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ORIGINAL PAPER

# Young Adult Perspectives on Sex, Dating, and PrEP Use During the Pandemic and Improving the Future of PrEP Care

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## Abstract

Few studies have researched young adults' experiences taking HIV pre-exposure prophylaxis (PrEP) after the start of California's COVID-19 shelter-in-place (SIP) orders. The purpose of this study was to examine the experiences of young adults with sex, dating, and PrEP use during SIP and their perceptions on how to improve PrEP care in this age group. In this mixed-methods study, PrEP users ages 18–29 living in California between April 2020 and June 2021 completed a quantitative survey (N = 37) and one-on-one qualitative interviews (N = 18). Over half of survey participants reported trouble accessing PrEP care during SIP, citing difficulty obtaining medication refills, clinic appointments, and access to completing lab work. In qualitative interviews, participants expressed their preferences for more accessible PrEP service delivery across the PrEP care continuum. Despite pandemic SIP orders and trouble accessing PrEP services, young adults continued to engage in sexual behaviors.

**Keywords** COVID-19 · Pandemic · HIV · Pre-exposure prophylaxis · HIV prevention · Young adults

## Introduction

In 2018, 41% of new HIV diagnoses in the United States were among individuals under the age of 30 years [1, 2], disproportionately affecting sexual, gender, and racial/ethnic minorities [1]. Pre-exposure prophylaxis (PrEP) has been shown to be highly effective for preventing human immunodeficiency virus (HIV) [3] and is approved for adolescents [4, 5]. However, compared with all age groups in 2020, youth had the lowest PrEP coverage, with only 16% of persons with a PrEP indication being prescribed PrEP [6, 7]. PrEP is a key component of ending the HIV epidemic [8], yet the disruptive impact of the COVID-19 pandemic on HIV prevention services and strategies to improve PrEP services for young adults are largely unknown.

This is particularly true for young adults in California, who account for the highest rates of STIs and new HIV infections in the state [9, 10], where strict shelter-in-place (SIP) stay-at-home orders were in effect from March 19, 2020 until May 18, 2020, and SIP social and business restrictions were in place until the termination of the state's SIP order on June 15, 2021 [11]. Prior to the pandemic SIP orders, young adults in the United States faced barriers to traditional clinical care related to insurance, transportation, and confidentiality [12]. However, the pandemic and SIP orders further exacerbated barriers by limiting access to in-person care and visits for sexually transmitted infection (STI) screening [13] and PrEP initiation and continuation [13]. Despite many clinics initiating telehealth, young adults with privacy concerns were unable to use these services while sheltering at home with their families [13]. This is

Christina E. Camp and Carrie T. Chan are first authors.

Implications and Contribution: This study explores the impact of the COVID-19 pandemic on access to HIV prevention strategies of young adults taking pre-exposure prophylaxis. These data are important to inform current and future care delivery and clinical policies to better support young people engaged in HIV prevention efforts.

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reflected in research demonstrating that persons under 29 years experienced the largest decrease in PrEP initiations during the 1st year of the pandemic with a 28% reduction in observed compared to expected new PrEP users predicted from 3 years of pre-pandemic trends [14].

As the group with the greatest unmet PrEP need and highest rate of HIV incidence compared to other age groups, young adults have an urgent need for innovative care models that are accessible and acceptable. However, there is a dearth of research that takes young people's perspectives into account to build age-appropriate service delivery programs, particularly during a SIP timeframe. The objective of this study was to examine the experiences of young adults with sex, dating, and PrEP use during SIP and their perceptions on how to improve PrEP care for others in this age group.

## Methods

### Participants and Procedures

We conducted a mixed-methods cross-sectional study with a quantitative online survey and qualitative interviews. Participants were a convenience sample of individuals in California between 18 and 29 years of age who took PrEP during California's SIP order between April 2020 and June 2021.

Study enrollment took place from March 2021 until August 2021. Recruitment efforts included virtual recruitment via the dating mobile app Scruff and referral from staff at clinics and community-based organizations that serve young adults in California. Participants were screened for eligibility by submitting text-messaged photos of their identification card and proof of PrEP prescription to the encrypted study mobile phone. Eligible participants were emailed a Qualtrics survey and were sent a US$30 electronic gift card upon survey completion. Participants who completed the survey were invited to participate in one-on-one in-depth qualitative interviews over video calls. Those who completed the qualitative interviews were sent an additional US$40 electronic gift card.

