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Assessing Non-Oral PrEP Alternatives Among Young Black Women in the Southern USA

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Abstract

Young Black women in the southern US face a high HIV burden. While daily oral HIV pre-exposure prophylaxis (PrEP) can effectively prevent HIV, its use is low among Black women. The acceptability of and perceived intention to use emerging PrEP products among young Black women in the southern US are not well understood. Non-oral PrEP alternatives could address challenges to PrEP uptake and reduce health disparities. We conducted virtual semi-structured interviews with Black women aged 18–34 in Atlanta, GA; Baton Rouge, LA; and Jackson, MS, to explore their perspectives on three emerging PrEP products: a long-acting injection, a subdermal implant, and a dual-purpose contraception and HIV prevention intravaginal ring. Seventy-five interviews were conducted from January to October 2021 and analyzed using inductive thematic analysis with NVivo software. Most participants were open to using medication to prevent HIV. The intravaginal ring was the most preferred, primarily due to its dual-purpose function, although it was also frequently rejected. The long-acting injection was the second most preferred and least rejected, perceived as the least invasive. The skin implant was the least preferred and most rejected, viewed as the most invasive. Our findings highlight the need for multiple PrEP options to meet individual preferences. Detailed descriptions, instructions, and experiential learning methods are crucial for choosing non-oral PrEP modalities. Practitioners should address questions and

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Ethics Approval and Consent to Participate This study received approval from the US Centers for Disease Control and Prevention (CDC) IRB and Office of Management and Budget (OMB No:0920–1091). A waiver of documentation of informed consent was used to decrease participant burden and to ease processes for conducting virtual semi-structured interviews.

Competing Interests The authors declare no competing interests.

offer peer-based learning opportunities. Designing and promoting PrEP strategies for young Black women should involve close consultation with these consumers.

Keywords

HIV Prevention; PrEP; Black women; Qualitative; Health disparities

Introduction

The HIV prevention needs of Black/African American women (hereafter referred to as Black women) in the US merit attention. Although Black women represent 13% of the US female population, they account for 54% of new HIV infections among all US women [1]. Young Black women, specifically those aged 25 to 34 years, had the highest incidence rate (29.3 per 100,000) of any other age group of Black women. The southern US also had the highest incidence (20.9 per 100,000) of HIV diagnoses among Black women of any US region [2].

Daily oral pre-exposure prophylaxis with tenofovir disoproxil fumarate/emtricitabine (PrEP) is a highly effective biomedical HIV prevention option currently available [3, 4]. In December 2021, the US Food and Drug Administration approved an alternative option for PrEP in the form of a long-acting injectable [5]. However, only 8% of PrEP users in the US were female in 2021 [6]. Additionally, when assessing trends in PrEP use by sex relative to population need, PrEP-to-need ratios are less for females as compared to males [7]. Additionally, PrEP use is lowest among women living in the southern US, where HIV and medications to prevent HIV are highly stigmatized [8, 9]. Research also shows that younger age (18–24 years), female sex, and Black race are all predictive of increased levels of PrEP non-persistence over time [10].

Researchers are currently developing new options for the administration of PrEP beyond the daily oral pill and long-acting injectable formulations to address lack of uptake and challenges with adherence and/or persistence of use. To better understand whether emerging PrEP methods appeal to young Black women, we must understand acceptability (whether a treatment is perceived as agreeable) and adoptability (the intent to employ a treatment) among this group [11]. To date, there is limited research on the acceptability and adoptability of PrEP among young Black women living in the southern US. Most studies among women were conducted in Africa and suggest a preference for non-daily use [12–16]. Available research also suggests that a lack of knowledge and awareness of PrEP among Black women in the southern US influences their perceived need for information on PrEP options [17–19]. These findings further showed that PrEP acceptability favorably increased when more information was provided [17–19]. To better inform the development as well as implementation of emergent PrEP options for young Black women in the southern US, there is a substantial need to examine (1) how emerging PrEP products are perceived as agreeable (acceptability) and (2) the rationale by which they may choose to use emerging PrEP products (adoptability). This study fills an important gap in understanding the factors

that may be influential in PrEP decision-making and could offer unique insight into the considerations made by young Black women regarding use of emerging PrEP products.

Methods

Theoretical Approach

As acceptability is a key consideration for new biomedical interventions, the Theoretical Framework of Acceptability served as a foundation for this study's qualitative assessment of prospective acceptability. In particular, the following constructs were considered: affective attitude (how one feels about an intervention), intervention coherence (extent to which one understands how an intervention works), burden (perceived amount of effort required to use an intervention), and perceived effectiveness (extent to which an intervention is perceived as likely to achieve its purpose) [11]. We also assessed adoptability defined as the "intention, initial decision, or action to try or employ an innovation or evidence-based practice" [20].

