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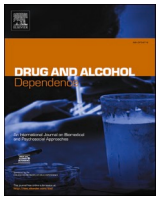

"A way to liberate myself": A qualitative study of perceived benefits and risks of chemsex among gay, bisexual, and other men who have sex with men in Almaty, Kazakhstan

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ABSTRACT

Background: In Kazakhstan, the HIV epidemic has a significant impact on marginalized groups such as gay, bisexual and other men who have sex with men (GBMSM), exacerbated by homophobic attitudes (in society) and (resulting) minority stress. This stress often leads to coping behaviors such as chemsex - the use of synthetic stimulants to enhance sexual experiences. Our study explores the motivations and perceived risks associated with chemsex among GBMSM in Almaty.

Methods: We conducted semi-structured in-depth interviews with 21 chemsex participants self-identified as GBMSM in Almaty, Kazakhstan. Participants were recruited through community-based organizations to ensure a diverse sample in terms of age and ethnicity. Thematic analysis was used to identify key themes related to motivations and risks.

Results: Participants practiced chemsex to seek liberation from societal norms and personal inhibitions, increase sexual pleasure, and escape daily stressors. Chemsex sessions provided intensified sexual experiences, emotional comfort, and social connections, challenging constraints on sexual behavior. Participants recognized significant risks, including mental and physical health issues, social stigma, and violence victimisation. Despite these risks, the desire for the perceived benefits of chemsex, particularly feelings of freedom and happiness, underscored its appeal.

Conclusions: The study reveals a complex dynamic in which chemsex serves as a coping mechanism for minority stress, a source of sexual liberation, and a social connector for GBMSM in Kazakhstan, while also posing significant health risks. These findings emphasize the need for targeted harm reduction strategies, mental health support, and community-building efforts that are responsive to the experiences and needs of GBMSM who engage in chemsex.

1. Introduction

In Kazakhstan, the number of new HIV infections increased by 73 % between 2010 and 2020, resulting in the largest increase in Central Asia and the 12th largest in the world (Lee et al., 2022). Minoritised populations such as gay, bisexual, and other men who have sex with men (GBMSM) were affected most by this surge in infection numbers (UNAIDS, 2021, 2023a). Between 2009 and 2017, the HIV incidence among GBMSM grew seven-fold and reached 6.5 % compared to 0.3 % among the general population (Lee et al., 2022). Multiple factors, including substance use, stigma, low awareness of sexual health risks, and discrimination against same-sex sexual practices hamper GBMSM's

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access to HIV prevention services and increase their vulnerability to a range of adverse health outcomes (Laughney et al., 2023; Lee et al., 2022; Paine et al., 2021). While evidence on risk behaviors such as substance use among GBMSM in Kazakhstan is still rare (Berry et al., 2012; El-Bassel et al., 2014; Lee et al., 2022), previous research revealed that approximately 60 % of GBMSM study participants reported marijuana use, and 20 % and 11 % reported stimulant and party drug use, respectively (Lee et al., 2022). Of particular concern is the prevalence of polydrug use, documented in 45 % of participants, which refers to the concurrent use of multiple substances, possibly in different contexts, including sexual ones (Lee et al., 2022). In a recent study among 1061 GBMSM in Almaty, Astana and Shymkent in Kazakhstan, the mean age of the sample was 29,0 (18 – 46+) (Wu et al., 2024). In the group of 18–25-year-old study participants, the HIV prevalence was at 27 %, compared to 38 % in the 25–35 age group. In addition, 41 % of the sample in the younger age group reported having used any illicit drugs in the past 90 days, compared to 37 % among the 25–36-year-old participants (Wu et al., 2024). Although there is a lack of clarity regarding polysubstance use in Wu's paper, we recognize that polysubstance use can occur sequentially, concurrently, or over extended periods of time. Therefore, in our research we rely on three key concepts to define polysubstance use: the substances involved, the timing of their use, and the underlying intent (Bunting et al., 2024).

Despite a more liberal legal situation than in other Central Asian countries such as in Uzbekistan and Turkmenistan where same-sex relationships are criminalized and can end in imprisonment, attitudes toward same-sex relations in Kazakhstan often remain homophobic and intolerant of sexual and gender minorities (Eurasian Coalition on Health, Rights, Gender and Sexual Diversity, 2023, 2024), which serves as a source of self-identity threat (self-concept vs. social norms) and internalized homonegativity (adaptation of negative social attitudes toward identities) among GBMSM individuals.

Minority stress theory posits that sexual minorities encounter stressors that are unique to their experience. These stressors are chronic because they are embedded in long-standing social and cultural structures, and socially constructed because they result from societal processes rather than individual characteristics. The theory postulates three processes of minority stress: (i) internalized homophobia, which refers to the internalization of society's negative attitudes toward one's sexual orientation; (ii) expectations of rejection and discrimination (perceived stigma), in which individuals anticipate prejudice and mistreatment; and (iii) actual experiences of prejudice, including direct experiences of discrimination, harassment, or violence based on one's sexual minority status (Meyer, 1995; Meyer and Frost, 2013). Some studies suggest that chronic levels of stress, such as those experienced by sexual minorities, may lead to emotional dysregulation, substance use disorders, and increased vulnerability to HIV (English et al., 2018; Flentje et al., 2020; Hatzenbuehler et al., 2008; Mann et al., 2022; McConnell et al., 2018; Meyer, 1995; Meyer and Frost, 2013; Singh et al., 2023). In consequence, prolonged exposure to minority stress can have significant negative effects on both mental and physical health. Identity theory was extended to the GBMSM population through the research of Jaspal and colleagues (Jaspal, 2021, 2022; Lopes and Jaspal, 2024), which has shown that minority stressors that cause identity threats, undermine self-esteem, self-efficacy, positive distinctiveness as well as self-worth, are particularly associated with higher levels of distress, anxiety, and depression. Thus, both chronic stress and the experience of identity threat can activate negative coping responses in sexual minorities (Jaspal, 2021; Meyer and Dean, 1998; Meyer and Frost, 2013). In an effort to alleviate minority stress or temporarily avoid identity threat stressors, some groups of GBMSM may engage in coping behaviors such as having multiple sexual partners and using substances during sex, a sociocultural phenomenon known as *chemsex* (Jaspal, 2021; Mowlabocus, 2021; Stuart, 2013, 2016, 2019).