### Survey Measures and Interview Guide Questions

The quantitative survey collected demographic information on age, race/ethnicity, sex/gender, sexual orientation, financial stability, education, housing, and employment. The survey also inquired about PrEP use before and during SIP, preferences regarding PrEP care [e.g., location for receiving PrEP services, type of helpful adherence support, and mode of PrEP delivery methods (oral, injectable, etc.)], changes in sexual behavior during SIP (e.g., reduction or increase in sexual partners), and quality of life measures (e.g., financial, housing, employment, education) from before to during the SIP timeframe. SIP was defined to participants as the time frame from the start of SIP in California in March 2020 to the lifting of the state's SIP order and restrictions in June 2021.

Qualitative interviews explored (1) how SIP affected day-to-day experiences with school, employment, housing, and family; (2) how SIP affected sex and dating; (3) PrEP use prior to and during SIP; (4) PrEP care supports systems, including clinical, family, and friends; and (5) preferences for PrEP care. The study was approved by the UCSF Institutional Review Board, and survey participants provided electronic consent for the survey and interviewees gave verbal consent for the interviews.

### Quantitative Data Analysis

Frequency analyses were conducted to describe baseline participant characteristics and PrEP use and care experiences during SIP. Paired t-tests were used to evaluate the difference in number of sexual partners per month before and during SIP. Statistical analyses were done using Stata 15.1 (College Station, TX: StataCorp LLC).

### Qualitative Data Analysis

Qualitative interviews were audio-recorded on Zoom and stored on a HIPAA-compliant database. From those recordings, field notes were developed for each interview by two separate investigators and exemplary quotes were added. With the use of Framework Analysis [15], investigators created field note summaries that were subsequently organized into thematic groupings in Microsoft Excel. Both investigators then coded and synthesized data to identify overarching themes and patterns. Using the merge approach [16], investigators connected qualitative findings to data elements from the quantitative analysis.

## Results

### Quantitative Survey

A total of 37 participants completed the quantitative survey (Table 2). Mean age of participants was 23.9 years, and most identified as gay (73%), cisgender men (81%), and white (38%) or Hispanic/Latinx (30%). All had attained at least a high school degree and a majority were working (54%) or in school (27%). Nearly 51% reported either not being able to get by or barely being able to get by on the money they had. Most participants lived in their own houses/apartments (51%) or with their parents (40%).

At the time of survey response, over 75% of participants were taking daily oral PrEP, 14% were on 2-1-1 PrEP [17]

(also known as event-based PrEP), and 11% had discontinued PrEP (Table 2). The most stated reason for using 2-1-1 PrEP was infrequent sex (60%). The most common reasons for discontinuing PrEP were trouble accessing PrEP care appointments or refills (75%) and/or reduced sexual encounters during SIP (75%).

## Qualitative Interviews

Interviewees (N = 18) had a mean age of 22.6 years, 89% identified as cisgender men, and 67% identified as gay (Table 1). Responses were grouped into three overarching categories: (1) Impact of SIP on sex and dating, (2) Impact of SIP on PrEP access and use, and (3) Perceptions on how to improve PrEP care.

### Impact of SIP on Sex and Dating

When discussing the perceived effects of SIP on sex and dating, interviewees described the challenges of moving back home with their parents after exploring their sexuality and gender expression away from home. Interviewees reported challenges balancing their developing sexual and gender identities with their identities previously known by their families.

> It was bittersweet [to be home]. However, it is difficult because at least for me, being queer, certain aspects of myself I did have to 'tame' down coming back home and I think now it's kind of for my own safety and being what is palatable for them.
> *- 23-year-old Queer Latinx Genderqueer*

Interviewees discussed an ongoing discomfort with sharing their PrEP use with friends and family due to self-perceived stigma related to feeling like a "philanderer." In the survey, 35% of participants reported feeling worried about people thinking they were living with HIV if they were seen taking PrEP.