Sampling and Eligibility

This qualitative study relied on a purposive, non-probabilistic, targeted sampling approach. The sample was recruited from three metropolitan statistical areas in the southern US with elevated HIV risk among young Black women: Jackson, MS; Baton Rouge, LA; and Atlanta, GA [1]. Recruitment was coordinated with assistance from staff at partnering health departments, community-based organizations, and clinics that serve HIV-negative or HIV status-unknown Black women. Collaborators were selected because they serve Black women in a reproductive or sexual health capacity. Staff at the partner agencies assisted recruitment efforts by distributing flyers to potentially eligible clients during points of contact, posting flyers in facilities, and via social media. Partners were also asked to identify potential venues and settings specifically frequented by young Black women. Local recruiters were responsible for posting flyers in venues and facilities, such as college campuses, beauty salons, laundromats, parks, and community centers.

Potential study participants were instructed to call a toll-free telephone number located on recruitment materials to speak with a study team member for more information. Study staff then provided a brief description of the study and assessed eligibility via a short screening tool. Individuals were eligible for participation if they self-reported being a Black, cisgender woman between 18 and 34 years of age who had condomless vaginal or anal sex with a man within the preceding 12 months and being HIV-negative or of unknown HIV status. Women were purposively selected for participation by study staff with attempts to balance distribution of younger and older women within the 18-to-34-year age range in each metropolitan statistical area. All eligible participants voluntarily provided verbal informed consent prior to interview data collection. Study procedures were reviewed and approved by the Centers for Disease Control and Prevention's Institutional Review Board (no. 7224).

Data Collection

This study was initially designed as in-person data collection with participants beginning in March 2020. However, the COVID-19 pandemic suspended all in-person human subject research, and the study was subsequently modified from face-to-face interviews to virtual

data collection. Twenty-five individual, audio-recorded semi-structured interviews (SSIs) were conducted virtually with women from each study site using Zoom™ videoconferencing [21, 22]. Women were asked about their experiences with sexual and reproductive health services, awareness of PrEP, and opinions and preferences for each of the emerging PrEP products. The products evaluated for this study were as follows: (1) a long-acting injection administered in the buttocks or upper thigh every 2 months, (2) a skin implant inserted into the upper arm that is replaced every 6 months, and (3) an intravaginal ring providing protection against both pregnancy and HIV infection for 1–3 months before requiring replacement (Appendix 1). This data collection was conducted before public availability of the current long-acting injectable PrEP. All participants also answered a brief questionnaire assessing demographics; sexual behavior (number of sex partners, condom use); and PrEP/HIV knowledge, beliefs, and attitudes. The interview guide and questionnaire were pretested during development and as part of interviewer trainings by volunteers.

For SSIs, staff briefly described each emergent PrEP product separately, including the expected function, the administration schedule, the length of time of HIV protection based on dosage/administered schedule, and the frequency of recurring healthcare visits required during use. After completion of a verbal description of an emergent PrEP product, interviewers presented a series of open-ended questions about the product. Next, interviewers then presented a product prototype and briefly reiterated its key features or attributes. Another set of open-ended questions followed each visual presentation of an emergent PrEP product prototype. After discussions about each product, participants were asked: (1) “If you had to pick from these three products for yourself, which one would you pick and why?” and (2) “Which one(s), if any, would you automatically say no to?”.

Data Analysis

During the data collection period, the study team debriefed weekly to assess data collection and develop preliminary analysis concept matrices as part of the codebook development process and to further inform the data collection [23]. All SSIs were transcribed verbatim. Coding was conducted using NVivo, version 11 (QSR International, 2017) in two stages consisting of structural and content coding [24]. Structural coding was used to create a broad system of managing and organizing data based on the structure of the interview guide. For content coding, data were systematically analyzed for subject matter using a common content-driven codebook with the aim of analytically identifying key themes and patterns across the interview transcripts. The content codes were, by design, not restricted to a specific question or set of questions and represented discrete, well-defined concepts discussed by the women.

Coder agreement was assessed using pairwise comparisons between four study staff performing the coding. After three rounds of coding, the coders achieved an average kappa score of 0.91 and began coding independently. The choice of 0.7 or better as a benchmark for acceptable agreement is based on Landis and Koch’s measure of observer agreement and is a common measure of “excellent” to “near perfect” agreement [25]. During independent coding of the SSIs, the coding team conducted one coder drift exercise to measure and mitigated shifts in coder reliability and/or biases in application of coding criteria over time.