The emergence of digital technologies, particularly online dating apps, has significantly changed the landscape of how GBMSM can connect with each other, particularly in societal settings that may previously not have been welcoming or safe for this group. This evolution in digital connectivity has not only facilitated easier and more discreet ways for individuals to meet but has also played a crucial role in changing practices around sexualized drug use, namely chemsex (Stuart, 2013, 2016, 2019). Chemsex, as a global phenomenon, is usually described as sex between men that occurs under the influence of drugs taken immediately preceding and/or during the sexual session with the use of crystal methamphetamine, GHB/GBL, amphetamines, ketamine, cocaine, mephedrone, or other synthetic cathinones to enhance and facilitate arousal and sexual pleasure (Bourne, Reid, Hickson, Torres-Rueda, Steinberg, et al., 2015; Edmundson et al., 2018; Hegazi et al., 2017; Maxwell et al., 2019; Stuart, 2013). Estimating the global prevalence of chemsex is challenging due to significant differences in study design, recruitment methods, and the influence of political and drug policies in different countries (Amundsen et al., 2023). Studies focused on chemsex often differ in their scope, with some conducted in clinical settings and others using online surveys or community-based approaches, resulting in inconsistent and potentially biased data (Amundsen et al., 2023). Despite these challenges, recent systematic literature reviews found that the global prevalence of lifetime chemsex experience varied widely, from 17.4 % to 52.5 %, depending on the population and region studied (Coronado-Muñoz et al., 2024; Eustaquio et al., 2024; Maxwell et al., 2019; Wang et al., 2023). For recent chemsex (within the past 12 months), the prevalence among GBMSM ranged from 3.0 % to 28.4 %, with an average of about 16 % (Coronado-Muñoz et al., 2024; Eustaquio et al., 2024; Maxwell et al., 2019).

Chemsex has been associated with several negative health outcomes, including an exacerbated risk for contracting HIV and other sexually transmitted infections, poorer mental health and an increased risk for experiencing intimate partner violence (Bohn et al., 2020; Bourne, Reid, Hickson, Torres-Rueda, and Weatherburn, 2015; Field et al., 2023; Hawkinson et al., 2024; Maxwell et al., 2019; Miltz et al., 2021). Chemsex poses significant risks for HIV infection due to high-risk behaviors such as condomless sex, sex with multiple partners, and prolonged sexual sessions (Chan et al., 2022; Maxwell et al., 2019; Sewell et al., 2018). For example, a recent systematic review of the risks of HIV and STIs among GBMSM who engage in chemsex in low and middle-income countries found that that the HIV incidence in the target population in the past six months ranged from 13.1 to 16.2 per 100 person-years, whereas the incidence among those who did not engage in chemsex ranged from 5.4 to 7.7 per 100 person-years (Eustaquio et al., 2024).

Current knowledge about chemsex and the factors that motivate individuals to engage in it is based primarily on studies from Northern America, Australia and Europe, regions with different cultural, political, religious, gender, and social norms than those in Central Asia (Bourne, Reid, Hickson, Torres-Rueda, and Weatherburn, 2015; Graf et al., 2018; Íncera-Fernández et al., 2023; Leyva-Moral et al., 2023; Nimbi et al., 2021; Santoro et al., 2020; Weatherburn et al., 2017). This geographic and cultural gap highlights the need for localized research to capture the unique dynamics of chemsex practices in settings that differ significantly from those previously studied. Thus, it can identify differences in the substances used for chemsex compared with other regions where amphetamine-type stimulants predominate (Maxwell et al., 2019; Wang et al., 2023). Building on this gap, and through the lens of minority stress and identity theories, we aim to investigate the motivations as well as the perceived risks and harms associated with chemsex practice among GBMSM in Kazakhstan.

Information on chemsex in Kazakhstan is limited, with only one study briefly assessing self-reported chemsex participation within the past 90 days. In this study, conducted between July 2018 and February 2019, 41.1 % of GBMSM participants reported engaging in chemsex during this time period (Lee et al., 2022). At the same time, there has been a notable increase in awareness and engagement regarding chemsex issues among community organizations and healthcare

professionals in Almaty, as evidenced by recent studies and community feedback (Community Friends [@community_friends], 2022; Lee et al., 2022; Paine et al., 2021; Ungarova and Moskeu, 2023; VECHERKZ, 2023).

To our knowledge, this is the first study that presents comprehensive qualitative insights into the practice of chemsex among a particularly hard-to-reach population in Kazakhstan. Our study aims to fill the gaps in understanding the motivations and perceived harms associated with chemsex participation among GBMSM in the Kazakh context. Understanding the underlying motivations, such as social, psychological, cultural or any others, is critical to enable health care providers, community workers and policy makers to develop targeted harm reduction strategies, mental health support and community building efforts that are responsive to the needs and experiences of GBMSM who engage in chemsex (Bourne, Reid, Hickson, Torres-Rueda, Steinberg, et al., 2015; Dwyer et al., 2021; Jaspal, 2022; Lunchenkov et al., 2024; Weatherburn et al., 2017).

2. Methods

Throughout this study, the authors followed the Consolidated Criteria for Reporting Qualitative Research (Tong et al., 2007) (see Supplementary file 1).

2.1. Study settings

Qualitative data was collected through in-depth face-to-face interviews with chemsex participants self-identified as GBMSM in Almaty, Kazakhstan. This country was selected because it is part of the Eastern Europe and Central Asia (EECA) region, which remains the most problematic area with a steady increase in new cases of HIV infection (European Centre for Disease Prevention and Control/WHO Regional Office for Europe, 2023; UNAIDS, 2023a, 2023b). We chose to focus on Almaty because it is the former capital and now the largest city in Kazakhstan, and it has been suggested that the largest population of GBMSM is most likely residing in Almaty (Wu et al., 2017). To the best of our knowledge, this is the first qualitative study investigating chemsex experiences and perceptions among GBMSM in Kazakhstan as well as in broader Central Asia.

