PONTIFICAL CATHOLIC UNIVERSITY OF SÃO PAULO

PUC-SP

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Chemsex among gay men and other MSM: A behaviour-analytic investigation

DOCTORATE IN EXPERIMENTAL PSYCHOLOGY:

BEHAVIOUR ANALYSIS

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Thesis submitted to the Examination Committee of the Pontifical Catholic University of Sao Paulo (PUC-SP) as a partial requirement for the degree of DOCTOR in Experimental Psychology: Behaviour Analysis, under the supervision of Dr Paula Suzana Gioia.

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Chemsex among gay men and other MSM: A behaviour-analytic investigation

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Resumo

O chemsex, definido como o uso de substâncias psicoativas para intensificar o prazer sexual (metanfetamina, GHB, ecstasy, quetamina e cocaína), tem sido associado a infecções sexualmente transmissíveis (ISTs) e outros agravos entre gays e homens bissexuais, mas poucos estudos foram conduzidos sob a óptica da análise do comportamento no Brasil. Nesta tese, dois estudos foram realizados com os objetivos de (a) identificar possíveis variáveis antecedentes e consequentes do chemsex e (b) propor estratégias de comunicação e de acolhimento para a população envolvida. No Estudo 1, qualitativo, foram entrevistados sete homens gays/bissexuais adeptos ou ex-adeptos de chemsex (31–44 anos) por meio de roteiro semiestruturado. As entrevistas foram transcritas e analisadas segundo procedimentos de avaliação funcional indireta e pelos "5Ws" (quando, onde, por quê, com quem e o que aconteceu). Observaram-se contingências complexas envolvendo reforçadores positivos e negativos atuando de forma combinada, bem como eventos aversivos, influência de amigos e parceiros, histórico de uso de outras substâncias, múltiplas parcerias sexuais e práticas mediadas por aplicativos geossociais para encontros como principais variáveis antecedentes. No Estudo 2, qualiquantitativo, um questionário online com 37 perguntas derivadas dos achados do Estudo 1 foi aplicado a 62 homens gays/bissexuais (25–58 anos) recrutados em redes sociais e aplicativos geossociais e foi realizada uma avaliação indireta cotejada para verificar a intensidade das correlações encontradas. Os resultados sugerem que o chemsex é mantido por reforçadores positivos relacionados ao sexo (prazer sexual, ampliação do repertório sexual e prolongamento das relações sexuais) e por reforçadores sociais (uso coletivo e validação do grupo). Observaram-se: (a) associações estatisticamente significativas entre avaliação negativa do impacto geral do uso de substâncias e considerar parar ou reduzir o uso ($\chi^2 = 16{,}73$, $p = 0{,}00023$) e entre essa avaliação e a busca por auxílio especializado ($\chi^2 = 12{,}11$, $p = 0{,}0024$); (b) variáveis relacionadas a reforçamento negativo, como alívio de ansiedade e de isolamento; (c) formação de redes de trocas sociais em torno do chemsex; e (d) dificuldades dos participantes em apresentar comportamentos de autocontrole. Também foram constatadas múltiplas parcerias sexuais, relacionamentos não monogâmicos e relatos de ISTs — com destaque para sífilis —, sendo a cocaína a substância mais citada. Com base nesses achados, foi criada uma persona representativa da amostra e elaboradas orientações (guidelines) que recomendam audiência não punitiva; uso de linguagem contextualizada (incluindo gírias); reconhecimento de aspectos percebidos como positivos; atuação de equipe multidisciplinar; acesso flexível (e.g., anonimato e atendimento online); suporte contínuo mesmo em recaídas; apoio entre pares; e campanhas direcionadas em aplicativos geossociais para encontros e redes sociais. Como principais limitações, destacam-se o uso de amostra de conveniência (Estudo 1), a dependência de autorrelatos e a predominância de participantes da Região Sudeste. Recomenda-se que pesquisas futuras contemplem amostras mais diversas, enfoquem o autocontrole e utilizem medidas de observação direta.

Palavras-chave: chemsex, saúde pública, uso de substâncias psicoativas, gays e homens bissexuais, drogadição

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Abstract

Chemsex—defined as the use of psychoactive substances such as methamphetamine, GHB, ecstasy, ketamine and cocaine to intensify sexual pleasure—has been associated with sexually transmitted infections (STIs) and other health outcomes among gay and bisexual men. However, few studies have approached this phenomenon from a behaviour-analytic perspective in Brazil. This thesis presents two studies aimed at (a) identifying possible antecedent and consequent variables of chemsex and (b) proposing communication and support strategies for the affected population. In Study 1 (qualitative), seven gay and bisexual men (aged 31–44) who were current or former chemsex participants were interviewed using a semi-structured protocol. The interviews were transcribed and analysed through indirect functional assessment procedures and the 5W framework (when, where, why, with whom, and what happened). Findings revealed complex contingencies involving combined positive and negative reinforcement, aversive events, peer and partner influence, previous substance use history, multiple sexual partnerships, and practices mediated by geosocial networking apps as key antecedent variables. In Study 2 (mixed-methods), an online questionnaire with 37 items derived from Study 1 was administered to 62 gay and bisexual men (aged 25–58) recruited via social media and geosocial apps. A cross-checked indirect functional assessment was conducted to examine the strength of the identified correlations. Results indicate that chemsex is maintained by positive reinforcers related to sexual activity (sexual pleasure, expansion of sexual repertoire, and prolongation of sexual encounters) as well as social reinforcers (group use and social validation). Statistically significant associations were observed between a negative evaluation of the overall impact of substance use and both the intention to stop or reduce use ($\chi^2 = 16.73$, $p = 0.00023$) and the seeking of professional help ($\chi^2 = 12.11$, $p = 0.0024$). Additional findings included negatively reinforced variables (e.g., relief from anxiety and social isolation), the formation of social exchange networks around chemsex, and participants' difficulties in exhibiting self-control behaviours. Multiple sexual partnerships, non-monogamous relationships, and high rates of STIs—particularly syphilis—were also reported, with cocaine being the most frequently cited substance. Based on these findings, a representative persona of the sample was developed and a set of guidelines was proposed, recommending non-punitive environments, contextualised language (including slang), recognition of perceived positive aspects, multidisciplinary teams, flexible access (e.g., anonymity and online support), continuous support even in cases of relapse, peer support, and targeted outreach through geosocial apps and social media platforms. The main limitations of this research include the use of a convenience sample (Study 1), reliance on self-reported data, and the predominance of participants from the Southeast region of Brazil. Future research should aim to include more diverse samples, focus on self-control, and incorporate direct observation measures.

Keywords: chemsex, public health, psychoactive substance use, gay and bisexual men, drug addiction

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Chemsex among Gay Men and Other MSM:

A Behaviour-Analytic Investigation

Public health literature indicates that gay men, bisexual men and other men who have sex with men (MSM),[1] when compared with other population groups, tend to be disproportionately affected both by sexually transmitted infections (STIs) and HIV/AIDS (Chow et al., 2019; De Vries & Baral, 2017; Marcus et al., 2023; Pascom et al., 2022; Joint United Nations Programme on HIV/AIDS [UNAIDS], 2023a, 2023b), as well as by the use and abuse of psychoactive substances (Bourne & Weatherburn, 2017; Kelly et al., 2015; Paveltchuk & Borsa, 2020).

Specifically regarding HIV/AIDS, gay, bisexual and other MSM remain one of the five key populations—alongside sex workers, people who inject drugs (PWID), transgender people and people deprived of liberty—in which the pandemic is most severe. Among gay, bisexual and other MSM, the average prevalence of HIV reaches 7.7%, compared with 0.7% in the general adult population aged 15 to 49 years (UNAIDS, 2023a). Similarly, the higher prevalence of infections such as syphilis (Brazil, 2024) and Mpox (Pascom et al., 2022) also stands out compared with the general population, to cite just two further examples.

In this context, the importance of *chemsex* emerges—a term that originated in the mid-1990s from the words “chemical” and “sex” (Fernandes, 2020; Stuart, 2019). The term describes a phenomenon that is almost exclusive to gay and bisexual men (Poulios

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[1] Whenever possible, this thesis prefers the terminology “gay and bisexual men”, including because these were the groups directly investigated in the samples of studies 1 and 2, as will be seen later. However, the expression “gay, bisexual and other MSM” is retained in the descriptions of articles that originally use the term MSM but explicitly distinguish at least gay men; or simply “MSM” in articles that originally use only this terminology without distinguishing either gay or bisexual men.

et al., 2024; Stuart, 2019): the sexualised use of a specific set of drugs with the primary purpose of facilitating and enhancing sexual experiences (Brazil, 2022; Wong et al., 2020).

Typically, the substances used in chemsex include gamma-hydroxybutyrate (GHB), gamma-butyrolactone (GBL), mephedrone and methamphetamine. Cocaine and 3,4-methylenedioxymethamphetamine (MDMA) are also reported in certain contexts and, in an associated and less frequent way, alkyl nitrites ("poppers"/"rush") and agents for erectile dysfunction (Amundsen et al., 2022; Brazil, 2022; Curto et al., 2020; Degenhardt & Topp, 2003; Del Pozo-Herce et al., 2025; Poulios et al., 2024; Stuart, 2019; Wang et al., 2023; Wong et al., 2020).

From an epidemiological perspective, chemsex has constituted a key target of HIV/AIDS and STI prevention strategies because it is, among other factors, directly associated with the risk of contracting such infections (Amundsen et al., 2022; Brazil, 2022; De Vries & Baral, 2017; Drückler et al., 2018; Evers et al., 2020; Guimarães et al., 2016; Hoenigl et al., 2016; Pakianathan et al., 2018; Rosińska et al., 2018; São Paulo, 2023; Strathdee & Stockman, 2010). Moreover, the literature links it to other factors potentially harmful to the physical and psychological health of gay and bisexual men, such as dependence, intoxication, overdose, exposure to violence, depression, anxiety, psychotic disorders and hallucinations (Capodieci et al., 2025; Curto et al., 2020; Herrijgers et al., 2020; Prestage et al., 2018; Stardust et al., 2018; Strong et al., 2022).

