

# **Sexual and gender minority adolescents' preferences for educational PrEP social marketing campaigns: A Pre-implementation Study**

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# Sexual and gender minority adolescents' preferences for educational PrEP social marketing campaigns: A Pre-implementation Study

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## Abstract

**Background:** Sexual and gender minority (SGM) adolescents in the U.S. are disproportionately affected by HIV. Although pre-exposure prophylaxis (PrEP) is a highly effective biomedical HIV prevention method, PrEP awareness and uptake among SGM adolescents is low. There are no teen-centered PrEP social marketing campaigns in the U.S., which have the potential to increase awareness and interest in PrEP. To address this gap, this qualitative study examined SGM adolescents' needs and wants regarding teen-centered PrEP social marketing campaigns.

**Objective:** This study intends to ascertain sexual and gender minority adolescents' preferences for content, design, and implementation of educational PrEP social marketing campaigns.

**Methods:** Chicago-area SGM adolescents (N = 56; Mage=18.2 years; 64.4% racial/ethnic minority) participated in online asynchronous focus groups from February to May 2021. Questions elicited their preferences for content, design, and delivery of SGM teen-centered PrEP campaigns.

**Results:** Adolescents expressed a need for PrEP campaign messaging that provides simple, accurate, and easily accessible information (e.g., what is PrEP, for whom is PrEP indicated, where and how to access PrEP). They described how messaging should address issues related to their developmental stage and identities (e.g., how to talk to a doctor, whether PrEP was for all adolescents or just those in groups most vulnerable to HIV), clearly offer specific resources, and testimonials from other SGM adolescents. They desired colorful and highly inclusive PrEP campaign assets that felt authentic and featured young people themselves, and suggested online (e.g., TikTok) and offline spaces (e.g., libraries, malls) for campaign delivery.

**Conclusions:** These findings lay the groundwork for designing teen-centered educational PrEP campaigns in Chicago and beyond. Designing campaigns guided by SGM adolescents' voices can ensure that materials are acceptable and address the most salient barriers and facilitators to their ability to access PrEP and sexual healthcare services.

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## Original Manuscript

## Sexual and gender minority adolescents' preferences for educational PrEP social marketing campaigns: A Pre-implementation Study

### Abstract

**Introduction:** Sexual and gender minority (SGM) adolescents in the U.S. are disproportionately affected by HIV. Although pre-exposure prophylaxis (PrEP) is a highly effective biomedical HIV prevention method, PrEP awareness and uptake among SGM adolescents is low. There are no teen-centered PrEP social marketing campaigns in the U.S., which have the potential to increase awareness and interest in PrEP. To address this gap, this qualitative study examined SGM adolescents' needs and wants regarding teen-centered PrEP social marketing campaigns. **Methods:** Chicago-area SGM adolescents (N = 56;  $M_{age}=18.2$  years; 64.4% racial/ethnic minority) participated in online asynchronous focus groups from February to May 2021. Questions elicited their preferences for content, design, and delivery of SGM teen-centered PrEP campaigns. **Results:** Adolescents expressed a need for PrEP campaign messaging that provides simple, accurate, and easily accessible information (e.g., what is PrEP, for whom is PrEP indicated, where and how to access PrEP). They described how messaging should address issues related to their developmental stage and identities (e.g., how to talk to a doctor, whether PrEP was for all adolescents or just those in groups most vulnerable to HIV), clearly offer specific resources, and testimonials from other SGM adolescents. They desired colorful and highly inclusive PrEP campaign assets that felt authentic and featured young people themselves, and suggested online (e.g., TikTok) and offline spaces (e.g., libraries, malls) for campaign delivery. **Conclusion:** These findings lay the groundwork for designing teen-centered educational PrEP campaigns in Chicago and beyond. Designing campaigns guided by SGM adolescents' voices can ensure that materials are acceptable and address the most salient barriers and facilitators to their ability to access PrEP and sexual healthcare services.

**Keywords:** Social Marketing Campaigns, Sexual and Gender Minority, Adolescent, HIV, PrEP, Human Centered Design, Implementation Science, Dissemination



## Introduction

Adolescents and young adults 13-24 years old in the United States (U.S.) were disproportionately affected by HIV, accounting for 19.3% of new diagnoses in 2022<sup>1</sup>. Surveillance data in Cook County, IL, an Ending the HIV Epidemic (EHE) jurisdiction that includes Chicago and its surrounding areas, show that 82.3% of HIV cases among youth 13-29 were among men who have sex with men, 59.7% were among Black sexual and gender minority (SGM) youth, and 20.3% among Latino SGM youth<sup>2</sup>.

Pre-exposure prophylaxis (PrEP) [3] refers to HIV prevention medication regimens that include oral emtricitabine-tenofovir disoproxil fumarate (FTC-TDF, Truvada®) or FTC-tenofovir alafenamide (FTC-TAF, Descovy®), and long-acting injectable cabotegravir (CAB-LA, Apretude®). PrEP, when used consistently and correctly, is a highly effective biomedical prevention strategy<sup>3</sup> preventing up to 99% of HIV infections when taken as prescribed<sup>4,5</sup>. Despite the U.S. FDA approval of oral PrEP for individuals younger than 18 in 2018, and LAI-PrEP in 2021<sup>6</sup>, uptake of PrEP remains subpar in this age group. One study that used U.S. pharmacy claims data to estimate adolescent PrEP usage<sup>7</sup> found that of the 6,444 youth aged 13-19 who were prescribed PrEP in 2021, just 12% were under age 18. Across several studies using convenience samples, self-reported PrEP uptake among SGM youth aged 14-17 has been consistently low, ranging from 2.0% to 5.9%<sup>8-12</sup>.