2.2. Study design and recruitment strategy

We conducted semi-structured in-depth interviews (IDIs) with gay, bisexual, and other men who have sex with men. GBMSM were eligible for participation in the study if (i) they reported having practiced chemsex within the last 12 months with the use of any of nine substances (amphetamine, cocaine, crystal methamphetamine, ecstasy, ketamine, GHB/GBL, alpha-PHP, mephedrone, or other synthetic stimulants) before or during sex with a man (ii) were 18 years or older, and (iii) residing in Almaty, Kazakhstan. Authors NL and NC recruited participants through community-based organizations in Almaty, namely "Community Friends" and "Public Fund Centre for Scientific and Practical Initiatives", which provide services around HIV, other STIs, and harm reduction for GBMSM. Information about the study, including contact information for the primary investigators, was posted on these organizations' social media platforms, online dating apps, or closed Telegram channels.

Of the potential study participants who contacted our research group ($n=39$), 54 % ($n=21$) were eligible to participate based on their age and self-reported chemsex behavior. The relatively low number of eligible participants for our study, despite the broad inclusion criteria, is explained by several issues faced during the data collection process. First, some interested individuals lived in cities outside of Almaty and inquired about their possible participation online. However, since our study was designed for in-person participation in Almaty to ensure consistency in data collection and data integrity, we were unable to accommodate these requests. In addition, several potential participants inquired about the possibility of covering their travel expenses to Almaty or requested that the research team visit their locations to conduct the study. Unfortunately, due to budgetary constraints and concerns for the personal safety of our research team in view of the sensitive nature of the topic, we were unable to accommodate these requests. Furthermore, there were instances in which individuals who initially expressed interest later indicated that their involvement in chemsex was less frequent than the study's eligible timeline. Finally, some potential participants either did not meet the age requirements, with their actual age being revealed at a later stage of the screening process or had language barriers that prevented them from communicating effectively during the interview.

We aimed to recruit 18–20 participants for this study, in line with recommendations for medium-sized qualitative studies, which suggest a range of 15–30 participants (Terry et al., 2017; Witzel and Reiter, 2012). Our decision to consider the final sample size (n=21) sufficient was based on the comprehensive depth and breadth of themes that were developed from the interviews and saturation that was reached. Specifically, after each interview, the research team reviewed the data to assess whether substantial new information and new themes were emerging. Once the data was becoming repetitive, indicating that additional interviews were unlikely to yield further unique insights, the research team agreed that saturation was reached and did not schedule further interviews. Prior to conducting the interview, NL and NC informed the participants about the study by providing them with an information sheet that included a project description and detailed information about the health-related services that the participants could contact if they felt the need. Before the interview, study participants were asked to sign a consent form voluntarily. All study participants were compensated for their time and effort with the equivalent of $25 in cash in the local currency. However, to avoid incentive bias and any financial pressure to participate in the study, participants were informed of the compensation only upon completion of the interview. Ethical approval for this study was obtained from two institutions, the Institutional Review Board of the Technical University of Munich (537/21 S-NP) in Germany, and the Local Ethical Committee of the Asfendiyarov Kazakh National Medical University (protocol №3/139) in Kazakhstan. Local ethical approval was required for formal acceptance of the study results by government institutions, and in accordance with the decolonial discourse in global health that the research group strongly supports (Kwete et al., 2022).

2.3. Protection of confidentiality and privacy of participants

Maximum effort was made to protect study participants' confidentiality and privacy. At first, potential participants were advised to use encrypted communication tools (e.g., Signal or encrypted chat on Telegram) to contact the research team and to protect the content of those communications from unauthorized access.

Second, the consent forms were designed to ensure anonymity, which means that no personally identifiable information (e.g., name, address) was collected. Participants were offered the option of creating their own pseudonym. In the results report, the men were given pseudonyms following the prefix "P" and then numbered in chronological order according to their participation in the interviews. Also, any potentially identifiable information mentioned during the interviews (e.g., specific locations in the city such as neighborhoods or hotels where people met) was removed during the transcription process to prevent indirect identification of participants.

Finally, all data, including audio recordings, transcripts, and analysis files, were stored on a secure server at the Technical University of Munich that was accessible only to the core research team. This ensured that the data could not be accessed by unauthorized persons. Each team member signed confidentiality agreements to reinforce their commitment to protecting participant information.

2.4. Data collection

Authors NL, JIS, and NC, relied on MTS to prepare an interview guide in English (see Supplementary file 2). All materials developed for this study were translated from English into Russian by a certified translator. The guide was piloted, pre-tested and approved within the research group, collaborators from local NGOs and with several experts in the field of chemsex or GBMSM health from research institutions and community-based organizations. During IDIs, we gathered demographic data such as age, ethnicity and sexual identity from the participants. The interview guide was designed to actively explore themes capturing the experiences, motivations, and perceived benefits of chemsex. Furthermore, we assessed participants' views on potential risks associated with chemsex practice. All interviews were conducted by NL, who is a medical doctor specializing in HIV prevention and treatment; self-identifies as a gay man; is fluent in Russian: and has extensive experience conducting research on chemsex experiences in marginalized populations. At the time, he was enrolled on a doctoral program at the Technical University of Munich. Interviews were conducted in Russian in a private setting at a community-based organization providing specific services to GBMSM in Almaty and lasted approximately 60–90 min. Interviews were conducted in secure NGO facilities in a separate room used for meetings of the team that helped recruit people for the study, to prevent unauthorized access by others. Only NL and the participant were present during the interview. Interviews were audio-recorded with the participants' consent and transcribed verbatim. All transcripts were translated from Russian to English by a certified translator. These translations formed the foundation of our analysis. Because NL is a native Russian speaker, he was able to refer back to the original Russian transcripts when necessary. This ensured accuracy and fidelity to the participants' expressions and meanings. Participants did not have the opportunity to review or provide feedback on the transcripts or findings, as logistical constraints made this unfeasible.