Chemsex, Sexualised Drug Use and the Vulnerability of Gay and Bisexual Men

According to Wong et al. (2020), chemsex shows a high prevalence among gay and bisexual men worldwide. Coronado-Muñoz et al. (2020), based on a systematic review with meta-analysis of PubMed, Embase, Scopus, Cochrane and Web of Science databases, selected eight cross-sectional studies published between 2018 and 2023

covering 16 European countries (three of which were transnational), and estimated a prevalence of chemsex of 16% among MSM in Europe. In East and South Asia, Nevendorff et al. (2023) adopted a similar strategy by conducting a systematic review of the MEDLINE, EMBASE, Global Health, CINAHL, PsycINFO and Scopus databases, analysing 49 articles (18 of which were eligible for meta-analysis), to investigate the prevalence of sexualised drug use (SDU) among MSM—and estimated a combined prevalence of recent use at 13%. Further on, the differences between SDU and chemsex—the latter being a type of SDU—will be discussed. For now, however, it is worth noting that, due to such prevalence rates, chemsex should be understood within the context of the differentiated vulnerability of gay and bisexual men.

According to Schaurich (2004), the concept of vulnerability is relevant because it prevents behaviours that tend to be socially stigmatised from being seen as a "disease of the other", leading to exclusion. Ayres (2022) states that the concept emerged in 1992 in the context of HIV/AIDS research—specifically in the book *AIDS in the World*, organised by Mann, Tarantola and Thomas and published in the United States. Vulnerability, according to Ayres (2022), is analysed in three dimensions: individual, social and programmatic.

The *individual* dimension is represented by the individual themself, their biological characteristics, level of information, awareness and opportunity to change—or not—their behaviour or repertoire. The *social* dimension comprises the collective sphere in which this individual is situated and includes elements such as access to information, education and health services, as well as conditions of well-being and income. Finally, the *programmatic* dimension involves actions at the public, institutional and governmental levels, including the funding and development of preventive and educational measures (Ayres, 2022; Ayres et al., 2003; Schaurich et al., 2004).

It is important to note that the concept of vulnerability does not oppose that of *risk*—which, in epidemiology, is defined as "the probability that a disease develops in a person within a specified time interval" (Lash & Rothman, 2021, p. 154). In this sense, both concepts complement each other insofar as vulnerability indicates that the risk (of illness) does not respond solely to the actions of the individual; rather, there is a movement that is

> the result of a set of aspects . . . also collective and contextual, which lead to greater susceptibility to infection and illness and, inseparably, to greater or lesser availability of resources of all kinds to protect oneself from both. (Ayres et al., 2003, p. 123, our translation)

Barroso et al. (2024) note that the concept of vulnerability can be applied across multiple disciplinary fields, and this seems to be the case with chemsex. Indeed, Poulios et al. (2024) and Stuart (2019), in discussing the differences between chemsex and sexualised drug use (SDU)—sometimes referred to as sexualised substance use (Hegazi et al., 2017)—analyse a set of factors that explain why chemsex is understood as a phenomenon that is almost exclusive to gay and bisexual men and which, in our view, relates to their vulnerability to harm associated with substance abuse.

SDU refers, according to Poulios et al. (2024), to the use of any psychoactive substances during sexual activities, a phenomenon that is not new among gay men or in the general population (Poulios et al., 2024; Stuart, 2019). Chemsex, in turn, is a type of SDU characterised by the intentional use of a subset of substances before or during these activities by gay and bisexual men, "under a specific mindset" (Poulios et al., 2024, p. 1276).

Stuart (2019) helps clarify what this mindset entails. According to the author, the phenomenon of chemsex is defined by "some of the uniquenesses of gay sex and gay

culture" (p. 3), described as cultural factors that affect sexual pleasure among men. These include: social attitudes towards homosexuality, particularly those of repulsion, which may inhibit pleasure; the trauma and stigma caused by the HIV/AIDS pandemic, which disproportionately affects this population; the impact of geosocial dating apps on sexual and romantic experiences among gay men; and the notion that sex between men is, in some way, more "risky" or "dangerous".

In this context, Stuart (2019) argues that when chemsex is presented as a "problem", it is not initially represented by the substances themselves. Rather, these substances would be a tool to manage and mitigate the aversive effects of these "uniquenesses" (which are then regarded as the real problem), thereby enabling homosexual sexual relations to occur with freedom and disinhibition. Thus, the reason for using chemsex substances—which, alongside the substances themselves, also defines the phenomenon—is essentially the pursuit of pleasure, "which can often be difficult or challenging for gay men, many of whom struggle to achieve disinhibition from cultural obstacles that can make the enjoyment of gay sex, quite complicated" (pp. 3–4). As Poulios et al. (2024) note, not all SDU constitutes chemsex, even when the person engaging in SDU is a gay man: the characteristics outlined here must be present.

As previously mentioned, chemsex is associated with the risk of contracting HIV/AIDS and other STIs, as well as with factors potentially harmful to health—ranging from exposure to episodes of violence to psychotic disorders—which justifies the growing scientific interest in investigating it (Amundsen et al., 2022; Brazil, 2022; Capodieci et al., 2025; Curto et al., 2020; De Vries & Baral, 2017; Drückler et al., 2018; Evers et al., 2020; Guimarães et al., 2016; Herrijgers et al., 2020; Hoenigl et al., 2016; Pakianathan et al., 2018; Prestage et al., 2018; Rosińska et al., 2018; São Paulo, 2023; Stardust et al., 2018; Strathdee & Stockman, 2010; Strong et al., 2022).

Stuart (2019) acknowledges these potentially harmful consequences, which, in his analysis, have led public authorities, institutions and the gay community itself to mobilise and promote actions specifically aimed at chemsex.

Indeed, in Brazil, for example, the protocol for Pre-Exposure Prophylaxis (PrEP) already considers chemsex to be an indicator of increased HIV infection risk in the country (Brazil, 2022)—and there have been efforts to address the phenomenon from a public health perspective. Among these, the São Paulo State Department of Health, for instance, held its first web conference on chemsex in 2022 (São Paulo, 2022) and in 2023 published a manual for health professionals on chemsex and HIV/AIDS and STI prevention, as a result of a dedicated working group on the topic (São Paulo, 2023).

Chemsex and Behaviour Analysis

In behaviour analysis (BA), a science proposed by Skinner (1953), the harmful consequences associated with chemsex described in the literature can be understood as *punishments*, defined as the removal of stimuli that, in the individual's history, had previously been positively reinforced (negative punishment), or the presentation of stimuli that have acquired aversive functions (positive punishment). More than that, however, chemsex would be characterised, according to the discussion so far, as a behaviour *positively reinforced* primarily by sexual pleasure, but also *negatively reinforced*, insofar as, based on Stuart's (2019) discussion, it would be associated with escape and avoidance responses from aversive contingencies, which the author refers to as "uniquenesses".

Alongside other concepts, such as self-control (Skinner, 1953)—addressed later in this thesis—, the behaviour-analytic perspective therefore offers a theoretical and investigative framework capable of contributing to the understanding of chemsex and,

when necessary, to interventions aimed at those who, for example, seek help after experiencing punishments in different areas of their lives.

However, particularly in comparison with other countries, academic and scientific production on chemsex in Brazil still tends to be scarce. Hibbert et al. (2021), for instance, conducted a narrative systematic review to find articles published between 2010 and 2020 that addressed drug use in sexual contexts among MSM, women who have sex with women and trans people in the MEDLINE, PsycINFO, CINAHL Plus and Web of Science databases. Studies on drug use in sexual contexts covered 55 countries, of which 32 addressed chemsex among MSM. In Brazil, however, only one study—conducted with trans women—was found (Hibbert et al., 2021).

Madureira (2021), in turn, conducted an integrative review of scientific articles on chemsex, written in Portuguese and Spanish between 2015 and 2020, in the CAPES, PubMed and BVS Brasil databases. Only ten publications were found, and just one of them involved Brazil.

The still relatively limited academic and scientific production in the country, on the one hand, may delay the formulation of public policies that could lead to an effective approach to chemsex and, on the other, increase the vulnerability of gay and bisexual men to harm associated with substance abuse. In this context, the study by Fernandes (2020) is relevant to this thesis. It aimed to propose causes for the practice of chemsex and recommend solutions from a Brazilian legal-administrative perspective.

Fernandes (2020) selected a group of 20 men aged between 20 and 40, self-identified as homosexual or bisexual, living in Salvador, Recife and São Paulo, who reported having used one or more drugs before or during sex with other men in the 12 months prior to the study. These participants responded to a semi-structured interview with 26 questions related to chemsex (see Appendix C of Study 1). The aim of the

interviews was to obtain a preliminary understanding of the main aspects identified by the author in the foreign literature, such as the initiation of the practice, its presence and validation within the gay and bisexual male community, means of access to substances, locations where chemsex occurs, treatment received by participants when involved in police or judicial situations, seeking help, and health professionals' general understanding of the entire context, from the perspective of those interviewed.

Fernandes (2020) also combined the interviews with a strategy of minimally or non-structured direct observation of chemsex settings reported by participants (nightclubs, dating apps, videos and documentaries on the topic) with the purpose of analysing the sociocultural relations, behaviours, knowledge and practices associated with chemsex, as well as recruiting the interviewees themselves. Among the results presented, the author identified high adherence to cocaine use, prior experience with other substances, an association with unprotected anal sex (penis–anus) and reports of "temporary incapacity" caused by continuous substance use.

Despite Fernandes' (2020) contributions, the results do not allow us to identify which of the variables mapped may effectively exert control over chemsex behaviour as antecedents or as consequents from a behaviour-analytic perspective. Nevertheless, the study highlights the possibility of investigating such variables and their functions.

However, an additional difficulty identified in the literature review conducted for this thesis is that, in Brazil, behaviour-analytic production has not systematically focused on the specific investigation of chemsex, despite behaviour analysis having a long history of research on substance use in other contexts, notably through the use of indirect functional assessments (Avery, 2011; Crescenzo et al., 2018; Fazzino et al., 2019; Reichert et al., 2021), defined by Hanley (2012) as a set of methods that do not assess behaviour through direct observation and are based on reports or rating scales.

Indeed, behaviour-analytic studies specifically addressing chemsex were not found in the literature review for this thesis. This may also reflect, as Brum (2023) discusses, a behaviour-analytic gap with respect to the investigation of behaviours that, more broadly, involve sexual minorities, given the historically very small number of studies on this topic (Fazzano et al., 2020).

Objectives of the Thesis

The scientific literature consulted for this thesis has identified chemsex as a significant public health issue worldwide, with clear impacts on the prevention, diagnosis and treatment of STIs and HIV/AIDS and associated with other potential harms to the health of gay and bisexual men (Amundsen et al., 2022; Brazil, 2022; Capodieci et al., 2025; Curto et al., 2020; De Vries & Baral, 2017; Drückler et al., 2018; Evers et al., 2020; Fernandes, 2020; Guimarães et al., 2016; Hegazi et al., 2017; Herrijgers et al., 2020; Hoenigl et al., 2016; Jalil et al., 2022; Prestage et al., 2018; Rosińska et al., 2018; São Paulo, 2023; Stardust et al., 2018; Strathdee & Stockman, 2010; Strong et al., 2022).