Awareness and knowledge of PrEP are two significant barriers to its use among adolescents. In U.S.-based studies PrEP awareness among SGM adolescent samples has varied from 15% to 55%<sup>14-17</sup>, with higher rates observed in studies consisting of participants who had previously taken part in HIV prevention research where they learned about PrEP. Several demographic, social, cultural, and structural factors relate to SGM youth PrEP awareness<sup>13-17</sup> including older age, greater educational attainment, and better access to sexual healthcare<sup>18,19</sup>. Research also suggests adolescents have limited knowledge about PrEP beyond the fact that it prevents HIV, and have misconceptions about PrEP, such as that it is only available for those aged 18 and older or only for cisgender men



<sup>9,20,21</sup>. Further, even when SGM adolescents are aware of PrEP, they may likely face numerous additional developmental, socioeconomic, and sociocultural barriers to obtaining and adhering to PrEP, including concerns about parental involvement, affordability, the need for but difficulty getting to regular clinic visits independently, side effect concerns, and lack of provider training in adolescent PrEP provision. These barriers are especially prominent among SGM adolescents of color<sup>8,10,12,22-24</sup>.

Social marketing campaigns, which integrate marketing, psychology, and public health principles, have immense potential to promote PrEP awareness and uptake among SGM adolescents, creating positive changes in attitudes, behaviors, and awareness for the greater good of society<sup>25,26</sup>. The key components of social marketing are often referred to as the “4 Ps”<sup>27</sup>. *Product* includes messages about the target behavior and its attributes, its health benefits (e.g., PrEP awareness, uptake, and HIV prevention), and perceived non-health benefits of the behavior (e.g., fulfilling social needs). *Price* refers to real and perceived financial or practical costs or other barriers to engaging in the target behavior from the consumers’ perspective, and strategies to lower these costs. *Place* involves determining where the target audience engages in the behavior (in this case, where one obtains PrEP) and implementing ways to make the end behavior, service, or product more accessible. *Promotion* entails the ways persuasive messages are designed and delivered to the target audience<sup>27</sup>. Other models also include a fifth P – *Policy* – which includes policy-level barriers and facilitators to engaging in the desired behavior that should be messaged to the audience<sup>28</sup>. For instance, in some states, PrEP is explicitly included in laws permitting adolescents to access certain types of healthcare without parental consent (e.g., mental health and substance use treatment, STI/HIV prevention, testing and treatment, and other sexual and reproductive healthcare)<sup>29</sup>.

Social marketing campaigns take effect on both population and individual levels<sup>30</sup>, and in the case of adolescents and PrEP, can circumvent the need to rely on intermediaries such as parents, healthcare providers, and educators by reaching them quickly and directly through multiple forms of media (e.g., social media, websites, posters). For example, PrEP4Love, a Chicago-based PrEP

awareness campaign designed for Black adult gay and bisexual men and transgender and cisgender women reached 41 million unique viewers and was associated with a threefold increase in calls to a PrEP hotline over the two months following the campaign launch, most of whom were interested in learning more about or being linked to PrEP<sup>31,32</sup>. The campaign's success in Chicago led to it being adapted by a French AIDS service organization to raise PrEP awareness across France<sup>33</sup>.

Although adolescent-inclusive sexual health campaigns exist, such as Get Yourself Tested and National Youth HIV/AIDS Awareness Day, few specifically include PrEP awareness. Social marketing draws from exchange theory, which suggests that individuals consider perceived costs and benefits when making decisions, and focuses on segmenting the population into distinct audiences (i.e., market segmentation) that are more likely to respond to a particular campaign or campaign component<sup>34</sup>. As such, social marketing campaigns can be designed to be developmentally appropriate for adolescents to highlight their specific preferences and needs<sup>35</sup>. For example, in contrast with PrEP4Love, an explicitly sex-positive campaign, adolescents may be uncomfortable with messages around pleasure and sexuality and instead may prefer messages about friendship and romance<sup>22,23</sup> that elicit positive emotions<sup>36,37</sup>. Moreover, where campaigns are placed is critical in ensuring the campaign reaches its intended audience. For instance, PrEP4Love was often promoted in-person (e.g., health clinics, public transit, nightlife establishments) with a website, hotline, and social media presence. However, SGM adolescents may not frequent or be able to access the same physical or online places (e.g., bars, adult-focused sexual health clinics), or may not pay attention to campaign materials in public spaces that portray intimacy among adults. Thus, an adolescent-focused campaign may predominantly rely on online media with some in-person campaign assets (e.g., posters) in youth-centric locations, such as in or near schools, or public places like libraries and recreational centers.

Here, we investigated whether and how to undertake an SGM adolescent-centered PrEP social marketing campaign in the Chicago area. Drawing from human-centered design<sup>38</sup> and rapid,

responsive, relevant implementation research<sup>39</sup> approaches, which both emphasize understanding end-user/community needs and preferences from the beginning and incorporating them through the design, intervention development, and implementation process, we conducted a qualitative study to explore SGM adolescents' perspectives on existing PrEP and sexual health campaigns, their preferences for campaign content and design, and their ideas on campaign implementation.

## Methods

### Recruitment

SGM adolescents in Cook County, IL were recruited via social media advertisements (e.g., Instagram, Snapchat), existing participant registries, and through collaborations with local community-based HIV service organizations from February to May 2021. Social media advertisements were designed to reach adolescents interested in SGM culture (e.g., LGBTQ+ organizations, celebrities, and important figures), and study staff reached out to individuals in the participant registries via text or email to inform them of a new study opportunity. Online advertisements and registry outreach directed prospective participants to the study's online screener. Eligible adolescents included those who 1) were 13 – 19 years old, 2) lived in Cook County, IL, 3) identified as a sexual or gender minority, 4) were HIV negative or unknown status, 5) had access to the internet, and 6) could read in English at an 8<sup>th</sup> grade level.

### Procedures

Study staff contacted adolescents who passed the eligibility screener for a Zoom call, during which staff verified adolescents' eligibility and understanding of the consent form. Then, study staff reached out to adolescents via their preferred contact method (phone call, text, or email) to provide a link to a 25-minute online baseline survey. Participants could select "I don't want to answer" for any item in the survey. Upon completing the baseline survey, study staff sent adolescents instructions to access an online forum that hosted asynchronous focus groups. Participants accessed the forum with unique logins and typed their written responses to the question prompts at their convenience. An

introductory forum included a video greeting from the study team members to participants, an overview of the focus group ground rules, and an icebreaker. There were seven topics in total, with 1-5 questions within each topic. All questions were posted beforehand, and participants had seven days to complete the focus group, with same-day probing questions from moderators. Five focus groups were conducted during the study period; each group was facilitated by two moderators with training in qualitative methods. Adolescents who completed at least four out of the seven topics received a \$40 digital Amazon gift card. All study procedures were approved by the university's Institutional Review Board with a waiver of parental permission for minor adolescents.