To supplement the audio recordings, NL prepared postscript reflections immediately following each interview. These postscripts provide a brief overview of the interview content and include observations on situational and non-verbal cues, as well as highlights from the interviewee's responses. They also capture any spontaneous thematic insights and interpretative ideas that arose during the interview and served as valuable an aid for the analysis but were not analyzed themselves (Witzel and Reiter, 2012). By comparing these reflections to the emerging themes, we validated the analysis, ensuring that it was grounded in both the data and the context in which it was collected. In this way, postscripts were used for data triangulation. For example, if a particular theme about chemsex emerged consistently across interviews; the research team referred to the postscript reflections to note that this narrative was also noted as dominant in the immediate post-interview reflections. Postscript reflections also played a role in identifying and refining themes. For example, the theme related to participants' pleasure or euphoria derived from the physical effects of substances was informed by both the coded data and the researchers' reflective notes on body language and tone during the interview (e.g., vivid memories of the effect and the participant's posture and smile).

2.5. Data analysis

Qualitative data were analyzed utilizing Atlas.ti (ATLAS.ti Scientific Software Development GmbH, 2023), following the principles of thematic analysis based on an inductive approach (Braun and Clarke, 2006, 2019). Following Braun and Clarke's six-step process for thematic analysis (Braun and Clarke, 2006), NL and JIS began the first step by familiarizing themselves with the data. This involved repeatedly reading the interview transcripts to become thoroughly familiar with their content and to lay the groundwork for analysis. This step was essential for developing a thorough understanding of the content and context of participants' responses. After the first step, NL and JIS proceeded to generate initial codes from the first five interview transcripts. This process was conducted inductively, meaning that the codes were derived directly from the data rather than based on preconceived categories or theoretical frameworks. Each transcript was carefully reviewed, with NL and JIS identifying and labelling segments of text that were relevant to the research questions. The coding was initially done independently, allowing a wide range of potential codes to emerge. In the third step, once the initial codes had been generated, NL and JIS began the process of organizing these codes into potential themes. This involved grouping related codes together and considering how different codes could be combined or linked to form overarching themes that captured the essence of the data. During this phase, NL and JIS began to develop a preliminary thematic map that outlined the major themes and sub-themes that emerged from the data (see Supplementary file 3). After identifying potential themes, in step four, NL and JIS shared their developing codes and themes with the entire research team for discussion and refinement. This joint review process led to reliability and validity of the analysis. The research team critically examined the proposed themes, considering how well they represented the data and whether they captured the complexity of participants' experiences. As a result of these discussions, some themes were modified, merged, or discarded, while others were further refined. The final coding scheme can be found in Supplementary file 4. This collaborative review led to the organization of codes related to motivations into three primary themes: psychological, physical-sexual, and social. Similarly, codes related to perceived risks were organized into the five separate themes of psychological, physical, social, violent victimisation, and economic risks. Once the themes were reviewed and refined, NL and JIS focused on defining and naming each theme. This step involved clearly articulating the essence of each theme and ensuring that it was distinct and meaningful. They provided detailed descriptions of each theme, identifying the specific aspects of the data it encompassed and how it related to the overall research questions. The themes were given concise and descriptive names that conveyed their core meanings. The final, six step involved synthesizing the themes into a coherent narrative that presented the findings of the study. Additional quotes from study participants can be found in Supplementary file 5.

2.6. Author reflexivity and positionality

The first author and primary investigator is both a medical doctor and a health scientist, while the second author, who conducted the interviews, is a psychiatrist and the last author, who participated in the data analysis and interpretation, is a global health researcher. It is important to acknowledge the perspectives and backgrounds of the researchers, as these factors influence various stages of the research process, from the development of the study design and construction of the interview guide to the analysis and interpretation of the results.

The first author, in addition to his professional experience as a HIV physician working specifically with GBMSM, identifies as a cis-gay man and is thus also a member of the GBMSM community. His identity and lived experience are connected to the subject matter of this study, particularly as he shares cultural and social ties with GBMSM communities in Eastern Europe and Central Asia. This dual identity – both as a health care provider and as a gay man - has contributed to a deeper understanding of the complexities and challenges faced by individuals within these groups. His professional background in clinical management of HIV and public health allowed him to approach the research with a scientific lens. His personal experiences, including navigating the health care system as a gay man and understanding the stigma and marginalization faced by the community, likely shaped his approach to the research. These experiences influenced not only the conceptual framework of the study, but also the sensitivity with which he engaged with participants during interviews and interpreted their narratives His familiarity with the cultural and social nuances of the GBMSM community in Kazakhstan may have led to a deeper exploration of areas that

an outsider might not have recognized as significant. At the same time, this proximity may have introduced certain biases, such as assumptions about shared experiences or challenges that may not apply universally to all participants in the country.

The second author, as a psychiatrist with experience in mental health, also brought a particular set of skills and perspectives to the research. Her background in psychiatry enabled her to approach the analysis with sensitivity and an understanding of the psychological dimensions of the participants' experiences. However, it is important to note that her professional training and clinical perspective may have influenced the way in which she interpreted participants' narratives, particularly in terms of focusing on mental health aspects that may or may not be consistent with participants' own perceptions of their experiences.

The last author, a researcher from a high-income country, has previously conducted studies on HIV-related stigma and sexual risk behaviors in marginalized communities, experiences that have likely influenced her perspective on the collected qualitative data. While she is not a member of the GBMSM community and lacks prior experience working in Central Asia, she is acutely aware of the privilege she holds in conducting research in Kazakhstan. She recognizes her limited understanding of the sociocultural dynamics of the region, and therefore places great value on the local expertise, contextual knowledge, and nuanced perspectives contributed by the other two authors.

3. Results

Between July and September 2023, 21 in-depth interviews were conducted with chemsex participants in Almaty. Characteristics of the sample are presented in Table 1.

While our study considered a wide range of substances recognized in the literature as chemsex drugs (Maxwell et al., 2019; Schmidt et al., 2016; Stuart, 2013, 2019), most participants in the Kazakh context reported using only two substances for chemsex: mephedrone and alpha-PHP.

3.1. Motivations for chemsex

The next sections outline the primary motivations for chemsex practice identified by the study participants.

3.1.1. Psychological motivation

The first motivator our study participants expressed are psychological benefits associated with chemsex practice. Participants described chemsex as a way of getting the sex they wanted, freeing themselves from internal constraints, and temporarily escaping the pressures and challenges they faced in their daily lives.

