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Research Paper

Pre-exposure prophylaxis (PrEP) uptake and adherence experiences of gay and bisexual men who engage in chemsex: A qualitative study

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ABSTRACT

Background: Pre-exposure prophylaxis (PrEP) is the use of HIV antiretroviral medications to reduce the risk of HIV acquisition. PrEP is highly effective when used during periods of potential HIV exposure. Gay and bisexual men (GBM) who engage in unprotected chemsex (without condoms or PrEP) are at high-risk of acquiring HIV. Substance use has been shown to detrimentally impact on the effective use of HIV treatment among GBM living with HIV. This study aims to qualitatively explore PrEP uptake and adherence among GBM who engage in chemsex in the United Kingdom.

Methods: Nineteen semi-structured in-depth telephone interviews were conducted with self-identifying HIV-negative GBM who reported recently engaging in chemsex and currently using or had recently used PrEP. We explored the ways in which chemsex influenced GBM's motivation to use, access to and effective use of PrEP. Interviews were audio recorded, transcribed, and coded using thematic analysis.

Results: Most of the men identified as gay, were of white ethnicity and had a median age of 41. Eighteen men were still using PrEP at the time of the interview and most used daily dosing. The perception of being at high risk of HIV acquisition was a key factor influencing PrEP initiation and after initiation, continued to influence high levels of adherence which was reported by the majority of participants. The few individuals who reported sub-optimal adherence, explained that psychosocial stressors or periods of impaired mental health led to more frequent or intense chemsex sessions, which in turn contributed to occasional non-adherence. Most participants used a variety of strategies to help them adhere, which included restricting the amount or intensity of chemsex they engaged in, strategic placement of PrEP and external triggers to remind them to take PrEP.

Conclusions: In this study, the majority of GBM who engaged in chemsex, initiated PrEP in recognition of their potential risk of HIV acquisition and reported high levels of PrEP adherence. They used multiple strategies to support effective PrEP access and adherence. These findings support a growing body of evidence that PrEP is a viable prevention tool for GBM who engage in chemsex, and that chemsex does not negatively impact PrEP adherence.

Introduction

There have been public health concerns about the risk HIV poses to gay and bisexual men (GBM) who engage in the phenomena of 'chemsex'. Public Health England (PHE) define chemsex as the 'planned use of psychoactive drugs before or during sex to intensify, enhance and sustain the experience' (PHE, 2015). GBM who engage in chemsex without using effective prevention measures are at high-risk of acquiring HIV due to multiple risk behaviours (Maxwell et al., 2019). A chemsex session can involve multiple partners, condomless anal sex (CAS), esoteric sex, and injecting drug use. Drugs commonly associated with chemsex in the United Kingdom (UK) are methamphetamine, mephedrone and gamma hydroxybutyrate/gamma butyrolactone (GHB/GBL) (Bourne et al., 2015). However, substances used within a GBM sexualised context vary across regions and nations (Hibbert et al., 2021). Due to the socially constructed nature of chemsex and inter-changeable use of terms there are challenges in universally defining the phenomena (Edmundson et al., 2018). Nonetheless, the reasons to engage in chemsex (to intensify, enhance and sustain the sexual experience) and related risk behaviours are generally consistent across most studies that have examined GBM's psychoactive substance

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use with sex (Maxwell et al., 2019). This places importance on maximising the availability of HIV risk reduction measures for GBM who engage in chemsex.

Pre-exposure prophylaxis (PrEP) is currently the use of oral antiretroviral (ARV) treatment (tenofovir disoproxil/emtricitabine) to reduce the sexual risk of acquiring HIV. There are two primary recommended dosing regimens for GBM: (1) Daily: used on a continuous basis seven days per week, or (2) Event-based: used intermittently when engaging in sex with two doses 2-24 hours before sex, one dose 24 and then 48 hours after the initial doses. In addition, a sub-analysis of data confirmed that four PrEP doses per week can reduce the sexual risk of HIV acquisition to an equivalent level of daily or event-based by 96-99% (Buchbinder, 2018). As such, PrEP is highly effective for GBM who take at least 4 doses per week (Huang et al., 2018). Evidence demonstrates that GBM generally have high PrEP adherence, although some groups such as younger men, ethnic minorities, men who use substances and those with mental illness are at higher risk of sub-optimal adherence (Maxwell et al., 2019).