## **Measures**

### ***Sociodemographic Characteristics***

Participants self-reported their age, race/ethnicity, sex assigned at birth, sexual orientation, gender identity, outness to parents/guardians, parents/guardians' acceptance of SGM identity, and sources of sexual health information. Additional items assessed participants' HIV/STI testing history, perceived HIV risk, prior sexual experience, and engagement in HIV transmission risk behavior.

### ***General PrEP Questions***

Investigator-created items assessed participants' perceived norms of PrEP uptake ("I'd like you to imagine 100 adolescents like you. How many of these 100 adolescents do you think are likely to use PrEP"), their PrEP awareness (*Yes; No*), lifetime uptake (*Yes; No*), and interest in initiating PrEP (*Yes; No*). Participants also self-reported perceived difficulty of (1 = *not at all difficult*; 5 = *very difficult*) and confidence in their ability to access PrEP (1 = *not at all confident*; 5 = *very confident*).

### ***PrEP Attitudes and Stigma***

A scale developed by Walsh in 2019<sup>40</sup> was used to assess participants' attitudes toward PrEP and perceived stigma associated with PrEP use. Five items on PrEP attitudes assessed participants'

perceived effectiveness, safety, and ease of adherence of PrEP use. Five items on PrEP stigma asked about participants' perspectives of individuals who use PrEP (e.g., "people who take PrEP are promiscuous") and concerns about stigma associated with PrEP use (e.g., "if I were to take PrEP, I would be concerned if my friends found out I was taking it"). Participants responded to all items on a 5-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*). A composite score on PrEP attitudes ranged from 5 to 25, with higher scores denoting more positive attitudes towards PrEP's effectiveness, safety, and ease of adherence. A composite score on PrEP stigma also ranged from 5 to 25, with higher scores indicating greater perceived stigma towards individuals who use PrEP.

### Focus Group Guide

An investigator-created focus group guide assessed participants' reactions to existing PrEP campaigns and preferences for future adolescent PrEP campaigns. First, we presented three existing PrEP/HIV campaigns (PrEP4Love, Get Yourself Tested <sup>41</sup>, and the National Youth HIV/AIDS Awareness Day Campaign<sup>42</sup>) to adolescents. Questions assessed participants' reactions to these campaigns (e.g., "How does this campaign make you feel?"; "Name all the things you like and don't like about this campaign."), areas of improvement (e.g., "What changes would you make to the campaign to make it more appealing and interesting to LGBTQ+ adolescents? What is missing?"), and comparisons (e.g., "What aspects of each campaign do you like the best?").

Next, we assessed adolescents' preferences for message delivery and dissemination (e.g., "What online spaces/platforms would be good places to post ads/share info about PrEP for LGBTQ adolescents?"). The next topic assessed participants' preferences on campaign design and content. Sample questions included "What words and/or phrases would capture your and other LGBTQ+ adolescents' attention" and "What types of images would you want to include in your PrEP campaign." The following questions covered developmental and cultural considerations of campaign design (e.g., "How should teen PrEP campaigns differ for: Younger vs. older LGBTQ+ adolescents; White vs. racial/ethnic minority adolescents?), as well as perspectives on messaging for parents (not

described here).

Finally, adolescents joined a creative activity, which prompted them to either design mock PrEP campaign content or provide a sample image/video of a campaign they liked and an explanation, or to develop a mood board reflecting colors, feelings, or content that might inspire a future campaign. Information about study payment and HIV/PrEP resources were provided at the end of the group.

## Data Analysis

Descriptive analyses for all quantitative variables were conducted in R x64 3.6.1. Focus group data were analyzed using rapid qualitative analysis, a method commonly used in public health and implementation research to quickly identify actionable themes in qualitative data; results of such analyses have been shown to correlate highly with traditional qualitative analysis<sup>43-45</sup>. First, study staff transcribed participants' responses on the online forum to Microsoft Excel and cross-validated for accuracy. Different tabs were also created in Excel to separate responses from the various focus group topics (e.g., reactions to existing campaigns, preferences for campaign design). Two coders engaged in data reduction by emphasizing informative sections of participants' responses and removing redundant or filler words. This process resulted in concise data that spoke to the study objectives. Following the data reduction, the coders independently examined all excerpts, assigned codes to all excerpts, refined the code definitions iteratively, and held discussions to reconcile differences. Quotes presented below include participant age, gender, race/ethnicity, and sexual orientation.

## Results

### Participant characteristics

The analytic sample included 56 adolescents who answered at least one question in the focus group (**Table 1**). Participants' ages ranged from 14 to 19 years ( $M_{age} = 18.16$ ;  $SD = 1.22$ ).

**Table 1:** *Participant Demographics (N = 56)*

<b>Age</b>	<b>Variables</b>	<b><i>n</i></b>	<b>%</b>
<i>M</i> = 18.16; <i>SD</i> = 1.22	14	1	1.8
	15	2	3.6
	16	5	8.9
	17	16	28.6
	18	16	28.6
	19	16	25.6
<b>Sex assigned at birth</b>	Male	28	50.0
	Female	28	50.0
<b>Race/ethnicity</b>			
	Asian	6	10.7
	Black	9	16.1
	Hispanic	12	21.4
	Multiracial	9	16.1
	Non-Hispanic White	19	33.9
	No answer	1	1.8
<b>Gender identity</b>			
	Agender	1	1.8
	Cis male	20	35.7
	Cis female	12	21.4
	Trans man	5	8.9
	Trans female	3	5.4
	Queer	4	7.1
	Nonconforming	3	5.4
	Questioning	6	10.7
	N/A	2	3.6
<b>Sexual orientation</b>			
	Asexual	1	1.8
	Bisexual/Pansexual	23	41.1
	Gay	20	35.7
	Lesbian	3	5.4
	Queer	6	10.7
	Questioning	3	5.4
<b>Prior sexual experiences (allowed multiple chooses)</b>			
	People with penis	33	58.9
	People with vaginas	17	30.4
	Never had sex	19	33.9

Note: *M* = Mean; *SD* = standard deviation; percentages may exceed 100% due to rounding ups.