3.1.1.1. Empowered selves: boosting confidence and self-esteem. Our study participants emphasized that chemsex, particularly through the substances consumed, improved their self-esteem and confidence. This allowed chemsex participants to view their bodies as they wished them to be or to achieve a state of satisfaction with their appearance. Some of the participants described experiencing transient depersonalization, a feeling of detachment from oneself during chemsex sessions. They explained how the use of substances, combined with the act of chemsex itself, facilitated the ability to fantasize about idealized versions of themselves or change their self-perception.

> Until I started using [drugs in sexualized context], I had problems with self-esteem, I thought I was ugly, I had problems when I tried to look at myself in the mirror. (P16, 23 y.o.)

Accordingly, the men who reported feeling insecure while sober linked these feelings to an idealized self-image, which was more in line with the "mainstream" body image prevalent in media depiction. Others traced the origins of their insecurities to negative childhood experiences related to body image or possible peer bullying, reflecting how substances help them ignore or forget these experiences:

> This insecurity from my childhood about being overweight stayed with me. Even after I lost the weight, I still had this insecurity about whether I am attractive, but when I'm on drugs I don't really think about that. (P10, 34 y.o.)

Men often noted that their self-perception and body image significantly hindered their ability to connect with other men, primarily due to fear of rejection, which substances helped to overcome during chemsex sessions. Interestingly, the fear of rejection was also caused by peer pressure to use substances and followed by a strong desire to please their partners. This can be illustrated in a quote by P1:

> There was a kind of pressure, like it was important for him that I take it [mephedrone]. And my need to please comes out again. For some reason, I fell for it. […] He was leading me on. He said, "Yeah, it's all right, there's just one more line. […] It will relax you". (P1, 28 y.o.)

3.1.1.2. Liber(sex)ation: breaking societal boundaries and self-limits. Participants broadly discussed two narratives of liberation, first in relation to their sexuality. Thus, men typically portrayed chemsex as a means of transcending the sociocultural constraints with respect to conventional male roles in a patriarchal, traditionalist, and heteronormative society, thereby challenging dominant norms and expectations of male sexual behavior. They frequently expressed how liberating the experience was, insisting that they had never felt, and could never feel, such a profound sense of freedom as they did during chemsex sessions:

> Chemsex has a specific purpose for me. That specific purpose is liberation. Total liberation. It's the fulfilment of needs that I suppress within myself. It's what I can't allow myself without drugs. […] it's like getting all the crap out of you. What do I mean by crap? Everything that is wrong, everything that is immoral. And then after that you can live like you are pure. (P1, 28 y.o.)

Secondly, some interviewees characterised these feelings not only as a rebellion against external societal or state-imposed constraints, but also as a deep personal journey allowing them to break down personal barriers and questioning self-imposed limitations on sexuality and identity that go far beyond the act of sex itself.

> I feel a kind of liberation, it removes all these walls that we build in our heads, the walls that we invent for ourselves. (P2, 25 y.o.)

In this context, chemsex effectively assumed the role of a "liberator", facilitating escape from both external societal constraints and internal personal limitations.

3.1.1.3. Seeking solace: the pursuit of detachment and relaxation. Chemsex was viewed by participants as a form of self-medication and an

Table 1
Demographic characteristics of study participants.

Demographics	Participants (n=21)
Sexual identity	
Gay	14 (67 %)
Bisexual	5 (23 %)
Other[a]	2 (10 %)
Ethnicity	
Kazakh	13 (62 %)
Russian/Ukrainian	6 (28 %)
Other[b]	2 (10 %)
Age (median, IQR)	26 (24–32)

[a] Included Pansexual and Genderfluid identity.

[b] Included Kyrgyz and Uighur ethnicities.

essential source of relaxation and comfort that was distinct from reported sexual pleasure. They described relaxation as an escape or detachment from daily stressors, such as family arguments or work-related obstacles, providing a space to release worries and immerse themselves in an environment of ease and well-being:

> It's a magic wand because all your worries, problems and fears, no matter how big or how serious, they just get turned off. They just go away, and they don't exist in that moment. (P6, 32 y.o.)

They portrayed chemsex as a form of self-care in which the act of using illicit substances in a sexual context becomes a method of achieving mental relaxation and emotional comfort. It is noteworthy that chemsex participants often described their experience not as a true forgetting of their external challenges, but rather as a shift in how they viewed and prioritized those issues. Issues that existed outside the chemsex setting were perceived as less important, outshone by the emotions and feelings experienced during the chemsex sessions.

3.1.2. Sexual and physical motivation: the dynamics of longevity, variability, arousal, and pleasure

The second motivator for chemsex centers around the perceived physical and sexual benefits that revolve around the dynamics of longevity, variability, arousal and exaggeration, euphoria and pleasure. The data revealed a dominant narrative focused on intense sexual experiences, comprising the aspects of longevity, sexual variability, arousal, and pleasure. Chemsex thereby appeared to enable GBMSM to realize a higher physical and sexual self-efficacy. This reflects an interplay between the psycho-pharmacological effects of mephedrone or alpha-PHP and the psychological and emotional dimensions of sex.

The first aspect, longevity, did not only refer to the duration of sexual activity, but also the sustained intensity and commitment that participants sought. Both alpha-PHP and mephedrone were often credited with the ability to extend sexual encounters far beyond typical limits, allowing for a prolonged exploration of desire and pleasure. This prolonged duration was not just physical endurance, but a prolonged period of heightened emotional and sensory experiences that facilitated the forming of deeper connections with sexual partners. For instance, one participant pointed out:

> Length. For me, this was probably the most important criterion that influenced me. The level that one of the partners can reach in terms of… Well, this is not fast sex, this is not classic sex. Maybe it's a kind of rough sex. It turns into some possible, I don't know, fetishes, moments, depending on the partner. (P5, 26 y.o.)

Apart from longevity, participants valued the variability of sexual practices they could achieve during Chemsex, such as BDSM, brachioproctic encounters ("fisting"), urolagnia ("golden showers") or group sex, which they would consider immoral or unacceptable in a sober state.

> For me, some things are immoral in terms of sex, I mean, fetishes and stuff […]. And that framework is completely erased when I'm on drugs. Like foot fetishes, domination, BDSM, group sex. (P15, 20 y.o.)