Interviewees also discussed how they chose sexual partners and their use of dating apps during SIP. In the survey, 51% of participants noted a decrease in sexual partners while 35% noted an increase in sexual partners. Survey results showed a mean of 4.2 [standard deviation (SD) = 8.1] partners per month before the pandemic and a mean of 3.1 (SD = 8.2) partners per month during SIP ($t = 2.12$, $p = 0.04$). Many interviewees described their sexual encounters at the beginning of SIP to be exclusively with people they knew personally or people they trusted to be honest about potential COVID-19 exposures. Reasons cited for decreases in sexual partners during SIP included poor mental health, changes in housing and less privacy, recent weight gain, and fear of contracting COVID-19. Among those with an increase in sexual partners, the main reasons included boredom caused by SIP, increased sexual impulsivity attributed to the SIP's negative impact on mental health, and the need to escape feelings of loneliness, depression, and anxiety.

### Impact of SIP on PrEP Access and Use

Discussions about PrEP use during SIP highlighted healthcare access challenges and transitions to intermittent PrEP use. Results from the quantitative survey demonstrated a shift in PrEP care settings from primarily in-person clinics prior to the pandemic (70%) to primarily virtual clinics during SIP (60%). In both the survey and interviews, difficulties with healthcare access throughout SIP were frequently cited. Nearly 60% of survey participants had trouble with at least one area of healthcare access (Table 2), with the most common challenges noted to be obtaining medication refills (30%), getting HIV testing (30%), going to a lab for required PrEP lab work (27%), and obtaining clinic appointments (22%). During interviews, interviewees noted that providers were more lenient with quarterly lab work requirements due to challenges obtaining lab appointments. Interviewees also described providers offering 2-1-1 PrEP to cover periods of less frequent sexual activity. Some interviewees reportedly stopped PrEP due to decreased sexual encounters and then restarted as they began to reengage in sexual activities, noting comfort and safety due to the rollout of COVID-19 vaccinations and loosening of SIP restrictions.

> I discontinued it [PrEP] because I wasn't being active, and it was months and months of not being active. I was taking it for the first month because no one was really sure how long the pandemic was going to be, so I was taking it for the sake of not messing up my routine. Once I noticed things were progressively not getting better, I stopped taking it.
> *- 22-year-old Queer Latinx Genderqueer*

### Perceptions on How to Improve PrEP Care

When asked about ways to improve PrEP care for other young adults based on their own PrEP experiences during SIP, interviewees had a number of suggestions related to improving access to PrEP care and PrEP care support.

Interviewees recommended different strategies to improve access to PrEP. Some interviewees preferred remote services through virtual visits, home-based lab test collections, and PrEP by mail for increased confidentiality and access. Others preferred maintaining in-person care and mentioned needing to make it as easy as possible by having a "one-stop-shop" with all required services such as provider visits, labs, and PrEP pickup in one place and same-day PrEP. Survey participants ranked in-person