Most participants (64.3%) identified as a racial/ethnic minority (21.4% Hispanic White; 16.1% Black; 16.1% multiracial; 10.7% Asian), and 1.8% did not report their racial/ethnic identity. The

sample also included a balanced distribution of participants' sex assigned at birth (50% male; 50% female). Regarding gender identity, half of the sample reported an identity on the transgender spectrum (8.9% trans man; 7.1% queer; 5.4% gender nonconforming; 5.4% trans female; 1.8% agender), 10.7% were questioning their gender identity, and 3.6% did not report their gender identity. The most frequently reported sexual orientation labels were bisexual/pansexual (41.1%), gay (35.7%), and queer (10.7%). More than half of the sample (69.6%) was out to their parents/guardians, and 66.0% reported to have accepting parents/guardians.

Regarding sexual health, more than half of the sample (66.1%) had prior sexual experience. Nearly half (48.2%) reported having had condomless sex, and 12.5% had sex with someone who was HIV positive or of unknown status. Less than half of the sample had ever tested for HIV (42.9%) or STIs (32.1%). One-third (33.9%) of adolescents worried about becoming HIV positive, and 19.7% perceived themselves to be at risk for HIV. The most frequently reported sources of sexual health information included social media (53.6%), LGBTQ+ websites (26.8%), and porn websites (25.0%); the most popular social media platforms for seeking sexual health information listed by participants were Instagram (66.7%), TikTok (57.4%), and Snapchat (31.5%).

More than half of the sample (69.6%) was aware of PrEP. Only 3.6% had ever taken PrEP, and 94.6% were not aware that PrEP could be prescribed to adolescents younger than 18. More than a quarter (37.5%) of adolescents reported that they felt accessing PrEP would be easy, and 50.0% reported confidence in their ability to access PrEP. Adolescents reported a relatively positive attitude towards PrEP effectiveness, safety, and ease of adherence ( $M = 19.93$  out of 25;  $SD = 2.91$ ) and reported moderate levels of PrEP stigma ( $M = 11.91$  out of 25;  $SD = 4.39$ ). Regarding perceived norms, SGM adolescents estimated that 37.9% of their peers would be interested in taking PrEP; 14.3% of participants reported being interested in taking PrEP in the

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**Table 2.** *PrEP Awareness, Use, and Attitudes (N = 56)*

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Variables	Response Options	<i>M</i>	<i>SD</i>
<b>Perceived Norm of PrEP Uptake (%)</b>		37.88	24.11
<b>Attitude towards PrEP <sup>a</sup></b>		19.93	2.91
<b>Stigma towards Others Using PrEP <sup>b</sup></b>		11.91	4.39
		<b>%</b>	<b><i>n</i></b>
<b>PrEP Awareness</b>	Yes	69.6	39
	No	28.6	16
	No answer	1.8	1
<b>Awareness of PrEP for Adolescents</b>	Yes	5.4	3
	No	94.6	53
<b>PrEP Use</b>	Yes	3.6	2
	No	96.4	54
<b>Interest in PrEP Use (<i>n</i> = 17)</b>	Yes	47.1	8
	No	29.4	5
	No answer	23.5	4
<b>Perceived Difficulty in PrEP Access</b>	Very easy	12.5	7
	Somewhat easy	25.0	14
	Neither difficult nor easy	30.4	17
	Somewhat difficult	30.4	17
	Very difficult	1.8	1
<b>Confidence in PrEP Access</b>	Not at all confident	7.1	4
	Somewhat unconfident	16.1	9
	Neither confidence nor unconfident	26.8	15
	Somewhat confident	39.3	22
	Very confident	10.7	6

future. See **Table 2** for more details.

Note: PrEP = Pre-exposure prophylaxis; M = mean; SD = standard deviation; <sup>a</sup> scores range from 5-25, with higher scores indicating more positive attitudes toward PrEP; <sup>b</sup> scores range from 5-25, with higher scores indicating greater stigma against PrEP use.

### Reactions to Existing PrEP Campaigns

Participants were presented with the PrEP4Love, Get Yourself Tested, and the National Youth HIV/AIDS Awareness Day Campaigns and were asked to react to the design, images, and written messages of each. Adolescents generally favored when campaigns highlighted *diversity* in sexual/gender identities, body type, and couple types (e.g., couples depicting transgender and cisgender individuals), and disliked when campaigns lacked representation of these groups including adolescents. For example, a 19-year-old gay Asian male commented: “I really like that the images show many different couples, regardless of race, gender, sexuality, etc.” That said, they noted that the intentionally sensual nature of the PrEP4Love campaign was off-putting (e.g., “It seems too

sexual/sensual and likely would make me look away before reading the [tag]line”, a 17-year-old non-Hispanic White bisexual/pansexual male). Regarding campaign taglines, SGM adolescents favored *straightforward* messages (e.g., “The simplicity of the campaign definitely works well. I think that it conveys simple information... while simultaneously being informative enough”, 17-year-old Hispanic bisexual male), particularly those that challenged HIV stigma. Respondents disliked when messages were too broad and lacked clarity or PrEP-related resources or information. Adolescents also noted that the National Youth HIV/AIDS Awareness Day campaign messages were “too busy and wordy,” (17-year-old non-Hispanic White bisexual/pansexual female), and felt that the Get Yourself Tested campaign had a clear call to action but lacked further resources (“For GYT... I do think that there could have been a little bit more information,” a 19-year-old Hispanic questioning female). With respect to campaign design and images, participants preferred when existing campaigns had *bright, eye-catching designs* and disliked when fonts were difficult to read and when campaigns did not use teenage models.