Interestingly, some study participants noted that they could only engage in "traditional" receptive sexual activities, such as oral or anal sex, while under the influence of drugs. They reported experiencing exceptionally high levels of sexual arousal that allowed them to overlook any potential limitations, whether related to their sexual preferences, perception of *"appropriate male sex"* or physical limitations such as pain and discomfort.

> I, who is, let's say, top to the core, I had a mad desire to be really fucked by a crowd. […] Before I didn't even give a blowjob, because in my concept I am the top, I got blowjobs, but I didn't give up all my stereotypes, all my certain boundaries. (P20, 28 y.o.)

Most participants noted how substances significantly enhanced their physical sensations. Men reported not only intense physical stimulation but sometimes described types of electric sensations that ran through their bodies, accompanied by waves of pleasure. Such physical experiences were described as a form of enlightenment and extreme euphoria.

> I still remember feeling it clearly: you breathe in, you breathe out, and you have a feeling of enlightenment, that is the effect. […] it's like a kind of light reanimation. And now I remember I had a rush of blood up my spine […], and then everything else came, these tactile sensations, some kind of excessive activity. (P1, 28 y.o.)

The exaggeration of these sensations contributed to a transcendent experience in which the boundaries of physical sensation blurred, and participants felt enveloped in an all-consuming bliss.

3.1.3. Social motivation: homo(social) space, sociability and ease of communication

Finally, participants talked about social motivators as a driving force for Chemsex. Participants often characterised chemsex as a social space with increased openness and fluidity in communication, making it easier for individuals to express themselves and find needed social support which is usually unattainable with other individuals outside of chemsex circle.

> Now, looking at it from a distance, I think for me at that time it was the only social group where I wasn't exposed to violence, where we used drugs and understood each other. […] And there you could find support for these problems, like withdrawal, not having drugs, feeling bad, coming down, or anything else. (P6, 32 y.o.)

The social aspect of these meeting spaces is particularly noteworthy. Participants reported that chemsex sessions often serve as a platform for building and strengthening social connections within the community. These connections are based not only on sexual encounters, but also on shared experiences, intimacy and spiritual connection, mutual understanding, and collective navigation of the risks and pleasures associated with Chemsex.

3.2. Perceived risks

Our study participants also articulated various risks associated with Chemsex. We grouped these identified risks into four distinct themes, highlighting participants' awareness of the health and societal dangers of engaging in Chemsex.

3.2.1. Mental health risks

Participants described a wide range of mental health risks, including addiction, anxiety, depression, and withdrawal symptoms. They emphasized that chemsex involvement could lead to what they described as psychological dependence, manifesting as intense compulsions to use substances, frequent episodes of craving, and elevated levels of anxiety. The prevailing narrative was that addiction, when it develops, can cause significant negative changes in their lives, potentially leading to loss of identity or other serious consequences:

> I think that a person can lose their identity when they use [drugs] for a long time, a person who doesn't have a core, an inner "I", they can just lose their personality or never find it, I mean, their personality is erased to the point that they turn into some kind of homunculus, let's say. (P4, 24 y.o.)

Another common concern revolved around anxiety and acute psychosis that might manifest during the intense and sometimes overwhelming experiences associated with substance use during Chemsex. In particular, we found that participants perceived alpha-PHP as having a greater potential for acute psychosis, including detachment from reality, hallucinations and delusions, than mephedrone. These feelings were described as particularly distressing and very dangerous.

> I began to become psychotic. I started to panic. I felt like I was being followed. Like the riot police were at my door, ready to bust in. I think if I had taken more [Alpha-PHP], I would be in a psychiatric hospital right now. (P15, 20 y.o.)

The aftermath of chemsex participation was described as a significant mental health challenge, often associated with depressive and withdrawal symptoms. Participants described experiencing deep sadness, intense isolation, and emotional hollowness. They articulated how the euphoria experienced during chemsex sessions was often followed by a significant emotional crash, leaving them feeling exhausted and emotionally drained.

> It's a terrible state of emptiness and hollowness, both physically and emotionally and psychologically. The colors just fade away. It's like turning off the contrast on a TV and the world becomes black and white. (P6, 32 y.o.)

This post-chemsex depression could be accompanied by a loss of interest in activities they once enjoyed, difficulty concentrating, and even thoughts or actions of self-harm:

> I was just lying there, doing nothing, hysterical, crying. I did not want to live; I had such thoughts. (P16, 23 y.o.)

3.2.2. Physical health risks

The study participants identified a wide range of physical health risks associated with Chemsex, indicating a deep awareness of adverse outcomes, as well as both general and specific dangers. These ranged from general ideas of multiple organ insufficiency that could result from unpredictable adverse reactions to the substances used or unintentional overdose. Additionally, participants shared about more specific risks including damage to nasal mucous membranes, skin chafing, or anal fissures due to the intensity and longevity of sexual activities during chemsex sessions. The majority of participants expressed concern about the risk of HIV or STI infections during chemsex sessions:

> …my partner, who was on meph [mephedrone], tried to have unsafe sex. For some reason I was afraid that I would get something, that I would catch something and die, it was more like a fear of death. (P2, 25 y.o.)

They also noted that condom use is inconsistent and varies with mood changes or different partner requests.

3.2.3. Violence victimisation

A major concern associated with chemsex is the risk of encountering violence. Violence can be perpetrated by other chemsex participants under the influence of substances in the context of chemsex sessions:

> I had another negative experience when I encountered an aggressive person. The person was using drugs… Suddenly he went completely crazy and started shouting and cursing, hitting things loudly and threatening me. (P1 28 y.o.)

In addition, violence may be perpetrated by (homophobic) criminals who use dating apps to assault or blackmail individuals based on their sexual behavior. Interestingly, participants highlighted that some of these criminals may even be affiliated with law enforcement, misusing their official status to commit such crimes.

> I was directly threatened. I called the police, the police came, it turned out they knew him, they were protecting him […]. At one point I was taken away. And the police threatened me, they threatened me with violence. (P6, 32 y.o.)

This leaves chemsex participants feeling vulnerable and powerless in a context where law enforcement fails to provide effective protection and may even become a source of significant threat.

3.2.4. Social stigma and prejudice

Finally, study participants described how regularly practicing chemsex can lead to social exclusion from their social network outside the chemsex world. In their words, chemsex is highly stigmatised, with little acceptance even among other LGBTQI+ people. Some of them have even experienced stigma and insults from their peers.

