level 4	Level 5
Form and dosing	Large oral pill taken once a day 	Small oral pill taken once every month 	Injection once every 2 months 	Injection once every 3 months 	Injection once every 6 months
Dose forgiveness	Drug can still work for 1 week after last dose 	Drug can still work for 2 weeks after last dose 	Drug can still work for 2 months after last dose 	Drug can still work for 4 months after last dose 	Drug can still work for 7 months after last dose
Reversibility	Stays in the body for 1 week after last dose 	Stays in the body for 1 month after last dose 	Stays in the body for 6 months after last dose 	Stays in the body for 12 months after last dose 	
Weight change	5kg weight loss 	2kg weight loss 	2kg weight gain 	5kg weight gain 	No weight change
Type of protection	Using a medication that fights HIV 	Using the body's immune system to fight HIV. 			

Results

In a longitudinal study of >3000 women from East and Southern Africa, the “product form and dosing” attribute exerted the greatest influence on product choice. Preferences for product form and dosing changed over time as women gained experience with daily oral PrEP.



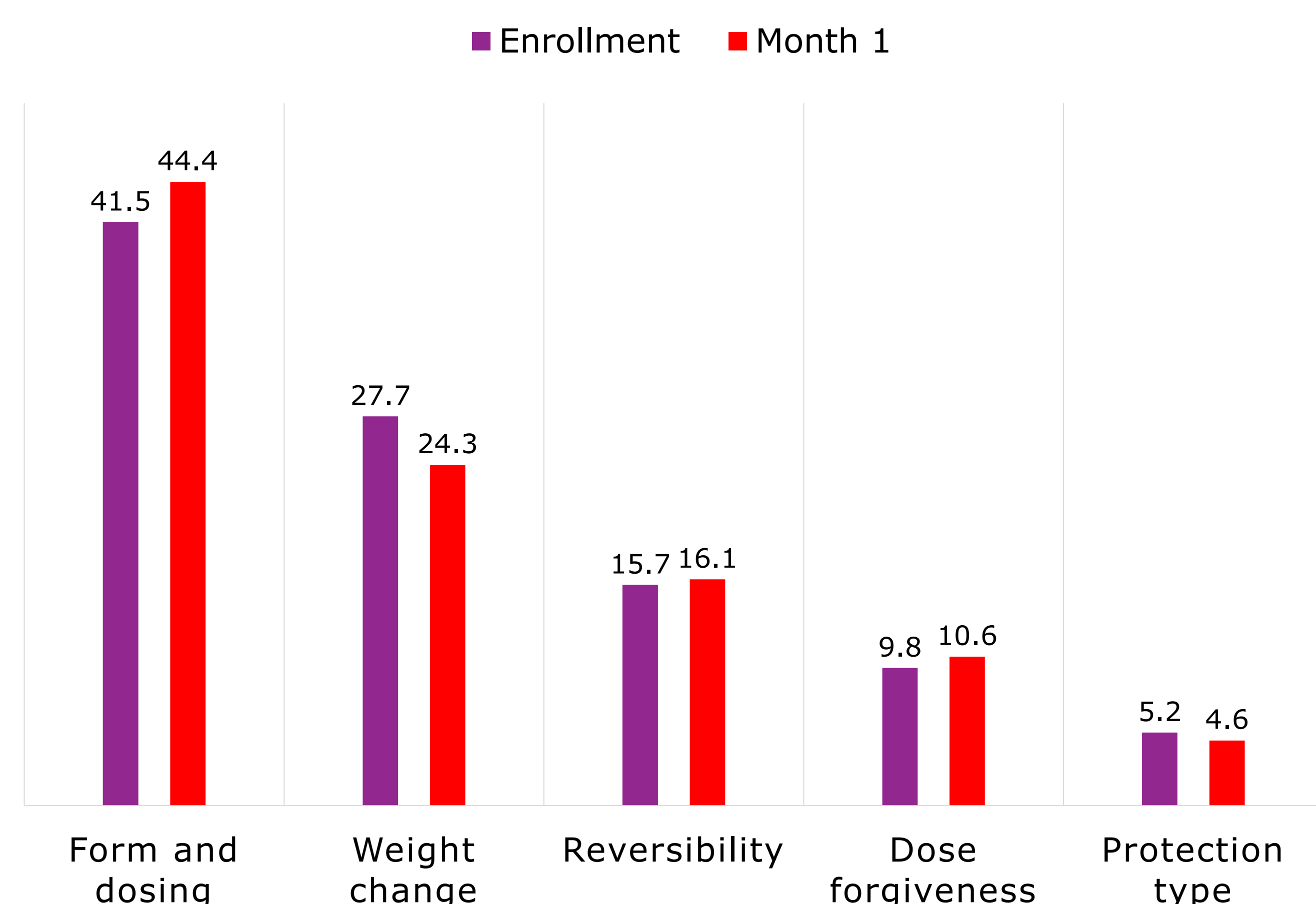
- 3087 enrolled Aug-Dec 2022 and followed up through Jun 2023 (Table 2)
- 2870 (93.0%) initiated PrEP at enrollment
- 263 (8.5%) participants were married