### **Preferences for Future Teen-Centered PrEP Campaigns**

Here, participants’ preferences regarding the design of future teen-centered PrEP campaigns were organized based on the 4 P's framework<sup>27</sup>.

#### **Product**

Participants’ comments suggested that social marketing campaigns should specify certain details about PrEP and HIV prevention for adolescents; mention its benefits among youth who have used PrEP; include messages that normalize SGM health, experiences, and relationships; and include ample resources about PrEP, including information about how to talk to a healthcare provider about PrEP.

Participants described wanting campaigns to give information regarding the purpose and effectiveness of PrEP and how to access it (e.g., “I think it should include more... about HIV, what PrEP is, and the cost of PrEP” – 19 year old, White, queer, genderqueer teen assigned male at birth).

Participants also desired more tangible information about PrEP statistics and teens' lived experiences obtaining and being on PrEP: "Including statistics, quotes, and real experiences from adolescents would make it more relatable and emphasize the importance" (19-year-old Hispanic and White questioning female). Other participants also emphasized the importance of including resources about PrEP access, such as offering a comprehensive listing of local teen-friendly PrEP providers, information about talking to a provider about PrEP, and resources about insurance coverage and paying for PrEP. A 19-year-old Black transman who was questioning his sexual orientation mentioned, "I think you're missing financial information (is it free?), contact information... and you can say "talk to your doctor" all you want but like, when I was [younger] I didn't have a doctor. Who would I go to?" This participant summarized common sentiments among the group regarding product information and how to frame this information to appeal to the audience: "I think that the dosing, how to get it, why it's good to take, and information regarding how it works (in a simplified manner), are all good things to include. If you just have a poster saying, "Take PrEP", nobody will take it, but if you say something closer to "Take PrEP, a once daily medication that keeps you 90% safe from HIV", it will be more effective" (19-year-old, White, bisexual female).

Respondents noted that PrEP messaging centering the needs of SGM adolescents, but that does not exclusively focus on SGM populations, would likely be beneficial to adolescents regardless of background or identity. This was perceived to help normalize SGM health, experiences, and relationships, but also show cisgender heterosexual teens that PrEP could be for them as well (e.g., campaign materials that say "PrEP is for everyone" that also depict teens of a variety of sexual orientations and genders). This focus on inclusive yet relatable messaging is reflected here: "The way that my friends explain PrEP to me is... you take the pill once a day, kinda like birth control (which is reassuring because we all know someone on birth control)" (18-year-old Black gay male). Youth described how portraying SGM adolescents authentically "just being themselves, like watching TV or enjoying outdoor activities" (17-year-old Black gay male) also can facilitate this sentiment in

PrEP campaigns. Last, another benefit of adolescent-centered PrEP campaigns is that they can foster a sense of inclusion and empowerment among adolescents (“I want to feel valued, supported, and seen, where people genuinely care about my sexual health and well-being” 18-year-old Asian gay male) which can help motivate them to consider taking actions to get on PrEP.

### **Price**

Most comments related to this domain identified referenced the price of PrEP (“A big part would be price of PrEP... and any side effects,” 16-year-old Hispanic gay male), effort involved in accessing it, and possibility of stigma and embarrassment with engaging with the campaign or seeking PrEP. Fewer teens surfaced concerns about side effects or the medication regimen itself.

One transgender teen explained the potential concerns about PrEP that a campaign may help address by relating it to their experiences seeking gender affirming care: “like when I was younger, I really wanted to go on hormones but... it felt like it would be impossible to get because I didn't fully understand how to access it and a lot of people were telling me how complicated it was. So, I think teens need reassurance that it is simple/easy to obtain prep and maybe even include a step-by-step guide on how to go on it?” (19-year-old White bisexual transman).

Several participants described how engaging with a PrEP campaign or talking about PrEP to a provider or clinic staff member, could be embarrassing or elicit judgment from others, which campaigns should proactively address. “I don't want to feel ashamed of talking about the topic. I want to feel respected and that I don't need to fear that others might judge me” (18-year-old Black gay female). Another participant described ensuring that the campaign had multiple ways to speak with a person about PrEP, such as a text line or online chat function, given young people's reluctance to speak on the phone: “I would include specific ways to get into contact about getting PrEP besides just a phone call because many teens would be way too anxious to call a stranger about that” (19-year-old non-Hispanic White gay male).

Participants were asked to articulate possible drawbacks of adolescent PrEP campaigns

focused on specific populations (e.g., SGM, racial/ethnic minority, younger adolescents). Although campaigns specifically for SGM individuals can ensure that PrEP awareness is increased among this population, as well as address certain concerns that these populations may have in relation to PrEP (“Black and Latinx people lack medical access and are wary of the medical system because it has mistreated them lots of times”, 18-year-old Hispanic bisexual female), participants described that this approach could downplay HIV vulnerability among cisgender heterosexual adolescents and perpetuate stigma within and toward the SGM community. An 18-year-old Black gay female summarized this concern, stating, “it may convey the message that HIV solely affects the LGBTQ community, rather than being a universal virus that impacts all of us.” Others suggested how campaigns should be attuned to developmental differences in adolescents, with older adolescents being more comfortable with more explicit sexual information or references, and younger adolescents possibly experiencing more shame or stigma in searching for sexual health information: “I feel like some younger people may feel embarrassment or shame in looking into preventative measures” (19-year-old, non-Hispanic White, bisexual female).

### **Place**

Here, participants primarily gave recommendations on how specific individual ‘champions’ or locations that can support youth wellbeing and health behavior could effectively communicate where and how adolescents could access PrEP, particularly for those who may be less familiar with navigating sexual healthcare.

This participant and others described how key influential adults and organizations (e.g., schools, accepting churches) could play a role in supporting adolescents’ access to PrEP, even if these locations did not offer PrEP themselves: “every school should have guidance counselors or at least a support group for LGBTQ+ teens. I go to a catholic school and recently this year we made a new group called "Unidos" "Together" in English. That group helped me so much with resources and it made me feel represented” (15 year old, Hispanic gay male). Similarly, some youth identified

public libraries as places that are accessible to and safe for adolescents, where they could learn more about PrEP with relative privacy: “I also think that libraries could work well because they are very trustworthy and when teenagers go to libraries, they are often alone to study or find books” (17 year old, White bisexual female).