> It even got to the point where people I knew started calling me "dope, dope addict." […] And then it got to the point where they say "junkie." (P20, 28 y.o.)

Chemsex participants reported that the social ostracism they faced did not cause them to reconsider or change their substance use behavior. Rather, it deepened their sense of isolation and loneliness, thus actually reinforcing their attachment to the chemsex scene.

3.2.5. Economic and financial risks

This theme was created to capture additional risks that were mentioned by participants but were less prevalent and did not fit into the previous themes. For example, some of our participants mentioned the potential risk of losing one's job, mainly due to withdrawal symptoms occurring during work times and hampering productivity and performance, together with the lack of sleep.

> [I faced problems at work] when I was using during the week and went to work the next day without getting enough sleep, without sleeping at all. Of course, these moments were difficult, I made some mistakes. (P3, 34 y.o.)

In addition, several participants highlighted the financial pressure associated with regular participation in chemsex. They expressed concern about the high cost of obtaining substances, as well as the potential financial instability that could result from prioritizing chemsex activities over other expenses. Interestingly, participants also mentioned a distinct subgroup of individuals referred to as *"chaykas"* or *"seagulls"* who never contributed financially to drug procurement. This does not only put an additional financial strain on those providing substances, but was also considered as poor etiquette within the chemsex community:

> A "chayka" is someone who mooches off others… Everybody should come with something… alcohol or something or some kind of drugs. […] We all share everything and that's the way it is. (P10, 34 y.o.)

4. Discussion

Our study highlighted the key motivations and perceived risks associated with chemsex practice among GBMSM in Kazakhstan, thus presenting novel evidence from a, to-date, heavily under-researched region. While some narratives were consistent with previous research from Western contexts, including motivations related to curiosity, sexual arousal, and heightened sensation, some of the findings appeared more unique to the Kazakh setting (Deimel et al., 2016; Drysdale et al., 2020; Graf et al., 2018; Leyva-Moral et al., 2023; Nimbi et al., 2021; Santoro et al., 2020; Weatherburn et al., 2017). We found that both minority stress theory and identity theory were reflected in participants' motivations for chemsex, although they operated through different pathways. Specifically, we observed that chemsex was used not only as a coping strategy to alleviate the chronic stress associated with minority status, as described by minority stress theory, but also as a way to temporarily avoid the stressors associated with identity threats, a concept central to identity theory.

Some of the key motivations revealed by our participants were an enhanced self-perception and boosted self-esteem. This is consistent with prior research findings, which have emphasized how social pressures to conform to certain body types, physical appearance, and masculinity norms (in some cases driven by the GBMSM community) can undermine self-esteem and were successfully mitigated by chemsex

(Evans, 2019; Gertzen et al., 2024). According to these previous studies, facing identity threats can lead individuals to practice chemsex as the use of substances such as mephedrone, which is known to induce feelings of euphoria and heightened sexual confidence, can provide temporary relief from these stressors and negative psychological experiences (Freeman et al., 2012). In addition, substances such as mephedrone can also impair memory performance, which may reduce a person's awareness of certain stressors and experiences that previously challenged their sense of identity. This temporary avoidance creates a paradoxical situation in which individuals feel more confident and secure in their identity during chemsex sessions, but the underlying issues remain unresolved, potentially leading to continued reliance on these behaviors to cope with identity-related stressors. Therefore, future interventions should directly address issues of low self-esteem and self-perception among GBMSM and help them find alternative ways to achieve empowerment and self-affirmation without relying on substances.

Consistent with our analysis revealed how participants engaged in chemsex to achieve a sense of relaxation and detachment from perceived stigma. The participants also seemed to go beyond their usual limits of sexual activity, the existence of which we interpret as an indication of internalized homonegativity. This is consistent with the classic minority stress model and aligns with findings from other cultural contexts, such as Singapore, Malaysia, and Russia, where chemsex also serves as a coping strategy (Lunchenkov et al., 2024; Meyer and Frost, 2013; Palmer et al., 2023; Tan et al., 2018).

In our setting, the interplay between these two theories is evident, suggesting that chemsex functions both as a coping response to chronic stress and to identity threats, and remains a very complex phenomenon, especially in conservative settings. We propose to apply the notion of a syndemic and to view chemsex in context and countries where social attitudes towards homosexuality are predominantly negative, we suggest that chemsex should be understood as serving a dual purpose: both as a stress management tool and as a means of preserving one's sense of identity in the face of social oppression (Jaspal, 2021; Lasco and Yu, 2024; Lunchenkov et al., 2024; Palmer et al., 2023; Tan et al., 2018).

We identified substantial differences in what substances are used and what is therefore identified as chemsex [seem to] exist between "western" and Asian settings. A recent meta-analysis of chemsex (Wang et al., 2023) identified a large variation between substances used in Asian settings and those in other settings. While crystal methamphetamine use was more prevalent than in European countries, the use of GHB/GBL and cocaine was significantly lower. The meta-analysis highlights the increasing presence of new substances and synthetic cathinones such as alpha-PHP in the Asian context (Wang et al., 2023). The authors recommend close monitoring of these emerging drugs because of their potential unforeseen effects on health and well-being. This confirms that our understanding and definition of chemsex has been shaped by research from Western Europe and the US (Bourne, Reid, Hickson, Torres-Rueda, and Weatherburn, 2015; Maxwell et al., 2019; Stuart, 2013) and would benefit from a revision and extension to acknowledge regional differences in substances used along with their specific physical and psychological effects.