A number of studies have reported that HIV positive individuals who recently used drugs, some specifically assessing recent methamphetamine use, are more likely to not adhere to their ARVs when compared to those who have not used drugs (Perera et al., 2017). Evidence highlights that persistent methamphetamine use can contribute towards mild/moderate mental health issues and social withdrawal (Homer et al., 2008). These psychosocial impairments may consequently affect the person's ability to manage ARV adherence. This evidence raised public health concerns that drug use within chemsex settings may detrimentally impact upon GBM's PrEP adherence. To date, there has been limited research examining the effect chemsex has on PrEP uptake and adherence. A few important quantitative studies have reported that chemsex did not impact on daily PrEP adherence among GBM in the UK and Canada (Flores Anato et al., 2021; O'Halloran, Rice, et al., 2019). This remains an important research priority as PrEP availability increases and more GBM who engage in chemsex start using PrEP. In this study we qualitatively explored the biopsychosocial factors related to GBM's chemsex experiences which influenced their motivation to use, access to and effective use of PrEP.

Methods

Study design

Between October-December 2019 we conducted semi-structured in-depth interviews among 19 self-identifying GBM. Participants were eligible if: i) They were HIV negative men who had sex with men, ii) 18 years old and over, iii) Residing in the UK, iv) Had engaged in chemsex in the previous 3 months, and v) Were currently using or had used PrEP in the previous 12 months. There was no specific definition used for chemsex within the eligibility criteria. As a socially constructed concept and given the inter-changeable definitions of chemsex it was important for us to use an inclusive approach that allowed the men to self-define if they had engaged in what they perceived to be 'chemsex'. We recruited participants via a digital poster on multiple UK based GBM/PrEP centric charities social media and one advert on a gay, bisexual and other men who have sex with men geo-social networking website. Men contacted the research team via an email on the digital poster. The study had ethics approval from University College London (12805/001).

Theoretical framework

HIV prevention cascades are multi-theory approaches that provide practical frameworks to optimize a population's use of HIV prevention interventions (Auerbach et al., 2020). For this analysis, we applied the Schaefer at al HIV prevention cascade which is considered most appropriate for research and proposes three non-linear steps assessing motivation to use prevention products, access to and effective use of them (Schaefer et al., 2019). Measuring PrEP adherence is complex as instead of consistent use, with PrEP we actually need to measure 'prevention-effective use', which is sufficient PrEP use around the time of sex (Haberer et al., 2015). For this study, the HIV prevention cascade provided an overall structure to explore an individual's PrEP journey from motivation, to access, and to effective use.

Data collection

SM interviewed the participants via telephone with each interview taking approximately 60 minutes. Interviews were conducted by telephone as a preferred method for narrative interviews with a geographically dispersed population (Holt, 2010). All participants provided verbal informed consent to participate in the study and were assured their personal identifiers would be removed from interview records. SM conducted the interviews using a semi-structured interview guide which was informed by the HIV prevention cascade and evidence from systematic literature reviews on GBM chemsex and PrEP adherence (Maxwell et al., 2019). The interview guide was reviewed and slightly tweaked by the authors on review of the initial interviews. The cascade provided a general structure for the interviews to explore the key factors that the men experienced in their PrEP use journey (motivation, access, and effective use). Interview topics included socio-demographics, chemsex behaviours, PrEP use, and reasons for episodes of non-adherence.

Data analysis

Audio-recordings were transcribed verbatim, coded initially using a deductive coding framework and subsequently applying inductive codes that emerged from the data (Braun & Clarke, 2006). The coding framework included key concepts from the prevention cascade (motivation, access, and effective use). We conducted thematic analysis which included SM reviewing the transcripts to familiarise himself with the data, coding against the original coding framework, followed by identifying and applying inductive codes iteratively to refine the coding framework (Braun et al., 2019). The coding framework was reviewed by all authors at the mid and final stages of data analysis. At each stage discrepancies were discussed and resolved with refinements being made to the coding framework. A fourth and final version of the code book was agreed and applied to all the interviews. NVivo 12 (QSR International Pty Ltd) was used for data management.