### **Promotion**

Most of the participants’ feedback was focused on this P, and they articulated strategies that can raise awareness about PrEP among SGM adolescents through carefully crafted content, appealing graphic design, and strategic placement. Finally, participants were also asked to give examples of what these campaign materials might look like.

**Campaign Content.** This element was distinct from “product” in that it focuses more on message framing, tone, word choice, and market segmentation, than the features or benefits of the product itself. Regarding the phrasing of adolescent PrEP messages, participants expressed a preference for concise messages presented in casual language to increase engagement. Adolescents also highlighted that a campaign should have an affirming and empowering tone that is community-oriented, with several teens offering phrases such as “your health matters” or “let’s stop HIV together”.

Considering the influence of peers and role models on adolescents, participants also suggested including celebrities and social media influencers in future PrEP campaigns to increase campaign appeal. For example, a 16-year-old Hispanic gay male stated, “I would feature a well-known celebrity who is attractive and has been a strong supporter of the LGBTQ community.” Many also recommended involving adult authority figures, such as scientists, healthcare providers, and educators, for their credibility and expertise to address concerns about PrEP side effects or potential long-term effects, provided that their delivery was empowering and supportive rather than patronizing: “doctors/healthcare providers. This would help make PrEP campaigns feel more reliable and trustworthy” (17-year-old Black bisexual/pansexual female). Moreover, SGM adolescents

suggested featuring parents and other adults who may play influential roles in adolescents' healthcare (e.g., "parents who feel more comfortable with their adolescents taking PrEP", 16-year-old gay Asian male).

Although participants felt that teenagers should get the same access to basic PrEP information regardless of whether they lived or who they were, they acknowledged the importance of content segmented by population to address key differences: "As someone who went to school in the 'burbs but lives in the city, it tends to be a bit more conservative up there, so I would just be aware of that" (19-year-old White queer male); "you'd have to advertise in different types of locations, as suburban teens don't take public transportation for example" (17-year-old, Hispanic bisexual male). This included creating Spanish language materials to reach the large Spanish-speaking community in Chicago which could ultimately improve access: "...this community, which I'm also a part of, could benefit of having ads that are also in Spanish. If possible, just adapting ads to be more approachable and informative for other languages other than English." (18-year-old Hispanic bisexual female)

**Campaign Design.** Regarding campaign design, adolescents preferred eye-catching graphics like cartoons, avatars, and infographics: "...well thought out color schemes and easy-to-read fonts, along with statistical evidence that explains the effectiveness of PrEP [such as pie charts or bar graphs]" (18-year-old White gay male). Adolescents suggested that campaigns should avoid overly sexual images for discretion, with an 18-year-old Hispanic bisexual/pansexual female stating, "staying away from anything that reinforces stereotypes or is overly sexual [due to parents]." Moreover, many participants were clear that the campaign should avoid seeming too slick or corporate, which was viewed as untrustworthy, as described by this participant: "you need to get that attention in a way that is personable, to show that this isn't just something being peddled by a brand, and that it is something genuine and important, from queer folk, to queer folk... Make it real, make it raw, adding polish at the end removes a level of authenticity that is necessary for this level of trust." (19-year-old, White, queer trans woman)

Although adolescents acknowledged that there are benefits to market segmentation, they were emphatic that the campaign design should also be inclusive and diverse as they believed everyone could benefit from learning about PrEP: “I wouldn't necessarily exclude white bodies, but I would put an emphasis on people of color... it hurts literally no one to include them more and really only benefits. also, I think there shouldn't be much distinction between cis and trans [people regarding campaign content], but I do think that we need a bit more trans representation” (19-year-old, non-Hispanic White queer male).

**Campaign placement.** Participants emphasized that a teen-centered PrEP campaign should predominantly be online to reach teens regardless of their location. They suggested using smartphone applications and LGBTQ+ websites, social media such as Instagram, TikTok, and Tumblr, dating apps (e.g., Grindr, Tinder), music streaming apps (e.g., Spotify), and mobile games. Among these, social media, particularly TikTok, emerged as the most widely discussed online platform for campaign dissemination as it was perceived to have “a significant reach and tends to be LGBTQ+ friendly” (19-year-old Hispanic questioning female). Participants suggested avoiding Facebook (“I don't know many adolescents who actually use it. It's more popular with adults and the older generation”, 18-year-old Hispanic bisexual/pansexual female) and online spaces that feature skippable ads (e.g., “ads on video streaming services because many of us skip them and don't even pay attention to them,” a 16-year-old Hispanic questioning male) or have a reputation for tolerating more toxic online discourse (e.g., Reddit, Twitter/X).

Physical spaces recommended by participants included schools, public and entertainment venues like malls, public libraries, public transportation, and restaurants. These locations were favored due to their accessibility and convenience for SGM adolescents. Participants also recommended advertising in LGBTQ+ serving organizations, clinics like Planned Parenthood, pharmacies, and healthcare provider waiting rooms. These participants indicated that placement in waiting rooms could be beneficial: “family doc waiting rooms... if you have to talk to your doctor



about PrEP a reminder before going in would be good” (18-year-old White bisexual female). “The number one place it should be is at hospitals or healthcare pharmacies because it will generate a lot of trust from teens because it is in a healthcare facility. When you go get a check-up it will be easy to remember, and teens might even like to bring it up with their doctor in private” (18-year-old Black gay female).

Regardless of medium, participants suggested that physical and digital campaign assets all lead to centralized resources: “Having a QR Code that leads to a website with more information on physical advertisements... the idea of a hotline is fantastic.” (18-year-old, White, gay male), and that such resources should be comprehensive enough so that adolescents do not have to hunt for information elsewhere online: “The website should include all possible information about PrEP so that it's a one stop shop and so there is no way to walk into it blind... it will inform and persuade because they can just look at it and know, rather than having... to look all of it up on their own” (19-year-old, White bisexual female).