Although behaviour analysis has already conducted indirect functional assessments of substance use in other contexts (Avery et al., 2011; Crescenzo et al., 2018; Fazzino et al., 2019), there remains a gap in terms of both investigations and interventions targeting chemsex within this science.

In light of this, two studies are proposed in this thesis, with the following main objectives:

1. To identify and describe possible antecedent and consequent control variables of chemsex from a behaviour-analytic perspective.
2. To systematise guidelines for the development of communication and support actions based on behaviour analysis, aimed at gay and bisexual men who engage in chemsex, with the aim of contributing to the dissemination, expansion and facilitation of access to interventions.

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Study 1 — Chemsex among Gay and Bisexual Men: Functional Assessment of In-Depth Interviews

Public health literature indicates that gay and bisexual men tend to be disproportionately affected by sexually transmitted infections (STIs), both bacterial and viral, when compared with other population groups (Chow et al., 2019; De Vries & Baral, 2017; Marcus et al., 2023).

Chow et al. (2019), for example, used public data from seven countries—Australia, Czechia, Denmark, Norway, Sweden, the United Kingdom and the United States—to conduct an epidemiological study on STIs among MSM at risk of HIV infection. Although they discussed the challenge of producing annual STI estimates among gay, bisexual and other MSM due to the insufficient availability of epidemiological surveillance data from different countries, the authors highlighted the increase in syphilis in this population. In the United Kingdom, for instance, the number of syphilis cases rose from fewer than 1 MSM per 100,000 men in the 1990s to around 16 MSM cases per 100,000 men in the 2010s—an increase of approximately 1,500%.

Syphilis has become a major public health challenge in Brazil and worldwide. According to the World Health Organization (WHO), the number of new infections among individuals aged 15 to 49 increased from 7.1 million (5.1 to 9.1 million) in 2020 to 8 million (5.6 to 10.4 million) in 2022. The Americas, with 3.37 million cases in 2022, had the highest absolute incidence globally, accounting for 42% of all new cases (World Health Organization [WHO], 2024). According to the WHO, this increase is multifactorial, including lack of awareness about the infection, inequality in access to health services, difficulties in early diagnosis and treatment and the stigma associated with STIs, which may delay seeking medical care (WHO, 2024).

In Brazil, this situation prompted the publication of a special epidemiological bulletin in October 2024 focused exclusively on this STI. According to the bulletin, between 2010 and 30 June 2024, Brazil recorded more than 1.5 million cases of acquired syphilis, with a steadily increasing detection rate throughout almost the entire historical series, reaching 113.8 cases per 100,000 inhabitants in 2023. This was the highest rate in the series—and 60.9% of cases in 2023 were recorded among men (Brazil, 2024).

To cite another STI, in a study describing the epidemiological and clinical characteristics of Mpox in Brazil, Pascom et al. (2022) reported that between the identification of the first case (recorded on 7 June 2022 in the State of São Paulo) and the 39th epidemiological week (ending on 1 October), 7,992 cases of Mpox had been confirmed in Brazil and 175 were classified as probable. Of the total 8,167 cases, 91.8% occurred in individuals assigned male at birth—and among the cases in which sexual orientation was self-reported, in 64.6% of them (n = 2,566) the individual identified as homosexual. These characteristics coincided with the epidemiological profile of other countries, such as Mexico and Nigeria, amplifying stigma (Mungmunpuntipantip & Wiwanitkit, 2023; Pascom et al., 2022; Smith et al., 2023).

Gay and bisexual men also tend to be disproportionately affected by the use and abuse of psychoactive substances (Bourne & Weatherburn, 2017; Kelly et al., 2015; Paveltchuk & Borsa, 2020).

Paveltchuk and Borsa (2020), for example, conducted a narrative review focused on the phenomenon of *minority stress* (MS), defined as an intersectional set of additional stressors beyond those experienced by any other groups (Meyer, 2003). According to the authors, by predisposing individuals to social harms such as discrimination and rejection, MS results in the impairment of different areas of an individual's life—professional, family, social and health—and in conditions such as high levels of depression, suicidal

ideation and *substance abuse*, all positively associated with a higher recurrence of family rejection.

The relationship between homophobic experiences and substance abuse had already been described by Kelly et al. (2015), who administered an anonymous questionnaire on age, gender and sexual identity to 161 attendees aged 13 to 24 of the Queeriosity festival, held annually in Brisbane, Australia, and aimed at gay, lesbian, bisexual and transgender (LGBT) youth. Participants were also asked, in the questionnaire, "Has experiencing homophobia and/or heterosexism had an impact on your drinking or drug use?" and completed the instruments The Alcohol Use Disorders Identification Test-Consumption, Fagerström Test for Nicotine Dependence and Drug Check Assessment Tool to measure degrees of use.

The results showed that: (a) alcohol and other drug use was common in the sample, with prevalence rates higher than those in the general Australian youth population—as measured by the 2010 National Drug Strategy Household Survey, applied nationwide; (b) alcohol and other drug use among those under 18 was markedly higher than in the general youth population; (c) most participants had an incorrect perception that alcohol and other drug use was the same among heterosexual and LGBT populations; and (d) those who reported that homophobia impacted their alcohol and drug use were significantly more likely to use substances than those who did not indicate such an impact (Kelly et al., 2015).

Similarly, a narrative review conducted by Bourne and Weatherburn (2017) on substance abuse found a tendency for higher drug use among gay and bisexual men compared with heterosexual men. Among the data mapped by the authors based on statistics from the report *Drug Misuse: Findings from the 2013/14 Crime Survey for England and Wales* (United Kingdom, 2014), they found that gay and bisexual men in

England and Wales were three times more likely than heterosexual men to have used an illicit substance in the 12 months prior to the survey, and that this likelihood increased to seven times when considering only stimulant drugs, such as cocaine and ecstasy (Bourne & Weatherburn, 2017).

Furthermore, aggregated data from 2001 to 2008 from the Massachusetts Behavioural Risk Factor Surveillance System in the United States showed that 23.5% of MSM had used illicit drugs in the 30 days prior to data collection, compared with 10.1% of heterosexual men (Bourne & Weatherburn, 2017; Conron et al., 2010). Finally, in Australia, data collected in 2013 showed high rates of cannabis, ecstasy and methamphetamine use among gay and bisexual men compared with heterosexual men—and methamphetamine use in particular was nearly four times higher (Bourne & Weatherburn, 2017; Roxburgh et al., 2016).

Among the different patterns of psychoactive substance use, chemsex has emerged as a subject of interest in scientific research and public health policy because of the impact it has had on the health of gay and bisexual men—notably due to its association with STI prevalence in this population (Amundsen et al., 2022; Brazil, 2022; Degenhardt & Topp, 2003; Hoenigl et al., 2016; Maxwell et al., 2019; Rosińska et al., 2018; São Paulo, 2023; Wong et al., 2020).

Chemsex, Sexually Transmitted Infections and Health Harms

Wong et al. (2020) define chemsex as the use of substances in sexualised contexts with the primary purpose of facilitating sexual intercourse,[2] prolonging its duration, and enhancing both sexual performance and the sexual experience itself. In Brazil, the Ministry of Health, echoing Wong et al.'s (2020) definition, conceptualises chemsex as "sexual practice under the influence of psychoactive drugs . . . with the purpose of improving or facilitating sexual experiences" (Brazil, 2022, p. 31), and cites methamphetamines, GHB, MDMA (also known as "ecstasy" or *bala*[3]) and cocaine as representative drugs.

According to Hegazi et al. (2017), chemsex is associated with a range of sexual practices already linked to a higher prevalence of HIV, acute bacterial STIs, rectal STIs, and hepatitis C, such as a higher number of sexual partners, transactional sex, group sex, fisting, sharing of sex toys, use of (other) injected drugs, higher alcohol consumption, the use of geosocial networking apps for sexual encounters and bareback sex (condomless anal intercourse).

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[2] Although there is a conceptual difference, already discussed, between sexualised drug use (SDU) and chemsex, the latter being a type of SDU, we chose to use the terms "chemsex" and "substance use in sexual contexts" (and related expressions) interchangeably in studies 1 and 2. This choice allows us, on the one hand, to emphasise substances associated with chemsex in the specialised literature, such as methamphetamine and GHB, and, on the other hand, to refer to other substances that are not part of chemsex by definition but appear related to it in the results, such as cannabis and alcohol.

[3] *Bala* is an informal Brazilian term for a small, sweet, flavoured candy, equivalent to what is commonly referred to as "candy" or "sweet" in English. In the context of substance use, however, it is a common slang term referring to MDMA/ecstasy.

Studies such as that of Pakianathan et al. (2018), who conducted a retrospective review of cases involving all gay, bisexual and other MSM seen at two sexual health clinics in London between 2014 and 2015, have documented this association between chemsex and STI prevalence. The authors identified chemsex status in 1,734 of the 1,840 patients seen at the clinics (94.2%) and 27.1% of patients (n = 463) reported current recreational drug use at the time of consultation, of whom 286 (16.5%) reported chemsex. They observed that patients who reported engaging in chemsex had a higher probability of being recently diagnosed with HIV infection, acute bacterial STIs, anorectal STIs and hepatitis C.

Rosińska et al. (2018), in turn, conducted a biobehavioural cross-sectional study in 13 European cities—Brussels (Belgium), Sofia (Bulgaria), Hamburg (Germany), Verona (Italy), Vilnius (Lithuania), Warsaw (Poland), Lisbon (Portugal), Bucharest (Romania), Bratislava (Slovakia), Ljubljana (Slovenia), Barcelona (Spain), Stockholm (Sweden) and Brighton (United Kingdom)—in order to investigate the prevalence of drug use in sexual contexts associated with HIV. Using time-location sampling (TLS) and respondent-driven sampling (RDS) methodologies, the authors recruited 4,266 MSM who had reported sexual intercourse with another man within six months prior to the study, completed a behavioural questionnaire and provided a biological sample (oral fluid or blood) for HIV testing. Overall, 30% of participants reported drug use (n = 1,261). Among those who did, HIV was diagnosed more frequently than among those who did not—10.5% versus 3.9%.

Evers et al. (2020), who conducted a study across nine STI clinics in the Netherlands to investigate associations between chemsex engagement and MSM with a history of overseas travel, found that of 785 participants invited to complete an online questionnaire between 2017 and 2018—of whom 405 completed it in full—42.7%

reported engaging in chemsex and 60.2% in condomless anal sex. The most commonly reported substances were MDMA (ecstasy or “molly”; 36.3%), GHB/GBL (33.1%), ketamine (18%), methamphetamine (referred to as “speed”; 12.8%) and cocaine (9.9%). A recent STI diagnosis, obtained through biomedical testing, was identified in 22.5% of the sample: chlamydia, 10.1%; gonorrhoea, 13.8%; infectious syphilis, 3%; and HIV, 1%.