Results

Participants' profile

Table 1 provides a summary of the participants' socio-demographics, PrEP status and key chemsex behaviours. All participants confirmed they were HIV negative GBM who had engaged in chemsex in the 3 months prior to the interview. Participants were a median age of 41 which ranged from 26-71 years (IQR 31-51). Most men identified their ethnicity as white and sexuality as gay. At interview 18 of the men were using PrEP and 1 had stopped in the previous 6 weeks. They had used PrEP for a median of 2 years which ranged from 1 to 6 years (IQR 2-3). Most participants used PrEP daily with two using event-based and two taking at least four doses per week.

Most participants described three types of inter-related reasons for engaging in chemsex: i) Sexual pleasure: to enhance sexual feelings, push sexual boundaries and improve performance, ii) Inter-personal dynamics: to enhance partner intimacy and increase self-desirability, and iii) Escapism: to immerse into the experience as a diversion from the stress of life. Most participants engaged in chemsex sessions a couple of times per month. A chemsex session typically lasted less than one night and involved less than five partners. The participants' chemsex partners

Table 1
Socio-demographics, PrEP use and chemsex characteristics of participants.

Demographics				PrEP use status				Key chemsex behaviours			
Pseudonym	Age Range	Sexuality	Ethnicity	PrEP status	Duration of use	Dosing method	Source	Frequency of engagement	Maximum session	Average partners per session	Ever injected
Adrian	50-60	Gay	White	Current	2 years	Daily	NHS	Twice per month	<20 hours	<5 partners	No
Ben	<30	Gay	White	Current	1.5 years	Daily	Private	Once every 3 months	<10 hours	<5 partners	No
Chris	>60	Gay	White	Current	2 years	Daily	NHS	Twice per month	<10 hours	<5 partners	No
David	30-40	Gay	White	Current	3 years	Tues/Thur/ Sat/Sun	Private	Twice per month	<48 hours	<15 partners	No
Eric	40-50	Gay	White	Current	1.5 years	Daily	NHS	Once every 3 months	<10 hours	<15 partners	No
Fynn	<30	Bisexual	Mixed race	Current	2 years	Daily	NHS	Twice per month	<10 hours	<5 partners	No
Glen	40-50	Gay	White	Current	2 years	Episodic	NHS	Twice per month	<20 hours	<5 partners	No
Henry	>60	Gay	White	Current	6 years	Daily	Private	At least once per week	Not discussed*	<5 partners	Yes
Jack	30-40	Gay	White	Current	3 years	Daily	NHS	Once every 3 months	<48 hours	Not discussed*	Yes
Kevin	50-60	Gay	White	Current	3 years	Episodic	Private	Twice per month	<20 hours	<5 partners	Yes
Liam	30-40	Gay	White	Current	1.5 years	Daily	NHS	Twice per month	<10 hours	Not discussed*	No
Max	<30	Gay	White	Current	3 years	Daily	NHS	Currently abstaining	<48 hours	<15 partners	No
Neil	50-60	Gay	White	Current	2.5 years	Daily	NHS	Twice per month	<48 hours	<20 partners	No
Owen	30-40	Gay	White	Current	1 year	Daily	NHS	Twice per month	<20 hours	<15 partners	No
Patrick	>60	Gay	White	Current	2 years	Daily	NHS	At least once per week	Not discussed*	<5 partners	Yes
Ross	30-40	Gay	White	Current	4 years	Daily	NHS	At least once per week	<10 hours	<5 partners	Yes
Steve	40-50	Gay	White	Current	2 years	Daily	NHS	At least once per week	<10 hours	<5 partners	Yes
Troy	30-40	Gay	White	Current	3 years	Daily	Private	Once every 3 months	<10 hours	Not discussed*	No
Wes	40-50	Gay	White	Stopped	2 years	Every other day	Private	At least once per week	Not discussed*	<5 partners	No