### **Example campaigns from focus group participants**

At the end of the focus group, participants were given this prompt: “We just asked you a bunch of questions about what a PrEP campaign for LGBTQ+ teens might look like. But some folks might prefer to share their thoughts visually.” Participants were given the option to share graphics or existing sexual health content that evoked what they wanted out of a PrEP campaign, or to design an example from scratch. Here, we offer several representative examples (Figures 1, 2, and 3) and their rationales.

Most participants who submitted an original entry gave examples formatted for social media like Instagram or TikTok. These two participants described clarity, directness, and inclusion in their designs: “the idea behind this one [Figure 1] was an Instagram ad that has simplicity, there's a hook at the top, only 2 things to read, cute stickers, an option to swipe up for more info. And the two things I found most important were the hashtag that I was able to make rainbow! And the symbols

for the other social media. I was able to get my point across that prep is for everyone, and a neat little reference is that the background somewhat resembles the bisexual flag, hinting that it doesn't matter if you have sex with men or women (or both or anywhere in between) and that prep is still for you" (17-year-old, Hispanic gay male).

Others submitted examples that included information in both English and Spanish, referencing the conversation earlier in the focus group about inclusion of Spanish speakers (Figure 2): "I figured that incorporating teens in the campaign in a nonsexual nature would... draw attention - these teens are also different, appearance-wise. For the information, I saw on a different forum that there should probably be information in both Spanish and English. Separating the information are gender symbols and PrEP pills that say, "PrEP for all" on them" (18 year old, Black, gay female).

One participant created a script for a commercial, which was reminiscent of the U.S. Trojan Man condom commercials<sup>46</sup> of the mid- to late-1990s (see excerpt, Figure 3). "I wrote a quick script for a hypothetical commercial. It's aimed at a (younger?) teen audience and ideal for platforms like TikTok, Snapchat, and Instagram. I think it could be either live-action or

**Figure 3.** Excerpt of proposed commercial or brief video for social marketing campaign.

INT.	A	TEEN	BOY'S	ROOM	LATE	AT	NIGHT
Two teens make out in bed until TEEN 1 pulls away.							
TEEN 1							
You sure you're ready?							
TEEN 2							
(smiling warmly)							
Mhm.							
TEEN 2 leans into continue kissing TEEN 1 when CAPTAIN PrEP, a caped, over-the-top superhero with an anti-HIV logo or a pill logo on their shield, flies through the wall. The terrified teens scream.							
CAPTAIN PrEP							
Fear not, young horndogs. It is only Captain PrEP here to make sure you don't get HIV.							
TEEN 1							
What the f*ck, you destroyed my room!							

Captain PrEP is unfazed

CAPTAIN PrEP  
(earnestly)

We all make sacrifices. But your sexual health shouldn't be one of them.

animated. This one would maybe be best aimed at teens who have not yet started having sex considering that's the situation in the commercial. The characters can be any gender/body type/sexual orientation. I also wrote it to be slightly raunchy since that will certainly appeal to/get teens attention" (19-year-old, White bisexual male).

## Discussion

### Principal Results

While PrEP has the potential to dramatically reduce the number of HIV infections averted among adolescents in the U.S., but its use among young people remains low, with individual studies reporting that less than 0.5% of adolescents who may benefit from PrEP have used it<sup>47,48</sup>. Social marketing campaigns may be an effective approach to improve PrEP awareness and uptake<sup>22,23,31</sup>, yet limited research has explored what adolescents want out of teen-centered PrEP campaigns. To our knowledge, this is among the first studies on SGM adolescents' perspectives on existing and future PrEP marketing and implementation. Our findings, framed around the "4 Ps" of social marketing (product, price, place, promotion) suggest that prior sexual health campaigns tailored for SGM adults, or for adolescents in general, do not meet the needs of SGM adolescents and that involving youth in the process of conceptualizing the content and implementation of PrEP campaigns<sup>39</sup> can ensure their relevance and success. Here, we discuss concrete takeaways from the focus groups that public health practitioners and implementers may consider incorporating into adolescent PrEP campaigns.

Overall, what adolescents wanted from PrEP campaigns aligned very closely with our prior work describing adult stakeholders' perceptions of what teens might need<sup>23</sup>. First, regarding *product*

and *price*, SGM adolescents expressed a desire for basic PrEP information in these campaigns that address potential barriers and costs teens may encounter. Several years after PrEP's FDA approval for adolescents, access to consumer-facing, adolescent-specific information on PrEP in the U.S. remains extremely limited. For instance, although consumer-facing information on the CDC website indicates that adolescents can take PrEP<sup>49</sup>, there are limited details that speak specifically to developmentally-specific considerations that surfaced here and in previous research on adolescents and PrEP<sup>9,10,12</sup>. An adolescent-focused social marketing campaign's website or assets could offer answers to the following questions, some of which may need to be tailored to reflect current state laws and policies: Do I need to involve my parents in the decision to take PrEP, as in some states PrEP is explicitly included in mature minors' right to healthcare, and in others it is unclear or implied<sup>50</sup>? What healthcare providers or clinics can prescribe PrEP to minors, as online PrEP locator tools lack information about whether these locations serve adolescents? What do I need to do to prepare for a PrEP appointment? What side effects does PrEP have? How do I pay for PrEP without my parents knowing? Moreover, since PrEP requires consistent engagement with the healthcare system (e.g., for oral PrEP, quarterly follow up appointments are recommended for HIV testing and labs), PrEP campaigns should offer resources that help youth feel more comfortable independently accessing care given that they may have limited experience doing so. Options to cover or defray PrEP medication and related labs/testing should be made explicit (e.g., coupons from pharmaceutical companies, requirements for insurance companies to cover PrEP prescriptions and services via the U.S. Affordable Care Act). In general, participants in this study were more concerned about how to access PrEP than its side effects, suggesting that apart from basic information on PrEP to increase its awareness, campaigns should focus on demystifying the process of obtaining, paying for, and sustaining PrEP for adolescents. Highlighting the real experiences that adolescents have being on and pursuing PrEP can make a social campaign more relatable according to our results. Such work has already been explored and shows potential to be incorporated into a future PrEP campaign<sup>51</sup>.