**Table 1** Descriptive statistics of baseline demographic characteristics of study population

| Demographic characteristics | Survey (N = 37) | Interview (N = 18) |
|---|---|---|
| Age, mean years (SD) | 23.9 (3.3) | 22.6 (2.3) |
| Sex at birth, N (%) | | |
| Male | 35 (94.6) | 16 (88.9) |
| Female | 2 (5.4) | 2 (11.1) |
| Gender identity, N (%) | | |
| Cisgender man | 30 (81.1) | 12 (66.7) |
| Genderqueer | 5 (13.5) | 4 (22.2) |
| Transgender woman | 1 (2.7) | 1 (5.6) |
| Transgender man | 1 (2.7) | 1 (5.6) |
| Race/ethnicity, N (%) | | |
| White non-Latinx | 14 (37.8) | 4 (22.2) |
| Hispanic/Latinx | 11 (29.7) | 7 (38.9) |
| Asian non-Latinx | 5 (13.5) | 4 (22.2) |
| Multiracial or another ethnicity non-Latinx | 5 (13.5) | 2 (11.1) |
| Black/African American non-Latinx | 2 (5.4) | 1 (5.6) |
| Sexual orientation, N (%) | | |
| Gay | 27 (73.0) | 12 (66.7) |
| Queer | 5 (13.5) | 3 (16.7) |
| Bisexual | 4 (10.8) | 2 (11.1) |
| Straight | 1 (2.7) | 1 (5.6) |
| Work, N (%) | | |
| Working | 20 (54.1) | 9 (50.0) |
| Student | 10 (27.0) | 5 (27.8) |
| Unemployed | 6 (16.2) | 3 (16.7) |
| On leave/disability | 1 (2.7) | 1 (5.6) |
| Education, N (%) | | |
| High school graduate | 5 (13.5) | 3 (16.7) |
| Some college | 13 (35.1) | 8 (44.4) |
| Bachelor's degree | 9 (24.3) | 5 (27.8) |
| Some postgraduate education | 3 (8.1) | 0 (0) |
| Postgraduate degree | 7 (18.9) | 2 (11.1) |
| Financial situation, N (%) | | |
| I cannot get by on the money I have | 4 (10.8) | 4 (22.2) |
| I can barely get by on the money I have | 15 (40.5) | 5 (27.8) |
| I have enough money to live comfortably | 17 (46.0) | 9 (50.0) |
| Prefer not to answer | 1 (2.7) | 0 (0.0) |
| Living situation, N (%) | | |
| Own house/apartment/room | 19 (51.4) | 9 (50.0) |
| Parent's house/apartment | 15 (40.5) | 7 (38.9) |
| Welfare hotel, month-to-month hotel, treatment facility | 3 (8.1) | 2 (11.1) |
| California region, N (%) | | |
| San Francisco Bay Area | 26 (70.3) | 13 (72.1) |
| Los Angeles | 5 (13.5) | 3 (16.7) |
| Sacramento/San Joaquin | 2 (5.4) | 1 (5.6) |
| Prefer not to answer | 4 (10.8) | 1 (5.6) |

(43%) and virtual clinics (38%) as the top two choices for PrEP care settings followed by pharmacies (8%). To reduce cost barriers, interviewees recommended that clinics support patients in navigating billing and insurance but ultimately recommended that PrEP care be free of cost for younger age groups.

**Table 2** Descriptive statistics of participant PrEP care and preferences

| PrEP care and preferences | Total (N = 37) |
|---|---|
| Current PrEP use, N (%) | |
| Daily oral | 28 (75.7) |
| 2-1-1 | 5 (13.5) |
| Recently discontinued | 4 (10.8) |
| Reasons for 2-1-1 PrEP use[a], N (%) | |
| Infrequent sex | 3 (60.0) |
| Change in sexual partners | 1 (20.0) |
| Fewer side effects | 1 (20.0) |
| Reasons stopped PrEP[b,c], N (%) | |
| Trouble accessing PrEP care/refills | 3 (75.0) |
| Reduced sexual encounters | 3 (75.0) |
| Change in sexual partners | 2 (50.0) |
| Lack of provider knowledge about PrEP | 1 (25.0) |
| Provider advised to stop | 1 (25.0) |
| Setting of PrEP care, before SIP[c], N (%) | |
| In-person clinic | 26 (70.3) |
| Virtual/telephone clinic | 5 (13.5) |
| School/college clinic | 4 (10.8) |
| Not on PrEP before pandemic | 4 (10.8) |
| Pharmacy | 1 (2.7) |
| Setting of PrEP care, during SIP[c], N (%) | |
| Virtual/telephone clinic | 22 (59.5) |
| In-person clinic | 21 (56.8) |
| Pharmacy | 4 (10.8) |
| Did not get PrEP care during SIP | 3 (8.1) |
| School/college clinic | 1 (2.7) |
| Top preference for PrEP care setting, N (%) | |
| In-person clinic | 16 (43.2) |
| Virtual/telephone visit | 14 (37.8) |
| Pharmacy | 3 (8.1) |
| Mobile van | 1 (2.7) |
| School/college clinic | 1 (2.7) |
| Prefer not to answer | 2 (5.4) |
| Challenges with taking PrEP, during SIP[c], N (%) | |
| Healthcare access | 22 (59.5) |
| Difficulty receiving refills | 11 (29.7) |
| Inability going to lab for testing | 10 (27.0) |
| Lack of available clinic appointments | 8 (21.6) |
| Lack of communication with provider | 6 (16.2) |
| Uncertainty about taking PrEP if having less sex | 19 (51.4) |
| Missing doses due to changes in daily routine | 10 (27.0) |
| Did not experience challenges | 5 (13.5) |
| Decreased privacy during SIP | 2 (5.4) |
| Difficulty getting HIV test, during SIP, N (%) | |
| Easy to very easy | 16 (43.2) |
| Neither easy nor difficult | 8 (21.6) |
| Difficult to very difficult | 11 (29.7) |
| I did not attempt to get an HIV test | 2 (5.4) |
| Concern that others will think you are living with HIV while taking PrEP, N (%) | |
| Slightly to extremely worried | 13 (35.1) |
| Not worried | 24 (64.9) |
| Change in number of sexual partners during SIP, N (%) | |
| Reduced | 19 (51.4) |
| Unchanged | 5 (13.5) |
| Increased | 13 (35.1) |
| Sexual partners per month before pandemic, mean (SD) | 4.2 (8.1) |
| Sexual partners per month during pandemic, mean (SD) | 3.1 (8.2) |