NHS: refers to the national healthcare service in the United Kingdom.
* Not discussed: did not ask and/or did not come up during the interview.

were primarily casual, some were known, and others were anonymous. However, it was not uncommon for them to regularly engage in chemsex with people they knew. Multiple and different types of drugs were used during a chemsex session. The key drugs from high to low rates of use were methamphetamine, GHB/GBL, methylenedioxymethamphetamine (MDMA), cocaine, mephedrone and ketamine. Several participants had injected methamphetamine and they primarily used safer injecting practices. The most common types of sexual activities during chemsex sessions were CAS, esoteric sexual acts (i.e., fisting) and oral sex.

The influence of chemsex on PrEP use

In this section we present the results of the ways in which chemsex influenced PrEP use against each of the prevention cascade elements of motivation to start, access to, and effective use of PrEP. These elements are not linear, and participants reported issues of 'motivation' to re-access PrEP at various points of their PrEP use journey.

Motivation to start PrEP

Before starting PrEP, most participants believed that they were at high risk of acquiring HIV due to having condomless anal sex (CAS) with a range of partners. They described that this risk was exacerbated in chemsex sessions. The interviewees acknowledged that due to the effect of the drugs they took during chemsex, they were not always as lucid to make informed decisions about condom use. However, their desire for the enhanced sexual experience of chemsex outweighed the risk of HIV during CAS.

> *"If I am going to situations where I take drugs, my guard might be down around my condom use. It was just a risk factor that was just so much more than I ever thought it was" (David, 30-40)*

The desire for the experience of chemsex and the recognition of the HIV risk posed by CAS motivated the men to start using PrEP. Participants' motivations to start PrEP can be grouped into three key biopsychosocial benefits: i) To provide biological protection against HIV acquisition, ii) To remove the psychological stress they experienced at the risk of contracting HIV, and iii) To remove the perceived social consequences of being stigmatised as a HIV-positive gay man.

For a few participants, PrEP enhanced their sexual pleasure, allowed them to have sex without condoms, increased their sexual activity and facilitated exploration of long-term sexual fantasies. As PrEP removed the worry of HIV acquisition, they were able to relax and enjoy their sexual experiences.

> *I had these things that I wanted to try but I was always aware that I didn't want to catch HIV. PrEP just seemed to be the key in allowing me to experience my – well my fantasies really" (Kevin, 50-60)*

Prior to starting PrEP, most participants had face to face and online discussions with GBM peers about PrEP. These peer discussions had positive and negative influences on their motivation to use PrEP. Some participants had discussions with other GBM who perceived PrEP as a product only used by 'promiscuous' gay men in order to have lots of CAS. This made some of the participants question if PrEP was right for them, as although they acknowledged they partook in higher-risk sexual activities, they did not perceive their behaviour as being 'promiscuous'.

> *"When I told some friends, they were like, 'What do you need PrEP for? its only for people, who are like bare backing, going to gang bangs and orgies', Like you know, PrEP's for sluts" (David, 30-40)*

However, most of the participants discussions about PrEP with other GBM were positive. They had interactions with men from within and outside the chemsex scene which encouraged them to start using PrEP.

Interviewees talked to PrEP users about how effective it was at protecting against HIV acquisition, how they used PrEP and if they had encountered any problems taking PrEP. These conversations with existing GBM PrEP users, especially those partaking in chemsex, reduced their concerns about starting PrEP, enhanced their belief that PrEP was necessary given their chemsex activities and reassured them about the practicalities of taking PrEP. As PrEP was increasingly used by GBM peers the participants described being less concerned about the 'promiscuous' stigma and this social normalisation made PrEP acceptable to use.

Access to PrEP

Most participants reported that they previously accessed HIV prevention services via national healthcare service (NHS) clinics which in the UK provide free medical care at the point of contact. However, as PrEP only became routinely available on the NHS in Scotland, Wales, Ireland, and England between 2017 and 2020, most of these early adopters initially accessed it from private sources. Some participants reported that their limited knowledge about PrEP initially inhibited them knowing where to access it. Advocacy websites such as 'Iwantprepnow' were important sources of information about where to access PrEP and which private providers were trustworthy. Many participants also relied on GBM peers within and outside the chemsex scene for reliable information about where to source PrEP. This information facilitated their access to HIV testing at sexual health services and PrEP from mostly private international online providers.