In addition, discussions raised by Herrijgers et al. (2020), Stardust et al. (2018) and Strong et al. (2022) point out that chemsex is also associated with other potentially harmful health outcomes among gay and bisexual men, such as dependence, intoxication, overdose, psychosis, dehydration, hyperthermia, exposure to violence, temporary inability to consent to sexual activity and drug-induced injuries.

Brazil appears to mirror other countries in both the prevalence of chemsex among gay and bisexual men and its association with higher-risk variables for HIV infection and other STIs. In this regard, the study by Sousa et al. (2020) is worth noting. The authors conducted a multicentre online survey on chemsex among MSM in Portugal and Brazil. The survey, led by the Institute of Hygiene and Tropical Medicine, NOVA University Lisbon (IHMT-NOVA) and the University of São Paulo (USP), was conducted in April 2020 and used respondent-driven sampling adapted to the internet to investigate factors associated with chemsex among MSM during the period of social isolation imposed by the COVID-19 pandemic. A total of 2,631 participants from both countries were recruited through social networks and MSM-focused dating apps—1,651 (69.9%) from Brazil and 710 (30.1%) from Portugal. Of this total, 920 (38.9%) reported engaging in chemsex during the period of distancing and isolation, of whom 95% did so with casual partners. The results indicated the following factors as associated with chemsex during isolation: (a) living in Brazil; (b) not being in social isolation; (c) engaging in casual sex

during social distancing; (d) engaging in group sex; (e) not having presented symptoms of COVID-19; (f) not living with a partner; and (g) being on PrEP.

Jalil et al. (2022), in turn, conducted an online survey with 3,924 individuals from the Brazilian cities of Manaus, Salvador, Brasília, Rio de Janeiro and Porto Alegre to estimate the prevalence of drug use in sexual contexts among sexual and gender minorities through the question: "In the last six months, have you used any illicit drug before/during sex?". Of the 3,924 participants, 3,553 were MSM, 280 were trans women, and 91 were non-binary individuals. The data indicated that trans women were 2.44 times more likely to engage in drug use in sexual contexts than MSM but also showed a high overall prevalence of 28.8% across the three groups combined. Other characteristics associated with drug use in sexual contexts included: (a) PrEP use; (b) living in the South or Southeast regions; (c) being young, aged 18–24; (d) being white; (e) having high income; (f) excessive alcohol use; (g) having more than five sexual partners; (h) condomless anal sex; (i) self-reported STI; and (j) higher self-perceived risk of acquiring HIV.

However, it is not clear whether individuals recognise themselves as "chemsex participants" or whether such self-identification, or the lack thereof, has an impact on intervention strategies, campaign performance, or behaviour regarding their own drug use or seeking treatment. In this regard, a relevant investigation is the work of Horwitz et al. (2019), who studied 78 young adults on two occasions, 20 months apart, to assess whether implicit and explicit self-identification with drug use would predict changes in drug use over time (frequency, recency and polydrug use).

The results showed that implicit and explicit self-identification with drug use was stronger among participants who used drugs more frequently, more recently, and engaged in polydrug use, particularly illicit drugs. However, the authors state that self-

identification does not appear to predict future drug use behaviour nor is it a result of previous drug use (Horwitz et al., 2019).

Another study worth mentioning is that of Chen et al. (2021), who examined implicit and explicit self-identification as a "drug user" and its associations with use and abstinence behaviours among two groups—individuals who used heroin and those who used methamphetamine, all male—to assess whether self-identifying as a drug user could put an individual at risk of initiating, maintaining, or relapsing into substance use. The study included 40 participants with a history of heroin use and 35 with a history of methamphetamine use, with abstinence periods ranging from 3.60 to 25.13 months—confirmed by periodic urine tests—in a rehabilitation facility in Zhejiang Province, China. Implicit self-identification was assessed using the Single Category Implicit Association Test (SC-IAT; Karpinski & Steinman, 2006).

The results of Chen et al. (2021) showed stronger implicit self-identification as a "drug user" among those who had used heroin. The group that had used methamphetamine showed evidence of associating "drug user" more strongly with "other" than with "self" (Chen et al., 2021). The authors concluded that it would be more appropriate to address self-identification according to the substance used rather than from a predominantly collective perspective (Chen et al., 2021).

According to Souto et al. (2019), this (self-)identification is a crucial dimension of substance use. The authors conducted a qualitative study with 16 users of a Psychosocial Care Centre—Alcohol and Other Drugs (CAPS AD)—in a municipality in central Rio Grande do Sul over five group sessions to discuss the self-image (self-perception) of people who use substances. They highlight two main conceptions through which the phenomenon is socially addressed: (a) the legal-moral conception, which tends to view psychotropic drugs—particularly illegal ones—as a social evil and to blame the

user; and (b) the biomedical conception, which views the phenomenon solely as a disease, disregarding its multidimensionality.

Between these conceptions, according to the authors, emerges the classification of the user either as a delinquent or as a chronic patient, without considering the complexity of the phenomenon. This leads the individual to experience situations—which, in behaviour analysis, we would call contingencies—marked by exclusion, stigmatisation, disqualification, reprimand, embarrassment, humiliation, and aggression (Souto et al., 2019). Furthermore, these classifications can result in stereotypes and terminologies that see the person as "embodied by the drug, timelessly and outside of context, and that the very classification 'drug user' excludes the person as a whole and excludes us from that relation." (Souto et al., 2019, p. 2, our translation).

These observations appear to highlight the relevance of bringing the concept of *vulnerability* into the discussion of substance use in general and chemsex in particular, since, according to Schaurich (2004), this concept prevents behaviours that tend to be stigmatised from being seen merely as a "disease of the other"—and, as understood here, vulnerability to substance abuse in chemsex and the potential harms arising from it. In this regard, Ayres (2022) states that vulnerability is analysed under three dimensions: individual, which includes a person's particular characteristics; social, composed of the collective sphere in which the person is situated; and programmatic, which includes public, institutional and preventive actions (Ayres, 2022; Ayres et al., 2003; Schaurich, 2004).

The literature contains examples of interventions aimed at overcoming the dualism between the legal-moral and biomedical conceptions (Souto et al., 2019)—and these may align with the concept of vulnerability. One example worth highlighting is the article by Stardust et al. (2018), which reports the successful experience of community

involvement and acceptance of chemsex intervention services targeted at gay and bisexual men by the organisation ACON (formerly the AIDS Council of New South Wales) in Sydney, Australia.

Among the strategies adopted by ACON are a focus on harm reduction; direct support for individuals seeking to control or reduce substance use; peer education initiatives; partnerships with research institutions to better understand chemsex; and interventions that move away from the criminal sphere (Stardust et al., 2018)—or, in Souto et al.'s (2019) terms, the legal-moral approach. These elements may indicate important pathways for a successful, non-stigmatising, comprehensive approach that uses vulnerability as a paradigm for chemsex participants.

This becomes even more relevant when considering the findings of Souza et al. (2023), who conducted an integrative review to analyse scientific articles published between 2015 and 2022 on aspects of chemsex among MSM, aiming to examine what has been produced on the topic since the second half of the last decade. After retrieving 102 articles from the CAPES Periodicals Portal, the authors concluded that public sexual health policies for gay, bisexual and other MSM do not appear to be prepared to address the demands of chemsex, notably because they continue to treat HIV services and the psychosocial care network as separate systems. The authors recommend the following public policy measures: (a) consider the holistic experience of chemsex; (b) promote harm reduction instead of prohibition; (c) provide access to health education and information; (d) implement online interventions and active outreach in chemsex venues; (e) raise awareness to combat the stigma surrounding chemsex; and (f) in Brazil, bring the Psychosocial Care Network (RAPS) closer to HIV and STI Testing and Counselling Centres (CTA).

In this context, the study by Fernandes (2020) is particularly relevant in Brazil. Conducted within the Postgraduate Program in Law at the Federal University of Bahia (UFBA), it aimed to propose causes for the practice of chemsex and recommend solutions from a Brazilian legal-administrative perspective. Fernandes (2020) selected a group of 20 men aged 20 to 40, self-identified as homosexual or bisexual and living in Salvador, Recife and São Paulo, who reported using one or more substances before or during sex with other men in the 12 months prior to the study. They responded to a semi-structured interview with approximately 30 questions related to chemsex. The aim of the interviews, which were combined with a minimally or non-structured direct observation strategy of chemsex settings identified in the participants' reports—such as nightclubs and dating apps —, was to obtain a preliminary understanding of the main aspects identified by the author in the foreign literature, such as initiation of the practice, presence and validation within the gay and bisexual male community, means of access to substances, locations where chemsex occurs, treatment received by participants when involved in police or judicial situations, help-seeking behaviour and health professionals' overall understanding of the context presented, from the interviewees' perspective (Fernandes, 2020).

Fernandes' (2020) method was structured as a triangulation that included: (a) the cataloguing of concrete information, obtained both from empirical observation data and interviewee narratives; (b) dialogue with the scientific literature on chemsex, based on the author's literature review; and (c) an analysis of the broader context of the studied scenario, which considered possible causes and solutions, the structure of the Brazilian healthcare system and the theoretical fields of biopolitics and intervention bioethics.

Among the main findings were: (a) almost universal adherence to cocaine among participants, related to its relatively low price, more controllable dosage and easier access

through drug dealers; (b) widespread prior experience with recreational use of other drugs, particularly ecstasy and amphetamines in general; and (c) the statement that condomless anal sex, which chemsex is typically associated with, was more pleasurable due to increased physical sensations, stimulation, intimacy and the contact of semen with the anus. For this reason, this study was selected to form the first phase of the present research, as will be discussed later, with the aim of providing an initial basis for developing a semi-structured interview guide.

Contributions of Behaviour Analysis to Substance Use Research

The use of psychoactive substances and their particular effects on other behaviours have a long history of investigation in studies based on, or influenced by, behaviour analysis (BA). Reichert et al. (2021), for example, present what they call a consolidated model of applied functional analysis (Table 1) and state that such analyses should necessarily address five key questions—the "5W": when, where, why, with whom and what happened after the substance use.