*PrEP* pre-exposure prophylaxis; *SIP* shelter-in-place; *HIV* human immunodeficiency virus

[a]Among participants currently taking 2-1-1 PrEP (N = 5)

[b]Among participants who stopped PrEP (N = 4)

[c]Participants able to choose multiple responses

> I was nervous to find a provider and talk about PrEP until on Grindr I saw a notification about free accessible PrEP, and it was virtual, which I thought was so much better for me. I don't really like to go in person and risk someone seeing me... Also, I was still on my parent's insurance, and I was nervous...but [my providers] do a lot of their stuff through government assistance, which I thought was so nice because I didn't have to think about copays or anything like that... Honestly if I didn't find them, I don't think I would have re-engaged with PrEP probably for a while.
> *- 24-year-old gay Asian male*

There was high interest in alternative PrEP formulations, particularly injectable PrEP, and alternative dosing strategies of oral PrEP (Fig. 1). Results from the survey demonstrated that all participants were interested in an injection every 6 months with 92% either very or extremely interested followed by once-monthly oral pills (89%) and an injection every 2 months (70%). These options were followed by a hypothetical option of daily oral gummies (61%) and an existing option of daily oral PrEP (49%).

When asked about additional services paired with PrEP care, most interviewees stated that they would like access to additional healthcare (e.g., mental health services, support groups, comprehensive STI testing, LGBTQ+-friendly primary care, vaccinations, pharmacy services, and access to free condoms and lube) and non-healthcare services (e.g., employment and housing assistance, help navigating health insurance, and food services).

In addition to SIP-specific suggestions, participants discussed the need to address general PrEP care barriers