Each coder independently coded the same interview. They achieved an average kappa score of 0.93 and subsequently continued independent coding.

To conduct thematic analysis, the team took a multipronged approach. First, they revisited the research questions and identified themes pertaining to acceptability and adoptability concepts, utilizing coding for each emerging PrEP product until saturation was reached. Next, they conducted a review of data coded within each product's discussion and overall product preferences. The team then evaluated coded themes by product by running a query in NVivo using the specific product questions and content codes. That output was then used to help discern salient themes and patterns.

Questionnaire responses were assessed using descriptive statistics in Microsoft Excel and Alchemer (formerly SurveyGizmo) [26]. Responses to questions about which PrEP products would be selected or rejected for use were assessed to identify product preferences.

Results

Characteristics of Sample

From January to October 2021, 75 SSIs were completed. The participant mean age was 27 years (range 19–34 years). Thirty-two percent ($n = 24$) self-reported attending some college, 56% ($n = 42$) were married or living with a male sexual partner, and 48% ($n = 37$) worked at a full-time job in the past 12 months. As it related to health, 35% ($n = 26$) self-reported their health as very good, 33% ($n = 25$) relied on condoms as a primary method of contraception, and 79% ($n = 59$) were tested for HIV in the past 12 months (Table 1).

When asked about PrEP and HIV knowledge, beliefs, and attitudes, 79% ($n = 59$) reported they believed that a daily medication could prevent HIV, 64% ($n = 48$) would take a medication daily to prevent HIV, 95% ($n = 71$) would feel comfortable talking to their doctor about medications to prevent HIV, and 20% ($n = 15$) knew of someone who is currently taking daily oral PrEP (Table 1).

Semi-Structured Interview Findings

Acceptability: We found six themes related to the acceptability of the three emerging PrEP products: (1) long- and short-term side effects, (2) physical and psychological discomfort or trust, (3) method of administration, (4) effect on fertility, (5) palpability or privacy, and (6) frequency of use and/or duration of effectiveness (Table 2). In some instances, themes showed overlap dependent upon how participants framed similar concerns with products.

Long- and Short-Term Side Effects: Side effects were emphasized for all three of the emerging PrEP products in this study, with the long-acting injection eliciting the most concern. Some women expressed unease with the possibility of injection-site-associated soreness, tenderness, and pain. Many women, however, viewed such side effects as expected of any injection and not something that would dissuade long-acting injectable PrEP acceptability and potential adoptability. For others, these concerns dissuaded both their acceptance and willingness to use this PrEP product.

For the skin implant, many of the women mentioned concerns around short-term pain, tenderness, and/or bruising associated with the insertion and removal of the product. Some women expressed general uncertainty as to how the body would react to the skin implant. They described the possibility of specific reactions such as temporary loss of movement in their arm, scarring, discoloration, or keloids following insertion. Some wondered whether the removal and reinsertion of the skin implant would be in the same or different location of the body and indicated that repeat incisions could either lead to heavier scarring in one area or could leave them with multiple scars in different places.

In considering the intravaginal ring, women voiced concerns about it affecting their menstrual cycle or causing infections. Although a few women viewed the possibility of menstrual suppression or control (lighter bleeding, shorter cycles) occurring with intravaginal ring use favorably, others were uneasy about missing menstrual cycles. They described and valued perceptions that menstruation “cleanses the body” and serves as evidence that they are not pregnant.

Physical or Psychological Discomfort and Trust: Another major concern shared by women was a sense of physical or psychological discomfort with the product(s). For the intravaginal ring and skin implant, this included their sense of having “something inside me” that could move, fall out, or get stuck and an overall concern for discomfort with continual use.

Women also perceived the intravaginal ring and skin implant as invasive given it resides within the body or requires clinical procedure to administer and utilize it. Women also had concerns about the possible size and thickness of the product based on viewing the prototype. They had concerns about pain, itchiness, burning, and the possibility of constantly feeling the presence of the intravaginal ring once inserted. There was also concern regarding discomfort with intravaginal ring use during sex for both the woman and her sexual partner.

Concerns regarding psychological discomfort were exhibited through general distrust of the medical and governmental institutions or systems that may be involved in the approval or production of the products. A few women mentioned conspiratorial beliefs that medical institutions and/or the government may want to “microchip” them.

Method of Administration: Each product also sparked concerns over the method of administration. For the long-acting injectable, some women shared a general dislike for injections, but some were willing to overcome their dislike for receiving an injection if the product was protective for a longer period than 1 month. The skin implant elicited initial reactions that ranged widely from slight discomfort with the idea, but willingness to consider it, to strong repulsion and rejection of the product. Some women viewed the procedure as “scary” or as “getting surgery.”