Regarding *place* and *promotion*, participants described wanting a primarily digital campaign implemented via social media. SGM adolescents are heavy users of social media<sup>52-54</sup> where they often seek and consume health content, and as such a digital-first campaign could reduce adolescents' embarrassment and stigma by reaching them where they are used to seeing health information already. Moreover, additional suggestions indicated participants wanted a campaign that acted as a "one stop shop" short of visiting a physical clinic – in other words, not simply a campaign that raised awareness and offered education in a centralized location, but also included resources that could facilitate teens' ability to ask questions relatively anonymously and on-demand (e.g., a text line) as well as a potential avenue to be connected to PrEP care (e.g., virtual PrEP consultations). That said, teens identified potential in-person spaces that could amplify or connect teens to PrEP services or campaigns, such as GSAs, family medicine or pediatricians' offices, or public libraries. However, given rapidly increasing legislation proposing to restrict sexual, reproductive, gender affirming, and LGBTQ-inclusive care across the U.S.<sup>55,56</sup>, one must consider the local social and cultural climate and policies to determine whether it is feasible, acceptable, and safe to implement campaign materials promoting adolescent sexual health services in these locations.

Regarding how content is displayed, participants advised against including sexualized images that are common in adult-focused sexual health campaigns. Instead, participants suggested bright, youthful imagery, with concise and affirming messaging delivered by trusted messengers (e.g., supportive parental figures, teens, and near-peers). Results also indicated the need to strike a balance between purposefully inclusive, "PrEP is for all" campaign messaging, and information intended to reach populations in demographic groups at higher HIV transmission risk, or who have unique medical or healthcare access considerations such as transgender, nonbinary, and rural/suburban youth. This preference stands in contrast to PrEP awareness campaigns that tend to adopt a targeted approach to specific populations at greatest risk of HIV transmission<sup>44</sup>. Consistent with literature showing that adolescents value diversity in media<sup>22,23,57</sup> participants showed a strong desire for a PrEP

campaign that emphasizes diversity across multiple dimensions. Yet without some market segmentation that considers local context and needs regarding PrEP, a campaign can run the risk of seeming too generic and impersonal, and as such may not reach those who need the resources the most. Moreover, participants repeatedly expressed a distaste for marketing materials that appeared too “corporate” and polished, which suggested that young, LGBTQ, and BIPOC community members were not as involved in campaign design. This speaks to the need for adolescent HIV prevention campaign designers to involve community members who are the intended recipients throughout the process, which can also increase trust and buy in when the campaign is implemented.

Finally, to better understand what participants envisioned adolescent-centered PrEP campaign materials might look like, we included a participatory design exercise at the end of the focus group. Such approaches have been used previously in adolescent sexual health intervention design and have been suggested to improve both youth wellbeing and youth-centered programming<sup>58,59</sup>. This exercise enabled us to begin to understand how participants’ text responses in the focus group data manifested in their design choices and priorities. Ultimately, these youth-generated materials can be used to inspire the direction of PrEP campaign components, ensuring that design choices are not guided solely by researchers’ interpretations of focus group data, but by adolescents’ own visions as well. In fact, these findings in part formed the basis of our own adolescent-centered PrEP social marketing campaign, PrEP4Teens (prep4teens.com) launched in late 2023, development of which will be described in a future manuscript.

## Limitations

While this study has valuable insights, it is important to acknowledge its limitations. The participants consisted predominantly of adolescents who had heard of PrEP before, and a larger proportion of transgender and nonbinary teens and cisgender sexual minority girls than is common in HIV prevention research studies that focus on those at highest behavioral risk for HIV acquisition (e.g., sexually active sexual minority males and transfeminine individuals who have unprotected anal

sex). It is possible that adolescents who have not heard of PrEP before might want different information or have different concerns than those who were already somewhat familiar with PrEP, and that those in groups at highest risk for HIV may have different perspectives on campaigns. Arguably, however, as nationwide clinical guidelines suggest all sexually active adolescents and adults should be informed about PrEP regardless of sexuality or gender <sup>60</sup>, this sample composition can also be seen as a strength. As this study took place in the Chicago area – an Ending the HIV Epidemic jurisdiction in a large, urban area with a historically progressive social and political climate, findings may not generalize to other environments. Furthermore, as this study was conducted in spring 2021, when most in-person social-behavioral research studies had not yet resumed during the COVID-19 pandemic, it is possible that our use of asynchronous online focus groups may not have been able to capture certain nuances that live, in person focus groups would have.

## Conclusion

Developmentally-tailored, SGM-inclusive information about PrEP and where to access PrEP services is critical to contribute to U.S. efforts to end the domestic HIV epidemic. Social marketing campaigns that directly reach adolescents have great potential to quickly address these needs and can equip adolescents with the tools to make informed decisions about their sexual health. Public health professionals can consider developing their own adolescent-centered PrEP campaigns guided by our findings and make their campaigns responsive to local needs in partnership with local teens and adult stakeholders who support or parent adolescents. Public health dissemination and implementation researchers should consider ways to measure and evaluate the reach and impact of PrEP campaigns on adolescents' PrEP awareness, interest, and uptake – perhaps in part by adding questions about social marketing campaign exposure and PrEP uptake to large public health surveys of adolescents

(e.g., CDC's Youth Risk Behavior Surveillance Survey<sup>61</sup>) – and explore how such patterns may differ regionally and by social/political climate. That said, as parents, healthcare providers, and other supportive adults are also critical gatekeepers of adolescents' access to healthcare and health information, additional research should examine and design educational PrEP campaigns for these groups.





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**Availability of data and material (data transparency):** Focus group guides and deidentified data available upon request.

**Code availability:** Not applicable.

**Ethics approval:** All study procedures were approved by Northwestern University's Institutional Review Board; STU00213036.

**Consent to participate:** A waiver of parental permission was obtained for minor adolescents. Informed consent was obtained from all participants included in the study.

**Consent for Publication:** All participants provided consent to the publication of their data.

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## Supplementary Files

## Figures

Social media asset reflecting inclusive messaging and calls to action.





Campaign asset reflecting inclusive messaging and English and Spanish language information.