Our participants demonstrated a critical understanding of the risks associated with chemsex practice and acknowledged the potential physical and mental health consequences as well as the social and economic risks, thus corroborating findings from previous research conducted worldwide (Bourne, Reid, Hickson, Torres-Rueda, Steinberg, et al., 2015; Brener et al., 2020; Herrijgers et al., 2020; Íncera-Fernández et al., 2023; Lunchenkov et al., 2024; Maxwell et al., 2019). Yet, despite their awareness of the physical and mental health consequences associated with Chemsex, such as the risk of HIV infection, addiction, psychological distress, violence victimisation, and the social stigma associated with drug use, men participating in our study perceived the moments of freedom and happiness derived from chemsex as invaluable. While individuals may consciously weigh up the risks and benefits of engaging in Chemsex, the societal structures that perpetuate marginalization and inequality likely contribute to a conscious acceptance of risk. Building on this, public health interventions should focus equally on providing harm reduction measures for GBMSM groups and on building affirming support systems that address the pathways to engagement in Chemsex, prioritizing the health and psychological well-being of individuals while respecting their autonomy and agency. A systematic review of process evaluations of digital interventions found that interventions targeting sexual risk and substance use were well received by GBMSM across demographic backgrounds (Meiksin et al., 2021; Xin et al., 2020). This approach could be replicated for Chemsex-related needs and has already shown promise in some countries in Europe and Asia (Terrence Higgince Trust, 2018). Specifically, a randomized controlled trial (RCT) conducted in Hong Kong demonstrated that a web-based intervention using a harm reduction approach can increase GBMSM's self-efficacy to abstain from sexual risk behaviors and Chemsex, while also promoting HIV testing uptake (Choi et al., 2023). Another method of addressing chemsex is cognitive-behavioral therapy (CBT), which has shown to be effective in individuals with substance use disorders (Hofmann et al., 2012). One of the primary strategies of CBT is cognitive restructuring, which aims to identify and modify negative beliefs and distorted thoughts related to substance use (Beck, 2016). Through collaboration between therapists and chemsex participants, these cognitive processes can be analyzed and adaptive responses to stressful situations can be developed. Tailoring therapeutic approaches to the specific motivations and needs people who use substances can enhance addiction recovery and minimize the risk of return to use. Although evidence on the effectiveness of CBT in this context is limited, preliminary results from a small RCT conducted in the UK (Banbury et al., 2023) have shown promising outcomes, including exploration of sexual needs and desires outside of Chemsex, as well as more positive perceptions of sexual and gender identity. Stigma reduction interventions, including community-led initiatives such as trainings on chemsex and harm reduction initiatives led by community-members for medical doctors that might face chemsex participants in their daily practice or other healthcare professionals; integrated and holistic models of care, combining sexual health with mental health and substance use counselling both in medical settings and at the community level; and PrEP programs in facilities already attended by GBMSM can allow individuals to access care discreetly and comfortably, thus reducing stigma-related stress (Aslan et al., 2024; Strong et al., 2022). Finally, some interventions, such as providing sterile tubes for inhaling, sterile needles and syringes for safer injections, condoms and lubricants, or packages that combine all of these items with high-protein products (such as nuts or protein bars), can significantly reduce the risks associated with chemsex, including the transmission of HIV and other STIs, physical harm, and nutritional deficiencies, while promoting safer sexual practices and overall well-being during chemsex sessions.

Our study is subject to a number of limitations. First, our recruitment relied heavily on NGOs, which may have biased our sample toward individuals who were already connected to support networks. This may have resulted in an overrepresentation of individuals with higher levels of health and emotional literacy. To mitigate this bias, we encouraged participants to spread information about our study within their chemsex social networks and among their sexual partners, with the goal of diversifying our sample. Second, interviews were conducted exclusively in Russian, thus potentially excluding individuals who primarily speak Kazakh. This constrain may have limited the range of perspectives captured in our study, which focused primarily on bilingual individuals rather than monolingual Kazakh speakers. At the same time, as the study participants were only recruited in Almaty, the results of the study can only represent GBMSM living in Almaty and may therefore differ from other regions of the country. Third, there was a risk of a potential power dynamic between the interviewer and participants that may have discouraged some individuals from sharing their most difficult experiences or fears. The interviewer, perceived as a privileged outsider from a

high-income country, may have faced skepticism and distrust from participants. However, this risk was mitigated because the interviewer shared common experiences of stigma, actively built trust with participants, and was seen as an in-group member rather than an outsider.

Another limitation of our study is the absence of detailed demographic data, such as participants' relationship status, education level, employment status or the frequency in which they participated in chemsex. This limits our ability to link certain chemsex experiences and motivations to specific sociodemographic characteristics. However, we decided against collecting detailed demographic information to respect the sensitivity of the topic and to protect the privacy of participants. The research team agreed that collecting such data could have caused discomfort or reluctance to participate, potentially affecting the study's response rate and participants' openness to discussing their experiences. However, this lack of comprehensive demographic information limits our ability to link their chemsex experiences and motivations to factors such as relationship or education level. Apart from this, our study sample was somewhat skewed towards younger participants since this demographic is more actively engaged in the services and outreach programs offered by the organizations facilitating our recruitment process. Further research should place specific focus on older age groups to gain a more comprehensive understanding of the entire GBMSM population in this region.

Finally, our study may have introduced some sort of selection bias by not disclosing financial recompensation until after the interview. Our approach to compensation also meant that we had to balance ethical concerns about participants' consent being driven by financial prospects against concerns about full transparency. Yet, we felt strongly that protecting participants from financial pressure was more important and ethically appropriate.

Despite the potential shortcomings, our study provides a platform for the voices of chemsex participants from Kazakhstan, a highly marginalized community. It offers valuable insights into their lived experiences, which helps to humanize their perspectives, challenge stereotypes, and promote empathy and understanding of the GBMSM sub-population.

At the end, listening to and valuing the perspectives of chemsex participants, will enable the development of more effective support services tailored to their needs, thereby contributing to improved health outcomes and well-being for this community.

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CRediT authorship contribution statement

Nadezhda Cherchenko: Writing – review & editing, Validation, Resources, Investigation, Formal analysis. **Kuanysh Altynbekov:** Supervision, Resources. **Nikolay Lunchenkov:** Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Denis Gryazev:** Writing – review & editing, Validation. **Elena German:** Writing – review & editing, Validation, Project administration, Funding acquisition. **Assel Terlikbayeva:** Writing – review & editing, Validation. **Sholpan Primbetova:** Writing – review & editing, Validation. **Uluk Batyrgaliev:** Writing – review & editing, Visualization. **Janina Isabel Steinert:** Writing – review & editing, Resources, Methodology, Formal analysis, Conceptualization.

Declaration of Competing 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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Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.drugalcdep.2024.112464.

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