Most participants described that overtime NHS PrEP provision provided access to a free, genuine, and sustainable supply which was integrated into the full range of sexual health services. As such, by the time of the interviews, the majority of participants were accessing PrEP via the NHS with only a minority still relying on private providers. In the NHS, some participants reported both positive and negative discussions with sexual health clinicians about PrEP and chemsex. They reported that discussions about their sexual behaviour were either unnecessarily intrusive as it involved lots of sensitive questions or superficial as it was treated as a tick box exercise when clinicians were particularly busy. Interviewees were encouraged to access PrEP when clinicians were open minded, non-judgemental, informed, and helpful.

> *"They were very confidential and open-minded. I could discuss anything with them regarding my sexual health and they were non- judgmental. It was very good support system. I didn't feel you were being judged by asking any silly questions" (Fynn, <30)*

Ultimately most participants felt confident about their ability to access free PrEP alongside other sexual health services from NHS clinics. Based on this, while advocacy websites and GBM peers were important sources of information about where to source PrEP, chemsex did not impact continued access to PrEP.

Effective PrEP use

The majority of interviewees reported very high levels of PrEP adherence which was not negatively influenced by their involvement in chemsex. For most men, their involvement in CAS during chemsex sessions continued to motivate them to use PrEP effectively to protect them from HIV acquisition.

Most men were highly motivated to take their scheduled PrEP dose immediately after a chemsex session. This was because they were conscious of the need to take their PrEP after engaging in CAS and there was a risk that they may forget the dose due to what they commonly referred to as the post session 'come down'. The come down was the immediate short term mental and physical impact of experiencing withdrawal symptoms after drug intoxication. For the majority of interviewees chemsex activity appeared to serve as a strong reminder of the ongoing need to use PrEP for protection from HIV acquisition.

> *"It might have reminded me for like when I get home, that it's probably best to take it when I get in in case I kind of crash out and wake up like 3 or 4. I think it's just kind of that protection. If I'm going to be on a little bit of a come down on Monday, I'm more likely to be in a rush. So, probably more likely to miss it then. So, it's just to make sure that I don't ever miss like two days in a row" (Ben, <30)*

However, a few men reported being more likely to miss the dose scheduled after a chemsex session if they were longer in duration. Although most participants attended chemsex sessions that lasted one night, men who reported attending chemsex sessions that lasted 48-72 hours said they could miss 2-3 doses which were due during or after the session. Another reason for missing doses was if the chemsex session involved heavier drug use which could be the use of multiple drugs, uncontrolled quantities, or particular intoxicating drug effects.

> *"If I passed out from exhaustion or from slightly too much GHB, I may sleep through and miss a dose or have a late dose. What happens much more often is a delayed dose, less than 12 hours late. I think there's a direct correlation between missing 1 or more night's sleep and being exhausted from extensive play sessions, then pass out in exhaustion, there's clearly a nexus there" (Ross, 30-40)*

In a few cases, poor mental health led to increased engagement in chemsex as a means of escapism and as a coping mechanism. This 'escapism' could have detrimental effects on psychosocial functioning including effective use of PrEP. The wider negative effects for these men included mental ill health, isolation from non-chemsex social networks and decreased occupational functioning. For a few men, missing PrEP doses due to chemsex sessions caused high levels of anxiety.

> *"When I've either missed my PrEP for a day, or two, I go to a chemsex party and then I'm panicked and go get PEP. I've done that a few times, because I've been really anxious, but I also think that's a reflection of my mental state. The anxiety skyrockets and then I rush to the clinic" (Max, <30)*

Most participants used practical strategies to ensure chemsex did not negatively impact on their ability to take PrEP. For example, some men purposefully limited the duration of chemsex sessions to one night at weekends, controlled aspects of their drugs use (i.e., types of drugs used, consumption method, dosage, and source) and avoided sessions that lasted more than one night.