Table 1

Model of Applied Functional Analysis according to Reichert et al. (2021)

Sd (Discriminative stimulus)	R (Response)	Sc (Consequent stimuli)
Frequently visiting friends who habitually use cocaine.	Giving in to peer pressure and agreeing to use cocaine with friends.	Relief from peer pressure and/or production of sensations of well-being, grandiosity, etc.
Experiencing a series of recurring personal problems that produce feelings of discomfort, stress, or anxiety.	Consuming alcohol and/or smoking cigarettes (tobacco).	Sensation of relaxation, detachment from problems, reduction of anxiety, etc.
Being at a music festival.	Using ecstasy.	Disinhibition, euphoria, closeness to others.

Note. Adapted from Reichert et al. (2021, p. 88).

With regard to BA-based interventions, in a literature review on studies addressing crack use, Avery (2011) mentions several behaviour-analytic techniques

(referred to by the author as “tools”): functional analysis, delayed discounting, stages of readiness, motivation for change, positive and negative reinforcement, the identification of alternative behaviours to substance use (drug-taking) and contingency management (CM). The latter, according to McPherson et al. (2022), seeks to modify drug use by providing positive and tangible reinforcers (e.g., prizes, vouchers, or monetary incentives) in exchange for evidence of the individual’s performance of target behaviours (e.g., attendance at treatment sessions, medication adherence) and abstinence, such as negative urine tests for the substance of interest.

In Brazil, Silva et al. (2022) conducted a systematic review of CM applied to alcohol use disorder through searches in the Cochrane Library, MEDLINE Complete, PsycINFO and PubMed databases. Eight clinical trials were included in the review, and the authors concluded that CM was effective in promoting sustained abstinence in seven of them. The technique also demonstrated favourable results regarding treatment retention and follow-up evaluation.

Alongside another technique—community reinforcement approach (CRA)—CM is described by Fazzino et al. (2019) as a reinforcement-based intervention. CRT, according to the authors, also employs positive reinforcement, established through strategies focused on building motivation, improving coping with withdrawal effects, involving the family in recovery and increasing positive reinforcement provided by the environment. Monetary reinforcers are often used at the beginning of CRT to compensate for the reinforcement deficit caused by substance withdrawal and are gradually removed as treatment progresses and the individual begins to be reinforced in other areas of life (Fazzino et al., 2019).

The combination of CRT and CM was found to be effective in the treatment of cocaine and amphetamine use disorders in adults, both in the short and long term, in a

systematic review and meta-analysis conducted by Crescenzo et al. (2018). The review included 12 different types of interventions and 50 randomised clinical trials from the Cochrane Drugs and Alcohol Group Specialised Register, PubMed, Embase, CINAHL, ISI Web of Science and PsycINFO databases. The authors compared different psychosocial interventions based on efficacy (the proportion of individuals in abstinence, assessed through urine tests) and acceptability (the proportion of individuals who discontinued treatment) at the end of the treatments, as well as short-term effects (12 weeks) and long-term effects (measured by the longest follow-up duration in each study).

Self-Control

Across all these interventions, the need for the active participation and engagement of the individual who uses substances stands out, which brings us to the concept of self-control as proposed by Skinner (1953), according to whom self-control occurs when an individual manipulates variables of which their own behaviour is a function. This concept therefore differs from those of other psychological approaches, which tend to understand "self-control" as an internal and/or innate characteristic of the individual.

For Skinner (1953), self-control originates from operant contingencies in which a class of responses produces at least two conflicting consequences: one reinforcing and immediate, and the other aversive and delayed, resulting from a punitive contingency. The response that produces the conflict becomes a *controlled response*, and self-control is defined by the emission of a second, *controlling response*, which results in the manipulation of variables that make the controlled response less likely, thereby reducing the probability that the individual will be punished. It is worth noting, however, that Skinner (1953) describes how the effects of a previously experienced punitive contingency, of which the controlled response is a part, "approach" that same response

in such a way that, in the presence of an antecedent variable correlated with the controlled response, the individual *already* experiences the effects of punishment—such as emotional responses and conditioned aversive control—increasing the likelihood of emitting the controlling response.

However, despite all these contributions of behaviour analysis to the study of substance use, no typically behaviour-analytic studies were found that specifically investigated chemsex, its impact on the sexual, physical and/or psychological health of gay and bisexual men, or the self-control of current or former participants according to the Skinnerian concept (Skinner, 1953). These gaps may be related to another, described by Brum (2023) in the field of BA research: the lack of studies on sexual behaviour—particularly those involving minorities such as the gay and bisexual population. As the author notes:

> Although Skinner addressed issues related to sexuality at different points in his work . . . there has been little progress on this topic in studies approaching sexual behaviour from a behaviour-analytic perspective. The absence of studies on human sexual behaviour from the standpoint of behaviour analysis highlights the need for a better understanding of contingencies . . . so that it becomes possible to predict and plan healthier and more beneficial behaviours for society. (Brum, 2023, p. 25, our translation)

Objectives

Although behaviour analysis has a long history of contributing to the study and treatment of substance use and abuse (Avery, 2011; Fazzino et al., 2019; Reichert et al., 2021), it does not appear to have addressed the phenomenon of chemsex. Therefore, in order to contribute to the understanding of this phenomenon from a behaviour-analytic perspective, this study proposed, based on semi-structured interviews with individuals

who had experienced chemsex: (a) to identify and describe possible antecedent and consequent controlling variables of chemsex from a behaviour-analytic perspective; and (b) to present initial elements of a behaviour-analysis-based communication and support approach.

Method

Participants

Seven Brazilian individuals over 18 years of age participated in the study. They were selected from a convenience sample, were assigned male at birth, identified as male or non-binary, and reported having engaged in penis–anus and/or penis–mouth intercourse with other men while under the influence of substances on at least one occasion. Exclusion criteria included individuals who reported differently regarding biological sex, gender identity, or substance use in a sexual context. Participants were recruited in September 2024 through phone calls, text messages and audio messages on the WhatsApp application. Invitations were extended to individuals whose characteristics were known to the researcher, those referred by other participants, or those recommended by a key informant with contacts among chemsex participants. Participant data are presented in tables 2 and 3.

Table 2

Participants: Age, Ethnicity, Sexual Orientation, Gender and Residence

Participant	Age	Race/Ethnicity	Sexual Orientation	Gender	Municipality
P1	33	Black	Gay	Male	Santo André, SP
P2	38	White	Gay	Male	São Bernardo do Campo, SP
P3	44	ND	Gay	Male	Santo André, SP
P4	42	White	Gay	Male	São Paulo, SP
P5	39	White	Bisexual	Male	Ciudad del Este, PY
P6	31	White	Gay	Male	São Paulo, SP
P7	37	White	Gay	Non-binary	Rio de Janeiro, RJ

Note. ND = not declared in the interview. PY = Paraguay.

Table 3

Participants: Occupation, Education and Approximate Household Income

Participant	Occupation	Education	Approx. household income
P1	Hairdresser	Completed secondary education	R$ 12,000
P2	Hotel attendant	Incomplete tertiary education	R$ 5,500
P3	Human resources manager, studying physical Education	Postgraduate degree; second undergraduate degree (in progress)	R$ 9,000
P4	Occupational safety instructor	ND	R$ 3,500
P5	Lawyer, studying medicine	Completed tertiary education; second undergraduate degree (in progress)	R$ 5,000
P6	ND	Completed tertiary education	ND
P7	Tourism worker	Postgraduate degree (in progress)	R$ 4,000

Note. ND = not declared in the interview. At the time of the interview, P6 did not have a source of income and was living in public housing due to consequences of substance abuse, according to the participant's report.

The seven selected participants digitally signed an Informed Consent Form (Appendix A). The study was approved by the Research Ethics Committee of the Pontifical Catholic University of Sao Paulo (PUC-SP), Certificate of Ethical Review Submission (CAAE) no. 83532924.1.0000.5482, Opinion no. 7.288.038.

Procedure

Phase 1 — Theoretical Functional Assessment

The work by Fernandes (2020) was accessed via the Kindle® app (Amazon). From the 20 interviews originally conducted by the author, excerpts from eight were selected and copied—within the copying limit allowed by the app—and those deemed most relevant by the researcher were chosen. The base script of Fernandes' interviews (2020) is presented in Appendix C.

The excerpts were then classified into a Microsoft Excel spreadsheet with five columns, according to the 5W model by Reichert et al. (2021)—when, where, why, with whom and what happened after substance use. The spreadsheet was subsequently adapted into four columns: (a) *Interviews*: identification of the interview in Fernandes' (2020)

work; (b) *Antecedent variables*: possible variables related to the availability of reinforcers resulting from substance use in a sexual context (chemsex), including probable discriminative or aversive stimuli, conditional stimuli and motivating operations; (c) *Responses*: the substance use itself, highlighting the context, type of sexual interaction (individual or group) and substances used; and (d) *Consequent variables*: possible positive or negative reinforcers obtained contingently upon substance use. Aversive consequences were also investigated, a category grouping consequent variables related to punishment.

A theoretical indirect functional assessment of the excerpts from the eight interviews was then conducted, and the results are presented in tables 4 and 5. According to Hanley (2012), indirect functional assessment refers to methods that do not evaluate behaviour through direct observation and are instead based on the report of an informant, such as interviews, questionnaires and scales. Methods with these characteristics are among the most recurrent in chemsex research, as seen in the studies by Sousa et al. (2020) and Jalil et al. (2022), as well as in the work of Del Pozo-Herce et al. (2025), who proposed the construction and validation of the Chem-Sex Inventory Scale (CSI), a tool for assessing the psychological health risks of chemsex among gay and bisexual men.