Table 2. Participant baseline characteristics

Characteristic	All participants (N=3087) n (%)
Country	
South Africa	2337 (75.7)
Eswatini	150 (4.9)
Kenya	150 (4.9)
Malawi	150 (4.9)
Uganda	150 (4.9)
Zambia	150 (4.9)
Married or partnered (not married)	2972 (96.3)
Currently living with partner or husband	409 (13.2)
Secondary or higher education	2811 (91.1)
Age, years [Median (IQR)]	23.0 (20 - 26)

- The “product form and dosing” attribute exerted the greatest influence on product choice (importance scores: 41.5% at enrollment and 44.4% at month 1) (Figure 1);
- “Weight change” was the second most important attribute

Figure 1. Overall product attribute importance scores (%), by visit



“Product form and dosing” attribute:

- At enrollment, small oral pills taken monthly were most preferred (preference weight: 0.70, 95% Confidence Interval [CI]: 0.61, 0.79) (Table 3);
- At month 1, after 93% of women had opted to take oral PrEP, an injection every 6 months was most preferred (preference weight: 0.58, 95% CI: 0.47, 0.68)

“Weight change” attribute: no weight change was most preferred and a 5kg weight loss was least preferred

Table 3. Product preference weight and 95% confidence interval

Attributes and levels	Enrollment (N=3086)	Month 1 (N=2936)
Form and dosing		
Large oral pill daily	-0.46 (-0.55, -0.37)	-0.84 (-0.96, -0.72)
Small oral pill monthly	0.70 (0.61, 0.79)	0.36 (0.25, 0.48)
Injection every 2 months	-0.35 (-0.40, -0.31)	-0.22 (-0.28, -0.17)
Injection every 3 months	-0.12 (-0.18, -0.07)	0.13 (0.05, 0.21)
Injection every 6 months	0.23 (0.16, 0.31)	0.58 (0.47, 0.68)
Dose forgiveness		
1 week	-0.18 (-0.19, -0.16)	-0.34 (-0.35, -0.32)
2 weeks	-0.08 (-0.10, -0.07)	-0.23 (-0.25, -0.21)
2 months	-0.08 (-0.09, -0.07)	0.02 (0.01, 0.03)
4 months	0.14 (0.13, 0.15)	0.19 (0.17, 0.20)
7 months	0.20 (0.19, 0.21)	0.36 (0.34, 0.37)
Reversibility		
1 week	-0.33 (-0.36, -0.30)	-0.34 (-0.38, -0.30)
1 month	-0.08 (-0.10, -0.05)	-0.18 (-0.22, -0.14)
6 months	0.13 (0.11, 0.15)	0.18 (0.14, 0.21)
12 months	0.28 (0.25, 0.32)	0.34 (0.30, 0.39)
Weight change		
5kg weight loss	-0.66 (-0.71, -0.62)	-0.70 (-0.75, -0.66)
2kg weight loss	-0.11 (-0.13, -0.08)	-0.06 (-0.08, -0.03)
2kg weight gain	0.25 (0.22, 0.28)	0.27 (0.24, 0.30)
5kg weight gain	-0.10 (-0.15, -0.06)	-0.09 (-0.13, -0.04)
No weight change	0.62 (0.60, 0.64)	0.58 (0.55, 0.60)
Protection type		
Medication	-0.02 (-0.03, -0.01)	-0.01 (-0.03, -0.004)
Immune	0.02 (0.01, 0.03)	0.01 (0.004, 0.03)

Conclusion

- “Product form and dosing” was the most important attribute among PrEP naive African women
- A 6 monthly injection was most preferred after women had 1 month of daily oral PrEP experience
- Discrete, long-acting prevention methods and approaches are needed to meet women's product attribute preferences and to support product choice among young women in sub-Saharan Africa

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