> *"I've a good conscience, I don't take things from people who I don't know. I don't go and buy things from people that I don't know or take it because it's for free. I wouldn't be going to these parties that last two, three days. I will probably go back at home, after just one night out" (Wes, 40-50)*

A few participants reported sometimes taking PrEP with them to chemsex sessions to ensure they did not miss a dose. If they missed PrEP doses before a session and forget to take pills with them, they sometimes asked chemsex partners for PrEP pills if they were worried about their level of HIV protection.

Some participants strategically placed PrEP in places they knew they could access it when attending a chemsex session (i.e., car cup holders and bags). A few men who were taking medication for serious health conditions would set alarms to go off during chemsex sessions to remind them to take their pills. At this time, they would also take their PrEP. For men who had a long-term main partner who also used PrEP, they reminded each other to take their doses before and after chemsex sessions when they involved casual sex partners.

A few participants reported interrupting their PrEP use for between several days to a few weeks because they were abstaining from sex and chemsex to focus on their well-being or social/career activities. However, they re-started PrEP when they re-engaged in sexual activity.

Discussion

Our qualitative findings contribute to the growing body of literature that PrEP is a viable HIV prevention option for GBM who engage in chemsex. Additionally, and counter to initial public health concerns, GBM recognise their sexual risk behaviour in relation to chemsex and therefore chemsex serves to motivate them to use PrEP. Discussions with other GBM on the chemsex scene support men to access PrEP. Ongoing chemsex motivates GBM to adhere to PrEP without detrimentally impacting on adherence for most men. As such, chemsex positively affected most of the participants journey across the HIV prevention cascade.

In this study, participants' motivation to use PrEP was primarily driven by their desire to reduce the risk of HIV which they perceived as high due to their engagement in chemsex. As such, participation in chemsex was a strong motivation to initiate PrEP, a finding that has also been reported among GBM in Australia (Hammoud et al., 2018). Participants in our study viewed PrEP as preventing the biological acquisition of a chronic disease as well as providing broader psychosocial benefits by reducing anxiety about acquiring and living with HIV. The psychological benefits of PrEP reported in this study are consistent with the wider evidence that among GBM, PrEP reduces the psychological stress about contracting HIV (Devarajan et al., 2020; Harrington et al., 2020; Koester et al., 2017; O'Halloran, Owen, et al., 2019; Storholm et al., 2017). An important secondary psychosocial benefit of starting PrEP in our study was the potential it offered for men to explore their sexuality. Similar findings were reported in a qualitative study among GBM who used substances in the United States of America (USA) whereby participants reported increased feelings of sexual empowerment, in addition to reduced HIV related anxiety and stigma (Storholm et al., 2017). Similarly, a UK study among GBM PrEP users found that men reported feeling sexually liberated after starting PrEP and that it enhanced their experience of intimacy with partners (Harrington et al., 2020). A study in the Netherlands found belief among older MSM that PrEP increased sexual pleasure was associated with high PrEP use intention (Hulstein et al., 2022). This growing body of evidence highlights that the broader psychological benefits of using PrEP should be acknowledged as important considerations in the provision of PrEP. It also reinforces the need to promote PrEP among GBM engaging in chemsex, as argued elsewhere (Hammoud et al., 2018).

At a time in the UK when PrEP was not routinely available on the NHS, communication with other GBM on the chemsex scene was critical to men being able to know where to access PrEP. In addition, these communications helped men reflect on whether PrEP was suitable and practical for them. This type of informal peer-education has been a vital component of PrEP roll out among GBM in the UK (Prepster, 2019). Similarly, a USA qualitative study that explored the views of GBM using PrEP, found a preference for peer interventions that framed PrEP through an empowerment and sex positive lens to engage the wider community (Gómez et al., 2020). In line with highlighting the importance of peer-led interventions, a systematic literature review found that peer-led interventions significantly increased HIV testing rates among GBM in high-income countries (Shangani et al., 2017). The World Health Organization (WHO) highlight that peer-led demand creation, education, support, and delivery are critical to the effective delivery of HIV prevention services (WHO, 2021). In this study the peer-led organisation iwantprepnow was important in supporting the men's initial access to PrEP. This study highlights the importance of ensuring peer-led interventions extend into the chemsex scene to support access to PrEP.