For the intravaginal ring, a few women who had prior experiences with contraceptive intravaginal rings were relatively comfortable with the idea of self-insertion once instructed on correct placement by a provider. However, most women expressed discomfort, fear, and

nervousness about self-insertion of the intravaginal ring due to concerns about user error and causing less effectiveness.

Effect on Fertility: Most women appreciated the intravaginal ring's dual use for HIV prevention and contraception and preferred that the skin implant and long-acting injection also provide pregnancy prevention. Some women were worried about the interaction between their current preferred form of contraception and the emerging PrEP products. For example, a few women had concerns about having two implants at once, one for contraception and another for HIV prevention, and worried about how it could affect their hormonal balances. Others would prefer not to use a combined HIV prevention and contraception product because they had concerns about it having long-term effects on their ability to conceive.

Palpability or Privacy: Some women had concerns about PrEP products that they perceived could be visible or palpable. Noticeability did not mean the same thing to all women and depended on the context. In some cases, it meant the peace of mind of knowing that the product was in place and likely working as designed. In other cases, it signaled a lack of privacy or a concern about others being able to see or feel the skin implant under the skin and/or otherwise know that the product was being used. These women described a need for discretion due to fear or stigma associated with the use of an HIV prevention product. Noticeability was of particular concern for the skin implant if it could be seen or felt when touched. Similarly, women also expressed concern about the possibility that their sexual partners would notice the intravaginal ring during sexual intercourse.

Frequency of Use or Duration of Effectiveness: The frequency of use and duration of effectiveness of each of the PrEP products were important to participants. For the skin implant, women liked that it would remain effective for up to 6 months, and they appreciated the prospect of fewer doctor visits. However, for other women, 6 months was not long enough with some pointing out that similar contraception methods have a longer window of effectiveness.

For the long-acting injection, many women felt that receiving it every 2 months would be too frequent and preferred a longer duration of effectiveness. For the intravaginal ring, women did not appear concerned about the 3-month duration of effectiveness. However, a few women—none of whom had experience with a contraceptive intravaginal ring—felt this could be too long of a period of use. For these women, keeping the intravaginal ring inside the vagina for a month or longer was concerning.

Women discussed the need to weigh the frequency of use and duration of effectiveness of each PrEP product in totality, including processes for administration and maintenance specifically for the long-acting injection and the skin implant.

Adoptability: While most participants preferred the intravaginal ring, some women explicitly rejected it. The long-acting injection was the second most preferred but the least rejected product. Overall, the skin implant was the least preferred and the most rejected product (Fig. 1; Table 2).

Intravaginal Ring Adoptability Considerations: Women mostly selected the intravaginal ring as the most preferred product because it would offer protection from both HIV and unplanned pregnancy. Additionally, it was perceived as the least invasive option. Women also preferred the intravaginal ring because there was more perceived control over use as they would be able to insert and remove it themselves after receiving instructions from a healthcare provider. Lastly, preference for the intravaginal ring centered on the perception that its use involved fewer doctor visits. Women with contraceptive ring experience voiced comfort with inserting the ring themselves.

Intravaginal Ring as Rejected Choice: Rejection of the intravaginal ring centered around discomfort with self-insertion and the process required for removal and uncertainty in their ability for correct placement and overall use. Among those who expressed uncertainty with their ability to use the intravaginal ring correctly, risk of being unprotected due to user error was common. Several women rejected the ring because they did not like the idea of something being placed within their reproductive organs.

Long-Acting Injection Adoptability Considerations: For the most part, women who selected the long-acting injection as their preferred product compared multiple features across the three products rather than discussing any intrinsic features (physical attributes) and characteristics (broader performance and safety properties) of the long-acting injection. In other words, objectionable features and characteristics of the other two products made the long-acting injection more appealing. The most cited perception was that the long-acting injection was the least invasive. Additionally, some participants' preference centered on the long-acting injection given perceptions that physical and psychological discomforts would be lower than those expected with the skin implant and the intravaginal ring.

Long-Acting Injection as Rejected Choice: Among women who rejected the long-acting injection, general dislike or fear of needles was commonly cited. Additional reasons were concerns that the duration of protection was not long enough and that too many follow-up doctor visits would be required. These women indicated that getting a shot every 2 months would be too frequent and that they preferred a longer lasting injection option.

Skin Implant as Overall Rejected Choice: Many women rejected the skin implant given concerns around the insertion, removal, and reinsertion process involved. Some women were uncomfortable with having an implant inside of their bodies.