Table 4

Theoretical Functional Assessment Extracted from the Responses of 8 Participants in Fernandes (2020): Antecedent Variables and Responses

Antecedent Variables	Responses
• First experimentation often occurred during youth (18–25 years old) at public parties • Substance use at parties and nightclubs • Continuation in more intimate contexts and private settings (homes, hotels) • Frequently with sexual partners or close friends in "small" (selected) groups • Social influence (friends, partners) • Usually in environments where sexual activity occurs • Common use in organised sexual encounters • Desire for belonging to specific groups • Usually at night	• Use of cocaine, GHB, ecstasy and poppers • Generally social use, including during group sexual encounters • Use during sex with multiple partners • Use with close friends • Prolonged sexual intercourse • Practice of anal and oral sex
Excerpts: *"The first time I used was at a club, then I continued in private parties"* (Interview 1) *"We always organised parties at home with friends we already knew"* (Interview 4) *"Things started at the nightclubs, but everything really happened at the after-parties"* (Interview 8) *"I started using at university, at parties, and later in saunas"* (Interview 2) *"At first it was at nightclubs, but then it became more intimate, in closed meetings"* (Interview 6) *"I only started using because all my friends did"* (Interview 5) *"At private parties, someone always brought something, and I ended up joining in"* (Interview 8)	**Excerpts:** *"We snorted cocaine and took G to keep going all night"* (Interview 1) *"Poppers were a must; I used them whenever I was having sex"* (Interview 4) *"We took ecstasy and had sex until sunrise"* (Interview 7) *"I snorted cocaine to last longer and enjoy sex more"* (Interview 3) *"Poppers helped with penetration; we always used them"* (Interview 8) *"Cocaine was a constant; whenever there was a party, it was there"* (Interview 2) *"We used G and ecstasy together to increase connection and energy"* (Interview 6)

Table 5

Theoretical Functional Assessment Extracted from the Responses of 8 Participants in Fernandes (2020): Consequent Variables

Positive Reinforcers	Negative Reinforcers	Aversive Consequences
• Intensification of sexual pleasure • Stronger connection with partners • Sense of power • Sense of social belonging • Increased self-confidence • "Easier" sexual intercourse (including penetration)	• Reduction of social anxiety • Avoidance of emotional problems • Avoidance of social problems • Relief from stress and performance-related anxiety • Reduction of inhibitions	• Overdoses • Social isolation • Impacts on professional life • Impacts on personal life • Emotional and psychological dependence on substances • Difficulty stopping • Fear of being discovered • Decline in physical and psychological health
Excerpts: *"The pleasure was much more intense; it felt like I was in another dimension"* (Interview 1) *"I felt more powerful, as if nothing could stop me"* (Interview 4) *"Sex was much better; I felt every touch more intensely"* (Interview 5) *"I connected more with my partners; it was as if we were one"* (Interview 7) *"My confidence increased; I was able to let go more"* (Interview 8)	**Excerpts:** *"The anxiety disappeared; I felt calmer to enjoy it"* (Interview 5) *"It was an escape, so I wouldn't think about daily problems"* (Interview 7) *"The anxiety about performing well disappeared; I could only think about pleasure"* (Interview 8) *"I lost all shame; I felt freer to do whatever I wanted"* (Interview 3) *"Work stress disappeared; I felt lighter"* (Interview 2)	**Excerpts:** *"I once had an overdose—it was horrible; I thought I was going to die"* (Interview 4) *"My professional life was affected; I lost control"* (Interview 3) *"I became dependent; I could no longer have sex without using something"* (Interview 4) *"I lived in fear that someone would find out and harm me"* (Interview 7) *"I lost contact with old friends; I became isolated" (Interview 7)* *"My health got much worse—physically and mentally"* (Interview 4)

Phase 2 — In-Depth Interviews

The antecedent and consequent variables obtained from the theoretical functional assessment were used to develop a semi-structured interview script with 41 questions (Appendix B).

After the script was formulated, the 41 questions were grouped by the researcher into nine sections, according to thematic similarity: (a) *Demographics and characterisation* (questions 1–8): aimed at collecting the data presented in tables 2 and 3; (b) *Sexual and affective partnerships* (questions 9–13): information on relationships, number of male sexual partners and self-assessment of sexual life; (c) *Substance use profile and self-identification* (questions 14–20): questions on self-assessment of substance use, individual perception of concepts such as "drug user" and "substance

abuse", and the practice of chemsex itself; (d) *Sexual health* (questions 21–22): self-reported use of protection during chemsex and sexually transmitted infections (STIs); (e) *Antecedent variables related to chemsex* (questions 23–25): questions exploring possible antecedent variables mapped in Phase 1; (f) *Operant responses in chemsex* (questions 26–28): questions exploring the responses (use) mapped in Phase 1; (g) *Consequent variables related to chemsex* (questions 29–35): questions exploring possible consequent variables mapped in Phase 1; (h) *Self-control* (questions 36–37): questions exploring possible attempts to individually reduce or discontinue substance use (self-control responses); and (i) *External support and communication* (questions 38–41): questions exploring help-seeking behaviour and, from an individual perspective, views on communication and approaches by organisations, clinics and other actors.

It is also worth noting that, by proposing a semi-structured interview, it became possible to include additional, unplanned questions during the interview to clarify or deepen information shared by participants. Likewise, if a participant spontaneously provided information in response to a question that would have been collected by a subsequent question, that subsequent question was not asked, but the information was highlighted in the transcript.

Phase 3 — Joint Functional Assessment of the Interviews

The reports collected in Phase 2 were used to conduct a joint indirect functional assessment of the interviews, identifying possible antecedent and consequent variables and responses correlated with them.

Initially, a spreadsheet with five columns was created in Microsoft Excel to perform a 5W analysis based on the framework by Reichert et al. (2021)—when, where, why, with whom and what happened after substance use—for each participant in this study. The spreadsheet was then adapted into the following columns: (a) Participant:

identification of each interviewee (P1 to P7); (b) Antecedent variables; (c) Responses; and (d) Consequent variables, completed similarly to Phase 1; and (e) Punishment: a column designed to identify consequences related to positive or negative punishment in chemsex.

Subsequently, to obtain an aggregated result of the reports, a joint indirect functional assessment of the interviews was conducted, using the same four columns as in the individual assessments. The result of the joint functional assessment was then subjected to a 5W analysis (Reichert et al., 2021) for refinement.

Settings and Materials

Six interviews were conducted via video call using the Google Meet platform, with audio and video recorded using the tl;dv app (https://tldv.io/) and with real-time transcription generated by the Tactiq tool (https://tactiq.io/). Since tl;dv also enables transcription, both transcripts—from tl;dv and Tactiq—were combined to increase accuracy. A seventh interview was conducted in person, at a restaurant, and only the audio was recorded using a Motorola G54 5G mobile phone. This interview was manually transcribed by a qualified professional hired by the researcher.

Information Analysis Categories

The transcripts were used to compile information across five analytical categories, as shown in Table 6. A sixth item refers to the joint indirect functional assessment, as described in Phase 3.

Table 6

Information Analysis Categories: Interviews

Category	Definition
Sexual and affective partnerships	Information on participants' casual and/or stable sexual partnerships, types of relationships (monogamous or not, when applicable), number of partners and self-assessment of sexual life.
Substance use profile and self-identification	Frequency and patterns of substance use (and whether associated exclusively with the sexual context or also with other contexts), which substances are or were used, situations (antecedents) correlated with chemsex, self-perception of substance abuse or not, correlation with alcohol and participants' self-identification as "drug users."
Sexual health	Self-reports on the diagnosis of STIs and HIV/AIDS—and, in the case of a positive HIV diagnosis, viral load status—and protection strategies associated with substance use in the sexual context.
Self-control	Self-reports of individual strategies aimed at reducing or discontinuing substance use, analysed from the perspective of Skinner (1953).
External support and communication	Reports of strategies for reducing or discontinuing substance use with the support of third parties (institutions, services, health professionals, etc.) and information about what participants consider an ideal approach when seeking such support.
Functional assessment	Identification of possible antecedent and consequent variables correlated with chemsex, based on the participants' reports.

Integrity

Two independent researchers (I1 and I2), both with postgraduate qualifications in behaviour analysis and experience in providing psychotherapeutic care to vulnerable groups, were invited to watch the recorded interviews and consult the transcripts in order to verify whether the researcher effectively addressed, in each interview, the information outlined in the semi-structured interview script (Phase 2).

Researcher I1 analysed three interviews, and researcher I2 analysed four. In a spreadsheet, each researcher marked, for each participant and each question, whether the question had been verbalised by the primary researcher in an identical or approximate form to the script, or whether the information requested by the question had been spontaneously reported by the participant—thus not requiring verbalisation. If the information had been addressed in any way during the interview, the option "Yes" was marked. If not, "No" was marked. A third option, "Not applicable", was used for cases in which the question or information was irrelevant—for example, when a question asked

whether a stable romantic relationship was “open” for a participant who had already reported not being in a relationship.

The number of “Yes” responses was summed and calculated in relation to the total number of questions using the formula: [number of “Yes” responses / (total number of responses)] x 100] for each interview, and then collectively. The overall integrity of the seven interviews was 88.5%.

Results

Sexual and Affective Partnerships

Questions 9 to 13 in the interview guide make up the first category of analysis in this study and aimed to investigate the number of sexual partners, self-assessment of sexual life and participants’ casual and stable partnerships—in the case of the latter, whether they were “closed” monogamous relationships or open ones, i.e. allowing more than one regular partner.

To the first question in this section (“How many male sexual partners have you had in the last month?”), P1 replied that he had only one: his current stable partner, with whom he had started a monogamous relationship two months before the interview. P1 was also the only participant who answered positively to the question “Have you been in a stable relationship (dating, marriage, etc.) for at least six months?”.

When asked about the number of sexual partners, P2, P6 and P7 reported what we refer to as a “period of abstinence” in this study: no stable partners for six months and no sexual relations in the month immediately preceding the interview. P7, in particular, reported being in voluntary abstinence from sexual and affective relationships as part of a therapeutic approach to sexual compulsion and its association with substance use (cocaine), carried out by a specialist psychologist. He also mentioned being diagnosed with bipolar disorder. P6, who reported having loose teeth and numbness in his arm due

to continuous injectable methamphetamine use, also mentioned a recent diagnosis of schizophrenia—which, according to him, was probably induced or worsened by substance use. As he described it, “low libido” resulting from the medication for schizophrenia had also led to a period without sexual partners. P3, in turn, reported having had “more than 20, for sure” partners in the month before the interview; P4 reported 15, and P5 (bisexual) reported eight same-sex partners.

A broader time frame, however, can reveal a higher number of partners—often associated with substance use—especially in response to the question “How would you describe your sexual life? Why?”. P7, for instance, reported having had “more than 300” male sexual partners “because . . . it was completely out of control”, and although currently in a monogamous relationship, P1 described his sexual life as “very turbulent” and characterised by “a need for multiple partners” due to a “complex emotional bond of inferiority”. P2 said he could not estimate a number because “it’s countless”, linking the pursuit of multiple partners to “the need to feel desired”. P6 did not provide an approximate number but described sexual encounters over several consecutive days (“over a three-day weekend: Friday, Saturday and Sunday”) and extensive previous use of geosocial apps to seek sexual partners (“it all starts with the app”).

Substance Use Profile and Self-Identification

Questions 14 to 20 addressed participants’ substance use habits—whether associated exclusively with the sexual context (chemsex) or with other situations—the substances used, any correlation with alcohol, and how participants self-identified as “drug users” and whether they considered their use abusive. Summarised data are presented in Table 7.

