Multipurpose vaginal rings: Preferences from a national discrete choice survey with US women



#1256

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BACKGROUND

- Women worldwide need and want multipurpose prevention technologies (MPTs) to meet their varied sexual and reproductive health needs.
- Most MPTs in development are vaginal rings (comprising 8 of 21 products[1]).
- End-user research is needed to understand women's preferences regarding the wide range of MPT ring attributes, as well as heterogeneity in preferences between different women.
- We assessed US women's preferences re: varying ring attributes, to help fill these gaps, and to optimize a nonhormonal MPT ring in development to prevent pregnancy, HIV, other sexually transmitted infections (STIs), and bacterial vaginosis (BV).

METHODS

- We conducted a cross-sectional online survey with sexually active US women ages 18–49 years currently/interested in using contraception.
- Women were recruited via Prime Panels Dec 2023–Jan 2024, with over-sampling of Black/African American women.
- The survey included a discrete choice experiment (DCE) comprising 7 attributes with varying levels, identified via qualitative research. **Figure 1** shows an example of one of the 12 DCE choice sets.
- We analyzed DCE data using mixed multinomial logit models, in Stata v18.

Figure 1. Illustrative DCE choice set (1 of 12)

	OPTION A	OPTION B
How well it prevents pregnancy (chances of getting pregnant)	**80%** effective *20 pregnancies per 100 women a year*	**70%** effective *30 pregnancies per 100 women a year*
How well it protects against HIV	**70%** protection from **HIV**	**95%** protection from **HIV**
How well it protects against STIs (like gonorrhea, chlamydia, genital herpes)	0% does not prevent STIs	**80%** protection from **STIs**
Prevents bacterial vaginosis (BV)	**Prevents BV**	**Does not prevent BV**
Contains hormones for pregnancy prevention	**Hormones**	**No hormones**
Effect on your period	May cause heavier/ unpredictable periods	No effect
Continuous use (keep in for 1 month) or "On-demand" use (insert when having sex)	Can use **continuously** or **on-demand**	Must use **continuously** for 1 month

I would choose:

○ Option A ○ Option B ○ Neither option

RESULTS

Table 1. Socio-demographic characteristics

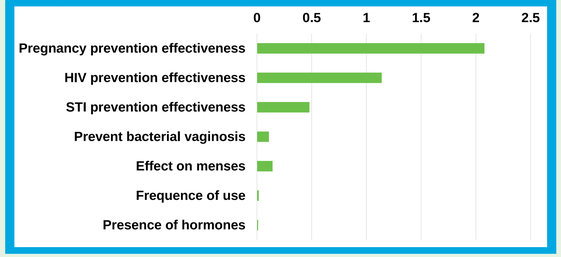
n=2,105 women, from all 50 US states	
Age—mean (SD, range)	31.3 years (8.8, 18-49)
Race	
White	62%
Black/African American	32%
American Indian/Alaska Native	3%
Asian	4%
Pacific Islander	1%
Another race	4%
Latino, Hispanic, or Spanish origin	17%
Completed high school education or less	54%
Household poverty	34%
Married/cohabiting	53%
Has ≥ 1 child	57%

- The most common currently used contraceptive methods were male condoms (43%), birth control pills (32%), withdrawal (27%), fertile days (13%).
- 43% ever had an unintended pregnancy.
- 25% reported worry about getting HIV and 36% about getting at least one STI, in the next 12 months; 9% tested positive for an STI in the last year.
- 48% reported currently using condoms, and 4.5% pre-exposure prophylaxis (PrEP), to prevent HIV.

Relative importance of MPT ring attributes

- **Figure 2** shows the relative importance of attributes for the full sample, from the DCE analyses.

Figure 2. Relative importance of DCE attributes



- Effectiveness for pregnancy prevention was the most important.
- Effectiveness for HIV prevention was about half that of pregnancy prevention, and STI prevention about half that of HIV prevention.
- BV prevention and effect on menses were also important; relative importance of a nonhormonal ring, and frequency of use, were negligible.
- Women were willing to make tradeoffs in effectiveness for each indication, for other desired attributes, e.g., for a 10% increase in HIV and STI prevention effectiveness, they would give up 6% and 3% in pregnancy prevention effectiveness, respectively (both p<0.001).

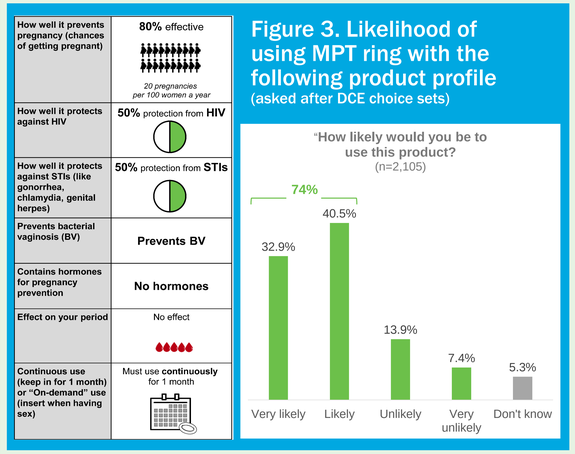
Heterogeneity in preferences

Specific subgroups of women had substantially stronger preferences for certain attributes than the full sample. Most notably:

- **Younger women** (ages 18–29 vs. 30–49 years) had a higher preference for both pregnancy and HIV prevention effectiveness.
- **Women worried about getting HIV** preferred HIV prevention effectiveness about 1.5 times as much and were willing to accept a 12.1% reduction in pregnancy prevention effectiveness for a 10% increase in HIV prevention effectiveness.
- **Women for whom nonhormonal contraception is very important** would prefer the ring to be non-hormonal about 10 times as much and would accept a 14.2% reduction in pregnancy prevention effectiveness for the ring to be non-hormonal.

Direct elicitation of likelihood of using a nonhormonal MPT ring product

- As shown in **Figure 3**, when asked how likely they would be to use a vaginal ring with a particular product profile (with conservative estimates for efficacy), most women said they would be very likely (33%) or likely (41%) to use it.
- Nearly 70% would use this ring within a year of it being approved (over half of those "right away").
- Three-quarters (76%) would use it for both pregnancy and HIV/STI prevention, vs. for pregnancy or HIV/STI prevention alone.
- Among women saying they would be unlikely to use the MPT-ring, the main reasons included happiness with their current method(s) (55%) and/or wanting higher pregnancy (42%) or HIV/STI (21%) effectiveness.



CONCLUSION

- US women reported strong interest in an MPT ring.
- When evaluating MPT ring attributes, effectiveness for pregnancy and HIV prevention—the focus of most MPT research to date—were most important, but STI and BV prevention were also valued.
- Preferences were heterogeneous, e.g., with HIV prevention effectiveness and nonhormonal options more strongly preferred among subsets of women.
- Continued end-user research regarding varied preferences and tradeoffs is needed to optimize future MPT products.

References

1. The Initiative for Multipurpose Prevention Technologies (IMPT). MPT Product Development Database 2025 [cited 2025 February 27]. Available from: https://mpts101.org/

FOR MORE INFORMATION

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