Discussion

Young Black women in the southern US have experienced higher incidence rates of HIV compared to women of other races or ethnicities or in other areas of the US. And yet uptake of PrEP, a daily oral or injectable medication proven to prevent HIV infection, has remained low among them. Additional forms of PrEP are in development, but it is unclear whether they will be accepted or adopted by young Black women. Improving uptake of PrEP with non-oral alternatives could reduce HIV disparities among Black women in the southern US. In this study, we conducted semi-structured interviews and included visual techniques to

display prototypes for insight on the acceptability and adoptability of three emerging PrEP products (long-acting injection, skin implant, and an intravaginal ring).

The intravaginal ring emerged as most preferred product followed by the long-acting injection. The skin implant was both the least preferred and the most rejected product. The primary reason the intravaginal ring was most preferred was due to it being the only product that offered both contraception and HIV prevention. Similarly, studies with African women have also shown that multipurpose PrEP products (HIV prevention and/or STI/pregnancy prevention) are most preferred [12, 15, 27].

The factors affecting acceptability and adoptability for each of these PrEP products were not evaluated in isolation by the women in this study. Women weighed the benefits associated with the products against the method of administration, perceived risk and invasiveness, number of doctor visits required, the duration of protection, and physical and psychological discomfort. These findings reveal that addressing these concerns could be key to further developing and promoting products that young Black women would be willing to use.

In addition, these data show that some Black women are not likely to use any of these emerging PrEP products due to mistrust of the medical establishment. We suggest addressing medical mistrust via education about the product(s) as well as testimonials from trusted sources like known providers or other peers of young Black women who have experience using the products. There is a need for detailed descriptions, instructions, and experiential learning methods for these products. Practitioners can leverage routine doctors' visits for gynecological care and/or HIV testing venues to increase awareness of and educate young Black women on the benefits and utility of PrEP during HIV counseling and testing discussions. Practitioners could also consider developing sexual and reproductive health assessments that include discussion of available PrEP products with promotional materials that are designed by and for young Black women, with consideration for different product features.

More specifically, there may be a need for education about the placement of the intravaginal ring (once available on the market), both in terms of instruction on proper insertion and in terms of reassurance related to the ring staying in place while worn, as well as detailed information regarding physical and psychological comfort—whether and when the intravaginal ring can be felt after insertion and during extended wear, how the ring is affected by and perceived during sex, and how it might affect the vaginal environment and fertility. In addition, most women preferred dual-use products that offered contraception as well as HIV prevention, although this was a concern for some when considering reported fears regarding products possibly contributing to infertility. PrEP products should be considered in conjunction with contraception methods and young Black women's concerns regarding fertility.

For the skin implant, women were uncomfortable with it conceptually and found it difficult to trust. They were also concerned about its physical comfort and the invasiveness of the insertion and removal procedures. However, a study among South African women showed that they were more willing to accept a skin implant if it were dissolvable [27]. Trust in

the skin implant product could be earned, both by making additional scientific information on its effectiveness and safety readily available and through testimonials from influencers, community health workers, or trusted peers who have used the product.

The duration of protection of these emerging PrEP products, especially for the long-acting injection and skin implant, are key to their acceptability and adoptability by young Black women. These data show that developing products with a longer window of protection with fewer associated clinic visits or more time between required medical appointments could possibly outweigh concerns about invasiveness or discomfort.

Our findings show that receiving PrEP information or assessment by a healthcare provider was low despite three quarters of the sample being screened for HIV one or more times in the past 12 months. Findings from other studies show that this could be due to low HIV risk perception and education and awareness among young Black women and having health care providers that know that PrEP could be an important part of sexual healthcare for them [18, 19, 28, 29]. Our findings show that PrEP could be more appealing to young Black women when there is education and awareness of HIV risk and prevention and PrEP products at both the provider and patient level. Future research should explore how PrEP preferences might vary by demographics such as age, educational background, or relationship status. In addition, given the lived experiences of African women and Black women in the US are different, researchers could also assess how the preferences for emerging PrEP products among these two groups of women compare or contrast to inform recommendations.

There are several limitations to the findings of this study. Given our study design, it is neither appropriate nor feasible to generalize findings beyond our study sample. Despite interviewers asking participants to assume products were as safe and efficacious as daily oral PrEP, participants still had concerns for safety and efficacy of the emerging PrEP products as presented and discussed those concerns as part of their responses. Although we ensured during screening that the women who participated had reported engagement in condomless vaginal or anal sex with men within the past 12 months, we did not specifically recruit women with indications for PrEP use. Some of the women in this sample may be at low HIV risk because they reported being in monogamous relationships and therefore may be unlikely to seek or utilize PrEP in any form. Additionally, three women out of the sample of 75 did not choose a single PrEP product when asked about their most preferred and rejected choices. They chose multiple products. For this reason, they were not included in the summations and analysis of discussions on participants' preferred and rejected choices, further reducing sample size for those portions of the analysis.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Data Availability

The data that support the findings of this study are available from the US Centers for Disease Control and Prevention (CDC), but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of CDC.