In our study, GBM who engaged in chemsex reported very high levels of PrEP adherence. This is consistent with evidence from two literature reviews which demonstrated high PrEP adherence among GBM (Riddell et al., 2018; Sidebottom et al., 2018). It is also consistent with the growing body of evidence from PrEP studies in the UK and Canada that chemsex does not detrimentally impact on PrEP adherence among GBM (Flores Anato et al., 2021; O'Halloran, Rice, et al., 2019). There is also some evidence that substance use outside of a sexual context does not negatively affect PrEP adherence among GBM (Hoenigl et al., 2018). Another promising finding is that participants felt confident to interrupt PrEP use during short periods of abstinence from sex and chemsex. Many participants used a number of strategies to support optimal adherence before, during and after chemsex sessions, which are similar to the types of reminders used generally to support PrEP use (Arnold-Forster et al., 2022). These findings collectively demonstrate that PrEP is a valid and effective tool for GBM who engage in chemsex and should dispel public health concerns about chemsex negatively impacting effective PrEP adherence.

Adherence to any medication is a highly variable behaviour. In this study a few participants reported periods of non-adherence which they linked to longer chemsex sessions and heavier drug use. Interestingly many men intentionally avoided longer and more intense chemsex sessions knowing that these could have negative implications for their wider health which specifically included their PrEP use. In comparison, two other studies found that most GBM who engage in sexualised substance use adopt an array of multiple drug and sexual harm reduction strategies to limit the negative effect on their wellbeing (Drysdale et al., 2021; Van Hout et al., 2019). Two other studies also found that GBM who used club drugs for longer periods at a time reported occasionally missing multiple PrEP doses (Grov et al., 2019; Storholm et al., 2017). In addition, participants in our study linked sub-optimal adherence directly and indirectly to poor mental health, which has been reported elsewhere (Arnold-Forster et al., 2022; Sidebottom et al., 2018). Poor PrEP adherence during periods of poor mental health, increased drug use and increased CAS has been highlighted as representing periods of particularly high vulnerability for GBM in the USA and Canada (Hojilla et al., 2019; Shuper et al., 2020; Wray et al., 2019). The evidence suggests that an interplay of psychosocial issues with chemsex behaviours can negatively impact on wellbeing and increase the possibility of sub-optimal PrEP adherence. Health care providers should be aware of the ways in which poor mental health may exacerbate risk taking behaviour and detrimentally impact PrEP adherence.

There are a number of strengths and weaknesses of this study. We consider the fact that in recruiting to this study we intentionally avoided defining chemsex as a strength. As a socially constructed phenomenon it is challenging to universally define and means different things to different people. However, conversely this may have resulted in limiting the selection of participants to those with relatively homogenous chemsex behaviours. In addition, there was self-selection bias in terms of who responded to the study advert, and this clearly limited the exploration of broader chemsex and PrEP experiences. We were also limited in our ability to explore why GBM who engage in chemsex may discontinue PrEP because only one participant had stopped using the medication. The study's use of telephone interviews may have influenced the rapport building with interviewees which could have limited the discussion of sensitive topics. The study only attracted GBM who were over 25 years old and were predominantly white. Future research is necessary to explore the influence of chemsex on PrEP adherence among young gay, bisexual and other men who have sex with men of colour. Finally, the measure of adherence was self-reported and therefore may have been subject to desirability bias.

Conclusions

Rather than negatively influencing PrEP use it appears chemsex positively affects motivation to use PrEP, facilitates information on how to access PrEP, and continually reinforces the need for optimal PrEP adherence. GBM who engage in chemsex use a range of strategies to support adherence, but additional support may be needed during periods of poor mental health. These findings support a growing body of evidence that PrEP is a viable prevention tool for GBM who engage in chemsex and that chemsex does not negatively impact PrEP adherence. PrEP should be promoted and offered to GBM who engage in chemsex.

Declarations of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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