Table 7

Participants: Summarised Substance Use Profile

Participant	Main substance in chemsex	More than one substance?	Self-identification as a drug user?	Considers substance use abusive?
P1	Cocaine	Yes	No, due to being abstinent	Yes, throughout life, and considers himself a "cross-addict" (more than one substance: alcohol and cocaine)
P2	Inhaled methamphetamine	Yes	Yes, due to history of harm and hospitalisations	Yes, due to history of multiple substances, especially methamphetamine as the main one
P3	Cocaine	Yes	Yes, because he started using substances as a "coping mechanism"	No, because he does not believe he needs help controlling his frequency of use
P4	GHB	Yes	No, because substance use does not affect social activities and is not frequent	No, for the same reasons previously mentioned, but reported having previously engaged in alcohol abuse
P5	Not identified. Experimentation with cocaine and methamphetamine	Yes	No, because he does not use substances daily: only recreationally and occasionally	No, for the same reasons previously mentioned
P6	Injected methamphetamine	Yes	Yes, even though abstinent at the time of the interview, due to previous frequency of use and exchange of sexual favours to obtain it	Did not refer directly to the topic, although he reported homelessness and impacts on physical and psychological health (schizophrenia)
P7	Cocaine	Yes	Yes, but "inactive" due to being abstinent	Yes, due to frequency of alcohol and cocaine use (main substance)

Note. The table highlights the substances identified in the literature as characteristic of chemsex.

P1 stated that he was abstinent—and therefore did not consider himself a drug user. He reported a four-year period of abstinence, followed by a relapse lasting one year and seven months. At the time of the interview, he had been abstinent again for two months and three days. P1, however, acknowledged being a substance-dependent person —in his own words, what he described as a "cross-addict", as he considered himself dependent on both alcohol and cocaine, the latter being his main substance. P1 also reported a history of substance abuse, which he linked to attempts to cope with what he described as his "complex emotional bond of inferiority" and his HIV diagnosis at 17: "I

think that because of that, it's already abusive, right? It's an escape. . . I could have chosen 'x' options, but it was abusive—it violated my body, my health, my time, my money, my mental health—because of that, my family structure and my emotional relationships. So yes, I think it was abusive." In addition to cocaine and alcohol, P1 said he had also used methamphetamine and ecstasy at other times.

P7, who described himself as an "inactive drug user", shared a story similar to P1's: "Saying I'm an 'ex-user' means I'll never use again . . . and the program I'm in. . . says 'just for today'. I'm an inactive drug user. I don't know if that's the best definition." P7 reported having abused alcohol—which made him more permissive to using other substances—and also using marijuana, poppers and ecstasy. However, his main substance was cocaine, always associated with sexual compulsive behaviour, which he consumed daily: "I was cheating on my ex-fiancé . . . at some guy's house, and he was using cocaine. Then . . . I said, 'Can I try it?' It was love at first sight. In fact, the day I used cocaine, I wrote a letter to myself saying, 'Finally, I met the magic powder. I'm enchanted, amazed.'" Today, in addition to psychotherapy, P7 attends Narcotics Anonymous (NA) and Sex and Love Addicts Anonymous (SLAA) meetings.

P2, P3 and P6 also identified themselves as drug users but with different nuances regarding self-identification. P2 reported a long history that resulted in 14 hospitalisations due to methamphetamine use, his main substance. He also said he started drinking alcohol at 17 and later switched between substances over the years: "For a while in my life, it was cocaine . . . Then I moved on to ecstasy . . . Then, for a time, I was on crack—and then, when I discovered methamphetamine, that's what dragged me down. It was the detonator . . . the one that really brought me to rock bottom." He also reported using marijuana, ecstasy, GHB, poppers and ketamine at different points—all of them, including methamphetamine, predominantly in sexual contexts. According to P2, alcohol

later became a substitute for other substances, although he did not like alcohol itself. Because of this history, P2 said he realised he had "a problem with substances" and substance abuse when "I saw that I was giving up my job . . . my family . . . my possessions for the use, that I was spending my entire salary on it." At the time of the interview, P2 said he had been abstinent from any substance for nine months but still considered himself "a drug addict".

P6's account echoed P2's. He identified himself as a drug user, although he was abstinent at the time of the interview and reported situations in which it was easy to obtain his main substance, methamphetamine—even by exchanging sexual favours: "The drug . . . it has such an attraction. Many times . . . when I was going to use it, people offered it to me . . . because it starts to become a prostitution network. You trade sex for drug." In addition to methamphetamine, P6 also reported using marijuana—outside the sexual context—alcohol and GHB, which, combined with methamphetamine, led to a crisis that hospitalised him: "When I realised . . . he [the casual partner] was shoving me into the bathroom to shower, and I was completely high, wanting sex, sex, sex . . . Then I was in the ambulance, stuck in the middle of the avenue and hitting myself like crazy. Then I blacked out again. The next day, I was in the hospital room, all tied up . . . I had fractured two ribs." It is worth noting that due to methamphetamine relapses, P6 lost his housing. At the time of the interview, he was living in a publicly funded shelter for gay men.

P3 said he considered himself a drug user because, after an initial experimentation phase, he began using substances as a "way out" when his job was not very reinforcing and he had to move to the coast of São Paulo to care for his sick father. Over time, he developed "the need to have sex while using. Today, it's hard for me to have sex without it—and I reached a point where I even used . . . during work hours . . . to keep myself 'more focused' on activities." Another use P3 reported for one of his main substances,

cocaine, was to "cut" body fat, accelerating fat loss during an anabolic steroid cycle: "I started a [steroid] cycle, and, combined with the cycle, I started using, and the side effect is fat burning. So, it helped me 'cut' . . . and I 'bulked up' with the effect of the cycle and defined [my body] very well." At the time of the interview, P3 acknowledged showing some loss of control over substance use: "This month, I'd say I lost control because all my credit cards are maxed out . . . I always had a line of reasoning, a way of thinking: as long as it doesn't affect your professional life, your financial life, it's fine." Despite this, P3 did not consider that he needed help with his frequency of use—which, for him, would characterise substance abuse. In addition to cocaine, he said he had also used MDMA (ecstasy) and, with some frequency, used GHB. He clarified that he did not like alcohol.

Following the same logic of not harming professional or social activities and not using frequently, P4 did not identify himself as a drug user or as engaging in substance abuse: "I don't use it every day. I don't use it for just anything, you know? I use it more for recreation and sometimes for sex." P4's main substances were GHB and, less frequently, cocaine. He reported a previous history of alcohol abuse but said he had stopped drinking because it had been replaced by other recreational substances—and that he had used ketamine, *lança-perfume*[4] ("loló"), ecstasy and combinations like "Calvin Klein" (cocaine + ketamine) on different occasions. His use mainly occurred at parties and in sexual contexts. "In that sense, I'm addicted to Gisele [GHB] during sex, right? But if I don't have sex, I don't use it."

P5 also did not consider himself a drug user or to engage in substance abuse, including alcohol. He had used marijuana, *lança-perfume*, cocaine and inhaled

[4] *Lança-perfume* is a chloroethane-based inhalant commonly used recreationally in Brazil, particularly in party settings, where it is inhaled for its rapid euphoric and disinhibiting effects.

methamphetamine, but, in his account, always as experimentation and in sexual or recreational contexts. For P5, the concept of a user is tied to daily use: “I think I’ve tried . . . most of the drugs we know. I never got addicted. I used them recreationally, meaning to have fun at parties, at raves . . . I’m not the type to have it at home and use it there. A user, in the literal sense of the word, is someone who uses that substance, that object, that thing daily. So, since I don’t use it every day, I don’t consider myself a user.”

Sexual Health

Questions 21 and 22 investigated participants’ self-reports of STIs associated with chemsex and the prevention or treatment strategies they adopted.

Self-reported STIs were common. P4, for example, reported having contracted *Candida*, HPV, syphilis and gonorrhoea (three times) over the course of his sexual life, as well as Mpox, which he transmitted to one of his partners. He described Mpox as “the worst of them all” due to the appearance and discomfort of the lesions and “because . . . it stops you from doing so many things and there’s no treatment”.

Syphilis and gonorrhoea were also reported by P1 and P5. The latter said that gonorrhoea, in particular, was the first STI he had ever acquired, and only after he began having sex with other men—initially, he had only had female partners. According to P5, the experience left him “really scared”.

Gonorrhoea was also reported by P6, who said he had contracted it repeatedly, including in its anal form: “There were times I got gonorrhoea, which is more common among people who slam[5] . . . especially if you’re bottoming, because as a bottom you don’t even know you have anal gonorrhoea . . . I’ve had it several times. Like three, four times.”

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[5] A slang term commonly used among Brazilian gay men to refer to injected methamphetamine.

In general, participants spontaneously reported low adherence to condom use, which was often associated with substance use. P3, for example, said that during sex under the influence of substances, “we become more permissive . . . we don’t see the need [for condoms]”. P7 reported that “when I have sex, I don’t use condoms”, and P5 said he only uses them “if the other person asks . . .; I wouldn’t otherwise”. P4 said it was “very rare” for him to have sex with condoms and that “it feels like people who do use them are discriminated against . . . It’s been a long time since I’ve actually seen someone using a condom in person”.

A positive HIV diagnosis was reported by four of the seven interviewees: P1, P2, P3 and P6. In the specific case of P1, the early HIV diagnosis was linked to the start of his substance use. All reported having an undetectable viral load (<200 copies of viral RNA per mL of blood), suggesting adherence to antiretroviral treatment. Among the three HIV-negative participants, two (P4 and P5) were on HIV pre-exposure prophylaxis (PrEP), while P7, who was not using it at the time of the interview, was considering starting.

P6’s case warrants particular mention. During the interview, he reported having condomless sex and said he was on PrEP. However, over the course of his history with injectable methamphetamine, he became inconsistent with PrEP use and eventually acquired HIV due to condomless sex and syringe sharing.

Another relevant finding emerged later during data collection and relates to sexual violence. Although the topic was not directly addressed in the interviews, participant P3 contacted the researcher again and urgently requested a follow-up online meeting. In that meeting, held three days after the initial interview, P3 reported that after meeting a casual partner, he engaged in chemsex with GHB. However, the partner made him take larger doses than he was used to—P3 suspects the partner even added them to

a soft drink. He said he "blacked out" and woke up four hours later "with this really sharp pain. Really sharp. He was trying to fist me . . . With no preparation, no lube, nothing . . . I said, 'Get your hand off me!' Then I managed to get away from him." The researcher provided support in response to the incident and advised P3 to report it to the police. P3 authorised the inclusion of this account in the study.

Self-Control

Questions 36 and 37 of the semi-structured interview explored possible self-control responses (Skinner, 1953) aimed at individually reducing or interrupting substance use. Analysis of the interviews revealed that the emission of such responses was directly related to participants' self-identification as drug users, discussed earlier: generally, participants who identified themselves as users and experienced a greater number or magnitude of punishments—P1, P2, P6 and P7—were more likely to emit them.