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Fig. 1. Preferred and rejected choices of emerging PrEP products by young black women in the Southern US ($n = 75$)*. *Questions were asked as part of a semi-structured qualitative interview. Women who mentioned more than one product and/or did not choose a product were excluded

Table 1

Characteristics of sample of young black women in the Southern US (*n* = 75)

	Total <i>N</i> = 75 percent ^a (<i>n</i>)	Atlanta, GA <i>N</i> = 25 percent ^a (<i>n</i>)	Baton Rouge, LA <i>N</i> = 25 percent ^a (<i>n</i>)	Jackson, MS <i>N</i> = 25 percent ^a (<i>n</i>)
Age in years (mean, range)	27 (19–34)	28 (21–33)	28 (19–34)	27 (20–33)
Highest grade or year of school completed				
Never attended school	0	0	0	0
Less than high school and no GED	4% (3)	0	12% (3)	0
Graduated high school/Received GED	16% (12)	16% (4)	24% (6)	8% (2)
Technical/Associate's degree	11% (8)	20% (5)	4% (1)	8% (2)
Some college (did not graduate)	32% (24)	20% (5)	44% (11)	32% (8)
Bachelor's degree	29% (22)	36% (9)	8% (2)	44% (11)
Graduate degree (masters, professional, doctorate)	8% (6)	8% (2)	8% (2)	8% (2)
Marital status				
Married	20% (15)	12% (3)	20% (5)	28% (7)
Living with your partner	23% (17)	12% (3)	24% (6)	32% (8)
Separated	1% (1)	4% (1)	0	0
Divorced	3% (2)	4% (1)	4% (1)	0
Widowed	0	0	0	0
Single, never married	53% (40)	68% (17)	52% (13)	40% (10)
Worked in the past 12 months				
Yes — Full time	49% (37)	44% (11)	52% (13)	52% (13)
Yes — Part time	29% (22)	28% (7)	24% (6)	36% (9)
Worried about having enough food for themselves or their family in the past 30 days				
Yes	21% (16)	16% (4)	16% (4)	32% (8)
Health self-report				
Excellent	23% (17)	16% (4)	24% (6)	28% (7)
Very good	35% (26)	32% (8)	36% (9)	36% (9)
Good	32% (24)	44% (11)	24% (6)	28% (7)
Fair	11% (8)	8% (2)	16% (4)	8% (2)
Poor	0	0	0	0
Don't know	0	0	0	0

	Total N = 75 percent ^d (n)	Atlanta, GA N = 25 percent ^d (n)	Baton Rouge, LA N = 25 percent ^d (n)	Jackson, MS N = 25 percent ^d (n)
Number of children given birth to				
0 children	57% (43)	68% (17)	52% (13)	52% (13)
1 child	16% (12)	4% (1)	16% (4)	28% (7)
2–3 children	19% (14)	16% (4)	24% (6)	16% (4)
4 + children	8% (6)	12% (3)	8% (2)	4% (1)
Currently pregnant				
Yes	1% (1)	0	4% (1)	0
Primary method of birth control				
None	11% (8)	0	28% (7)	4% (1)
The Pill (Birth control pills)	5% (4)	4% (1)	0	12% (3)
The Shot (Depo)	13% (10)	8% (2)	16% (4)	16% (4)
An implant	11% (8)	8% (2)	8% (2)	16% (4)
The Patch	4% (3)	0	8% (2)	4% (1)
The Ring (a hormone ring used inside the vagina)	3% (2)	0	4% (1)	4% (1)
Condoms	33% (25)	52% (13)	20% (5)	28% (7)
Diaphragm, the sponge or a cervical cap	0	0	0	0
IUD	7% (5)	8% (2)	4% (1)	8% (2)
Morning-after pill (Plan B)	1% (1)	0	0	4% (1)
Spermicides (foam, gel, cream, suppositories)	0	0	0	0
Tubes are tied (tubal ligation)	1% (1)	4% (1)	0	0
Rhythm method or natural family planning	1% (1)	4% (1)	0	0
Partner had a vasectomy	0	0	0	0
Pull out	8% (6)	8% (2)	12% (3)	4% (1)
STI diagnosis in past 12 months				
Yes	5% (4)	4% (1)	12% (3)	0
Number of HIV tests in past 12 months				
None	21% (16)	20% (5)	28% (7)	16% (4)
1 time	25% (19)	32% (8)	32% (8)	12% (3)
2 or more times	53% (40)	48% (12)	40% (10)	72% (18)
More than 1 male sexual partner in past 12 months				