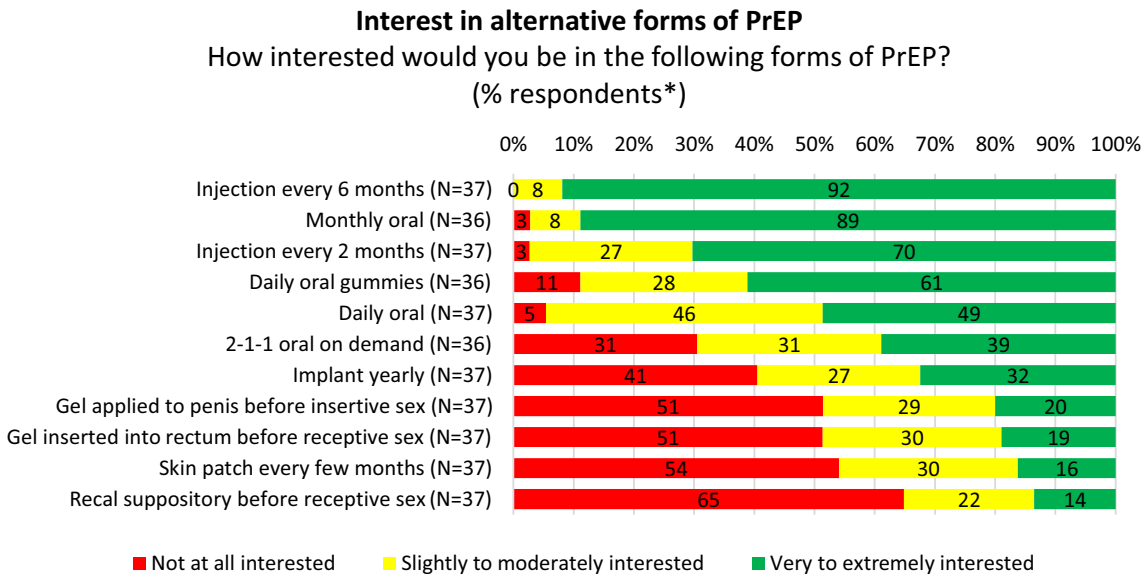


**Fig. 1** Participant interest in alternative forms of HIV pre-exposure prophylaxis (PrEP)

related to providers' knowledge and abilities to manage PrEP care, race equity in PrEP care and sexual health, and public knowledge about PrEP (Table 3).

## Discussion

Our findings highlight that many young PrEP users experienced decreased access to PrEP services during the pandemic SIP timeframe. Over half of the participants reported difficulty accessing HIV prevention services including challenges with obtaining medication refills, completing required lab tests, and scheduling clinic appointments. Our findings are consistent with previous research demonstrating increased difficulty accessing STI and HIV testing services and getting PrEP prescriptions during the pandemic with younger individuals more affected than other age groups [18–20].

In the setting of decreased PrEP access, which was reported as a reason for PrEP discontinuation by most individuals who stopped taking PrEP, participants reported continuing to engage in sexual activities, with over one-third reporting an increase in sexual partners. We found a statistically significant yet small decrease in the number of sexual partners during SIP in our study population. Participants reported questioning the necessity of PrEP when faced with access challenges due to reductions in sexual behavior, which was also cited as a reason for PrEP discontinuation by a majority of participants who discontinued PrEP during SIP. This is important to consider, as reduced access to PrEP and HIV prevention services among a population that remains sexually active may have a dramatic effect on HIV incidence in this age group. Our findings are consistent with previous research that shows that younger populations continued to engage in sexual behaviors during the pandemic [19], demonstrating the persistent need for PrEP and access to healthcare services.

Interviewees stressed the need for clinics to offer different PrEP service delivery methods (e.g., virtual visits, home lab test collection) to make PrEP more accessible. While some interviewees wanted completely remote PrEP services, others preferred the choice for in-person care and stressed the importance of making PrEP care a one-stop-shop that includes the delivery of required services at one time. There was also high interest in alternatives to daily oral PrEP including injectables every 2 or 6 months, monthly oral PrEP, and gummies. Therefore, initiating or switching to 2-1-1 PrEP and long-acting injectable PrEP should be offered more readily in clinics and options such as gummies should be further explored in research. With novel PrEP agents such as cabotegravir extended-release injectable suspension [21], it is imperative to include the viewpoints of young adults to increase PrEP uptake, adherence, and persistence.

Our study is unique in evaluating participants' experiences from April 2020 to June 2021 given that SIP restrictions in California remained in place until June 2021. Therefore, our study spans over a year of the pandemic, during which participants were able to describe how their sexual behavior and PrEP use shifted as SIP restrictions and "pandemic fatigue" fluctuated. However, there are several study limitations that warrant consideration. We used a cross-sectional approach with which causal inferences cannot be made. Additionally, we had a small sample size and used

**Table 3** Qualitative interview quotes from participants on how to improve PrEP care outside of shelter-in-place-specific suggestions by theme with interviewee characteristics