	Total N = 75 percent ^a (n)	Atlanta, GA N = 25 percent ^a (n)	Baton Rouge, LA N = 25 percent ^a (n)	Jackson, MS N = 25 percent ^a (n)
Yes	33% (25)	36% (9)	40% (10)	24% (6)
Vaginal sex in past 12 months				
Yes	96% (72)	96% (24)	96% (24)	96% (24)
Anal sex in past 12 months				
Yes	16% (12)	20% (5)	16% (4)	12% (3)
Condom use in past 12 months				
Never used	16% (25)	24% (6)	40% (10)	36% (9)
Always used only for vaginal sex	7% (5)	0	8% (2)	12% (3)
Sometimes used for vaginal sex	48% (36)	56% (14)	44% (11)	44% (11)
Always used for vaginal sex	1% (1)	4% (1)	0	0
Sometimes used of anal sex	0	0	0	0
Always used for both vaginal and anal sex	3% (2)	4% (1)	0	4% (1)
Sometimes used for both vaginal and anal sex	8% (6)	12% (3)	8% (2)	4% (1)
I believe a daily medication to prevent HIV would actually prevent HIV				
True	79% (59)	84% (21)	68% (17)	84% (21)
If available, medications to prevent HIV are expensive				
True	77% (58)	80% (20)	68% (17)	84% (21)
If available, medications to prevent HIV have many side effects				
True	57% (43)	52% (13)	68% (17)	52% (13)
I would take a medication every day to prevent HIV				
True	48% (64)	72% (18)	72% (18)	48% (12)
I would feel comfortable talking to my doctor about medications to prevent HIV				
True	95% (71)	96% (24)	92% (23)	96% (24)
Do you know anyone on PrEP?				
Yes	20% (15)	20% (5)	20% (5)	20% (5)

^a Percents rounded

Table 2
Illustrative quotes describing acceptability and adoptability of emerging PrEP products among young black women in the Southern US (*n* = 75)

Acceptability
<i>Long and short-term side effects</i>
You don't know how [long-acting injection] will affect someone. I mean, that's a challenge in itself. You just don't know how bad it's going to do them. You just don't know...I mean, some people could have, like, you know, bad reactions to it — stomach issues, severe headaches, migraines, blurred vision. You just don't know. — 33-year-old, Jackson, MS The area around the implant might be bruised for some days. So, I don't know how that painful is, but I'm sure it's painful. So, coping up with the pain, I think it's a challenge for me. — 28-year-old, Jackson, MS How far in there are they inserting [intravaginal ring]? What is the cleansing aspect of it? Like, what is going to stop it from collecting bacteria and things like that in there? What's the sterile part of it? — 29-year-old, Atlanta, GA If there are minor side effects, like, I wouldn't mind minor and short term. I would mind if there are long-term side effects. — 26-year-old, Jackson, MS
<i>Physical or psychological discomfort and trust</i>
I would think that the [skin implant] can move. I think that would be the biggest thing. I know a lot of women who have had that issue where it [contraceptive implant] has moved. — 25-year-old, Atlanta, GA My question would be, and I feel like especially just knowing that this study is specifically with African American women, I feel like most women would want to know, like, 'Okay, so what's the catch?' You know, what am I having to, like, give up essentially? Versus, like, for example, like I said with my IUD, I know that's hurting me physically. And there have been cases where, for some women, it can possibly lead to infertility, so I think having this sort of contraception [intravaginal ring] ...just women want to know, like, what all am I taking on with this? Okay, it prevents these two things, but what are the risks, if any? — 25-year-old, Atlanta, GA The fact that [long-acting injection] is a shot, period. Most people don't like shots at all because of the pain that it do leave and the soreness that it do leave after you get the shot. — 31-year-old, Baton Rouge, LA I wouldn't have [skin implant] inserted in my arm for the simple fact of me not knowing, I'm just really experimenting because I'm not sure how that's going to affect [me] if it affects [me] at all. And like I said this is an experiment because these are all new; they have never been tried. — 31-year-old, Jackson, MS
<i>Method of administration</i>
[I am concerned by] the need to cut over the same cut again, the same skin [for the skin implant]. For Black women that really may not be a good idea. A lot of us are prone to scarring and keloids. — 28-year-old, Atlanta, GA I've always just, for me personally, I've always just kind of been weird about inserting things like [intravaginal rings]. — 30-year-old, Jackson, MS Most people don't like shots at all because of the pain that it do leave and the soreness that it do leave after you get the shot. — 31-year-old, Baton Rouge, LA
<i>Effect on fertility</i>
Before [today] I said I wouldn't do the [intravaginal] ring but if it's supposed to prevent HIV as well [as pregnancy], it would be something that I would consider. — 33-year-old, Jackson, MS That's what I want! That's the first thing that comes to mind. I mean, it prevents pregnancy and HIV, cause that's the one thing that my [contraceptive] ring can't prevent is HIV, so it would be really cool to have something that prevents both! — 21-year-old, Baton Rouge, LA You said [long-acting injection] doesn't prevent pregnancy. I think everyone might want to know if it causes, if people could have it if they were pregnant, like, what kind of things it would cause to women that are currently pregnant or that want to be pregnant in the future... — 33-year-old, Jackson, MS First thing that comes to my mind is the same thing that's in my arm now; the birth control... I've already went through something similar, so my stance with getting the birth control [skin] implant in my arm was not a bad experience. The same procedures that they use to implant this is kind of the same thing that they would use to implant this device. — 21-year-old, Jackson, MS
<i>Frequency of use or duration of effectiveness</i>
This one [skin implant] for me is the 100% go. It lasts six months and provides the extra sense of security that you don't have to worry about. — 21-year-old, Jackson, MS