| Theme | Interviewee characteristics | Quote |
|---|---|---|
| Improve provider ability to recommend, discuss, and manage PrEP care | 23-year-old gay Latino male | *My normal PCP…I realized he was not well versed in anything that had to do with gay culture… He was a nice guy, he just didn't know much about PrEP. I had to tell him what it was, and he just gave me a prescription without knowing what I had to do next* |
| | 24-year-old gay Asian male | *It [PrEP] is brought up in a negative sense, like 'Oh you're engaging in risky behaviors,' which is a wrong way to go about bringing up PrEP… When I think of providers, I think they just see us as numbers or as risk behaviors that they have to come and save us. But I think it's more like trying to engage with us. Talk more besides the quantity of partners, what we're engaging in when it comes to sex. Getting to know us more than what is on paper. I know it's hard because providers are so busy and they have more patients to see, but those small things can completely change how people interpret providers* |
| Improve race equity in PrEP care and sexual health | 23-year-old gay Latino male | *Putting more diversity in these healthcare positions, programs that get more minorities into healthcare. More minority doctors, more minority nurses and EMTs. The more diversity you have in those positions is the best and most effective way to help the disparities within the community itself* |
| | 22-year-old queer Latinx genderqueer | *I've seen an ad that was in regard to PrEP and PrEP usage. It was a round table of queer people talking about their experiences with PrEP. That really helped me and made me feel more comfortable. Specifically, also seeing other people of color talking about PrEP… I feel like seeing how that would be accessible to people within my community or other communities like mine would help, especially with young people* |

**Table 3** (continued)

| Theme | Interviewee characteristics | Quote |
|---|---|---|
| Improve public knowledge about PrEP | 24-year-old gay Asian male | *I asked my teacher about men having sex with men, and she completely shut me down right then and there. Me as a sixth grader… I clearly remember that because I felt disgusting in the fact that I thought about men having sex with men, and so I internalized that problem within myself for even asking that question…A lot of programs in the country are still very abstinence only approach to sex education… We need to provide more comprehensive sex education to not have my experience where teachers bring down the idea that it was brought up. We just need to have it talked about so youth don't have a question of uncertainty. Not only in HIV and queer topics, but sex education needs to transition from risky behaviors and STIs into more positive topics about what a healthy relationship is and how to properly engage in safe sex rather than just 'Don't have sex!'* |
| | 21-year-old queer Latinx transmasculine | *Being a trans person on PrEP and not being a transwoman, I feel like a minority… When I see advertisements for it, the kind of person I am isn't considered as someone who would need it. I feel a little bit embarrassed like 'Am I really the target audience? Am I really supposed to be taking it?' Because I never see anyone like me* |
| | 22-year-old straight White transfeminine | *It [PrEP] literally should be everywhere and not just in the queer community…You don't flip through Cosmopolitan and see an ad for PrEP, but you'll see an ad for Trojan condoms or spermicide or lube. It's kind of a stigma that only people in the queer community have these issues and need this medication* |

self-reported data, which may be subject to social desirability and/or recall biases. Finally, study participants largely identified as gay men and were from California; therefore, these results may not be generalizable to other demographics or other geographic areas.

Our results illustrate the gaps and challenges in PrEP care for young adults that were exacerbated by the pandemic. Despite lapses in PrEP refills and pandemic SIP orders, young adults continued to engage in sexual behaviors, demonstrating the urgent need to improve how PrEP services are delivered in this population. Continued innovation and diversification of PrEP service delivery across the PrEP care continuum are necessary to enhance HIV prevention services among a population that has been disproportionately impacted by HIV. As research champions the importance of incorporating young adults' perspectives into care delivery models to improve PrEP care accessibility and acceptability [22], we believe that the recommendations offered by our study participants can help improve the HIV prevention needs of young people during and outside of pandemic conditions.

**Author Contributions** CEC and CC were the lead authors and wrote the full draft of this manuscript and equally contributed to the overall development of the study. CEC, CC, and PS all contributed equally in the concept of the paper and how to frame the analyses. CC conducted the quantitative analyses and CEC and CC both worked on the qualitative analyses of this data. All researchers assisted in crafting the qualitative data analysis and completed an extensive literature review. PS provided feedback and support on conducting both the quantitative and qualitative analyses and editing the manuscript.

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**Data Availability** De-identified data set of the survey is available, however, a de-identified data set of the qualitative research is not available

as participants did not consent to using the data outside of the research study.

**Code Availability** Not applicable.

## Declarations

**Conflict of interest** The named authors have no conflict of interest, financial, or otherwise.

**Ethical Approval** The University of California, San Francisco (UCSF) Internal Review Board (IRB) approved the study protocol for this study.

**Consent to Participate** All participants provided informed consent before agreeing to participate in this study.

**Consent for Publication** Not applicable.

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