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No, and then [skin implant] only lasts six months, and then with the IUD it lasts five years. You know, I think that's more worth[while] than this...I'd rather be celibate than do all that. — 31-year-old, Atlanta, GA

I have a highly sensitive area and I would probably...I might get infected with something like that (intravaginal ring). I don't think I could have anything in me for that long. — 30-year-old, Jackson, MS

I have a very low pain tolerance and needles scare me, but I feel as if [long-acting injection] just once per month, then all I can do is one time and get it over with and just settle for a little pain. — 21-year-old, Baton Rouge, LA

[Skin implant] only lasts six months?! Mm-mm [negative]. All that cutting and putting it under the skin and I can't even have it for a year?! — 28-year-old, Atlanta, GA

Adaptability

Intravaginal ring adaptability considerations

No incisions, no cutting, no worrying about anything having to heal... — 33-year-old, Jackson, MS

You can extract it yourself if something's not going how your doctor said it's supposed to go versus the shot. I don't know how long [that] stays in your body. Or, you know, if you start to have a reaction to it, there's no way for you to remove it. It's in your system. And then again, with the one that they put into your arm, the little plastic, it's more permanent. You have to go get that professionally removed. You can't cut it out. — 29-year-old, Atlanta, GA

Intravaginal ring as rejected choice

I don't like inserting anything into my body and if I had to do it myself, I definitely wouldn't feel comfortable doing it. — 34-year-old, Baton Rouge, LA

Because, like, if I can put it in myself, I don't think it's going to work...I really don't want to work that hard to get to intimacy. I'd rather just have my doctor put whatever there and go on about my sexual life. — 30-year-old, Atlanta, GA

"[I'm] very afraid when it comes to my vagina, I don't really like inserting things down there. — 28-year-old, Jackson, MS

I think it's all mental, not because it has any physical side effect, but it's all mental for me. Same way I wouldn't go for the IUD [intrauterine device] — 29-year-old, Jackson, MS

Long-acting injection adaptability considerations

It's the most convenient, it's the least invasive, and probably it would just be the easiest. — 31-year-old, Baton Rouge, LA

I would pick the injection because at least it's just a one-time thing. I don't have to worry about [something] sitting inside, under my skin or inside my womb and me thinking that I could damage myself by using it. — 34-year-old, Baton Rouge, LA

Long-acting injection as rejected choice

The product itself, it's amazing, but the fact that it's an injection, yeah. I don't like [that]. I think it's a phobia in me, yeah. — 26-year-old, Jackson, MS

You'd have to get [the long-acting injection] every [other] month. You'd have to pay for the visit and if you don't have insurance and things of that nature, then that can be kind of costly... unless you could have it less frequently... maybe, oh goodness, every three to four months, then that's only three appointments every year. That's reasonable... — 25-year-old, Atlanta, GA

Skin implant as overall rejected choice

It's just the foreign objects in my body. I don't like that. — 23-year-old, Atlanta, GA

I hate needles, so I mean, you having to sit there and literally cut and put something under my skin and knowing that you're going to have to come back and do it over and over again and keep using it. That's just a no for me. — 33-year-old, Jackson, MS