P1 reported that, when he decided to live alone at a certain point in his life, he made the decision to "take the HIV medication and . . . be responsible for myself." During that period, he met a steady partner who used cannabis and abused alcohol. By focusing on helping his partner overcome that situation, P1 explained, this contributed to "taking the focus off my illness" and enabled him to remain "clean" for a year. According to his account, self-control was especially evident in behaviours that resulted in avoiding places, habits, people and even songs that had been paired with substance use. P1 currently avoids the Bela Vista district in central Sao Paulo, which he described as a "trigger" for use—something that, he said, even motivated him to move back to his hometown, Santo André.

P2, in turn, reported physical consequences of substance use—weight loss, broken teeth—and exposing his family to difficult situations (aversive contingencies).

He said that, even knowing it was “wrong”, he used to call his mother to pay the dealers when he could not afford the substances, including in one situation where he feared for his life—knowing that, out of fear of violence against him, his mother would make the payment by bank transfer. While living with his grandfather, the situation escalated when his sister slapped him and he was expelled from home. His mother took him in, and he decided to try to avoid using by focusing on what he identified as the root of the problem: promiscuity. His self-control strategies followed a pattern similar to P1’s, involving responses aimed at avoiding contact with stimuli paired with use: “I had to stop hooking up with just anyone. I had to stop going to nightclubs. I had to stop going to saunas. I had to completely change my behaviour . . . there was no way I could keep going to the same places and doing the same things and expect my life to change.”

P7 reported similar strategies. His family also asked him to leave home, and he now avoids “people, places and habits . . . I don’t go anywhere that reminds me, I don’t talk to people . . . I don’t even have the phone contacts of . . . my friends who used to drink or do drugs.” Because of the association between substance use and sexual compulsion, P7 said he is also practising complete abstinence from sexual contact. In addition, he has been going to the gym as part of a structured routine: “It’s gotta be something disciplined.”

The strategy of avoiding stimuli correlated with substance use also influenced participants’ use of geosocial dating apps. P2, for example, reported deleting those apps from his phone: “I had to delete the apps.” P6 also mentioned these apps but chose to update his profile to remove any references to substance use. On such platforms,

substance use is often signalled through typical expressions and emojis[6] to attract people with similar practices. “If you open the app, you’ll see my profile is different now, my situation is different. There’s nothing about drugs there, mostly because my libido is really low,” said P6, citing a possible side effect of his schizophrenia medication.

P3, P4 and P5 presented less consistent accounts of self-control. P3 mentioned that if he is not planning to use substances with someone (in a sexual context), he avoids looking at the “delivery” contacts for substances saved on his phone. P4 said he tries to avoid doses of GHB that he considers dangerous “so I don’t get sick or ‘black out’, you know?” and avoids mixing it with alcohol, which he says he does not like. Finally, P5 reported that he sometimes refuses to use substances, especially if he notices a drop in “performance”, such as loss of erection.

External Support and Communication

The final questions of the interview, 38 to 41, sought to explore the search for external support—defined here as any strategy to reduce or stop substance use with professional or third-party assistance—and to gather information on what participants considered to be an ideal approach.

This category was also linked to participants’ self-identification as drug users. Narcotics Anonymous (NA), founded in 1953 and present in more than 140 countries, including Brazil (NA, 2018), was cited by P1, P2, P6 and P7. P6 also reported additional

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[6] On dating apps such as Grindr and Hornet, profiles that directly mention substance use can be banned. For this reason, in Brazil, it is common to use substitute expressions—such as “additives” (*aditivos*)—and emojis to indicate substance preferences. Some common examples include: ⚡ = cocaine; ☘ = cannabis; 🚀 = injected methamphetamine (“slam”); 💍 = inhaled methamphetamine (“Tina”); 💧 = GHB (“Gi”, “Gisele”); 🔑 = ketamine (“key”).

treatment at a Psychosocial Care Centre (CAPS), including support related to his schizophrenia diagnosis. P7 mentioned the work done with his specialist psychologist.

Regarding the characteristics of an ideal service for those seeking external support to reduce or stop substance use, participants' responses highlighted the following: (a) guaranteed anonymity (P1); (b) a non-judgemental approach (P5); (c) attentive and welcoming care (P3); (d) specialised psychological and medical support (P1 and P7); (e) the option for both individual (P1) and group-based treatment, possibly through thematic groups (P7); (f) exploration of motivations behind substance use (P2 and P5); (g) transparency (P7); (h) opportunities for contact and connection among people in recovery (P7); and (i) adequate infrastructure, equipment and staffing (P3 and P7). Participants P4 and P6 chose not to address these questions in their interviews.

Functional Assessment: Antecedent Variables, Responses and Consequent Variables

The responses to questions 23 to 25 (antecedent variables related to chemsex), 26 to 28 (operant responses in chemsex), and 29 to 35 (consequent variables related to chemsex) are particularly relevant to the objectives of this study and are presented here. They were used in the joint 5Ws analysis and in the combined indirect functional assessment described in Phase 3 of the Method, which resulted in tables 8 and 9.

Table 8

Combined 5W Analysis Based on Participants' Responses

When	Where	Why	With (Whom)	What Happened
The cycle of substance use generally appears linked to specific contexts, such as moments of seeking pleasure, emotional connection, or under the control of aversive events, including attempts of escape or avoidance	Predominantly social and/or private environments involving at least one other person, characterised by permissiveness toward diverse sexual practices—including those considered unusual or fetishised—and acceptance of others' substance use	An overlap of emotional, sexual, and social reasons, with particular emphasis on use as a coping mechanism for emotional difficulties and/or as an amplifier of positive experiences	Although there were reports of individual and solitary use, social influence seems critical for initiating and perpetuating substance use, first through friends and later through sexual partners	A combination of positive and negative reinforcement tends to create a cycle that appears difficult to break. Although negative consequences were reported, they rarely seem to lead to self-control (at least without external support) given the magnitude of the reinforcers

In general, the data in tables 8 and 9 highlight several possible antecedent variables associated with chemsex: aversive antecedents (such as sexual abuse and an HIV diagnosis), the influence of others in both the initiation and maintenance of substance use, the social and sexual context of use, previous use of other substances, and a sexual history involving multiple partners. Among the consequent variables, possible positive reinforcers include the enhancement of sexual pleasure, greater connection with sexual partners, and validation from the social group. Possible negative reinforcers were also reported, where the removal itself becomes reinforcing—for instance, by attenuating or eliminating aversive feelings triggered by a sense of inferiority, an HIV diagnosis (P1), family illness, or dissatisfaction at work (P3).

Thus, on the one hand, chemsex is described as a way to amplify sexual pleasure, performance, intimacy, and social connection. On the other hand, it also serves as a coping mechanism for aversive contingencies, enabling escape or avoidance responses to variables correlated with those contingencies.

Table 9

Joint Indirect Functional Assessment Based on Participants' Responses

Antecedent Variables	Responses	Consequent Variables	Punishments
• Presence of aversive antecedent variables: HIV diagnosis and feelings of inferiority (P1); need for acceptance (P2); family illness and job dissatisfaction (P3); and a history of sexual abuse (P7, who reported in the interview having been abused by a priest while serving as an altar boy) • Influence of friends and/or sexual partners in the initiation and maintenance of use • Correlation with sexual and social contexts, with the first experimentation traditionally occurring in the latter (parties, nightclubs) and later migrating to the sexual context • Suggestion that prior use of other substances, including alcohol, is related to subsequent adoption of chemsex • Multiple sexual partners	• Behaviours centred on the use of substances in sexual contexts. Substances varied among methamphetamines, cocaine, GHB and ecstasy, although the latter was more common in the "social phase" • Use accepted among close individuals who are potentially partners or friends • Use typically shared with at least one other person and, not infrequently, in group sex contexts • Access to the substance either by one's own initiative or through offers from others in the sexual context • Strong presence of unprotected sex and use of PrEP, with possible discontinuation (specifically P6)	• Substance use correlated with sex (sexual pleasure, expansion of sexual repertoire and prolongation of sexual encounters), enhancement of sensations, disinhibition/performance, stronger connection with partners and social reinforcement (groups, contacts, friends who use and validate) • Presence of negative reinforcers—"coping mechanism" (P3)—establishing substance use in contingencies involving escape or avoidance responses to aversive situations, even when these occur later chronologically • Perception of having control over substance use in the absence of significant punishment (P3, P4 and P5)	• Impacts on physical and psychological health, financial difficulties and social, relational/affective and family harm (P1, P2, P3, P6 and P7) • Impact on professional or financial life tends to be reported as an indicator that use has "gone too far", marking the beginning of a phase identified as being a "drug user" (P3 and P4) • Greater awareness of user status as punitive situations accumulate (P1, P2, P3, P6 and P7), with high frequency of use (P5) and physical and/or psychiatric manifestations (P2 and P6) • Tendency for psychiatric symptoms (e.g. hallucinations) to appear in the medium and long term (P6) • Repeated diagnoses of STIs, such as gonorrhoea and syphilis, though often described as an "integral part" of use • Possibility of criminal events linked to inability to consent (P3) or association with dealers and potential threats to life or physical integrity (P2)—in these cases, often accompanied by attempts to avoid risk through strategies that reduce direct exposure (e.g. buying online, relying on people who offer, etc.)

Discussion

The interview narratives reporting a high number of sexual partners throughout life (e.g., “more than 300”, according to P7; “countless”, according to P2) and the self-reported diagnoses of STIs are consistent with the findings of previous research on chemsex (Chow et al., 2019; Evers et al., 2020; Pakianathan et al., 2018; Rosińska et al., 2018).

The literature also shows correlations with inconsistent condom use, transactional sex and the use of geosocial networking apps to seek partners, as reported by P6; and increased alcohol consumption, as seen with P1 and P4 (Evers et al., 2020; Hegazi et al., 2017). Herrijgers et al. (2020), Stardust et al. (2018) and Strong et al. (2022) further highlight exposure to situations of violence, as reported by P2 and P7, including temporary inability to consent to sexual activity (P3, who became a victim of a sexual crime during the study).

One significant finding of this study concerns the participants’ self-identification as “drug users.” As Souto et al. (2019) argue, this classification “excludes the person in their entirety” (p. 2)—and is therefore stigmatising. Among their findings, Souto et al. (2019), who propose the alternative term “person who uses drugs”, note that individuals who use substances tend to construct a self-image shaped by feelings of worthlessness, low self-esteem, poor self-care, and the internalisation of negative stereotypes. It is noteworthy that participants’ narratives in this study appear to reflect this analysis.

From a behaviour-analytic perspective, the term “drug user” functions as a tact (Skinner, 1957) that describes stimuli and contingencies correlated with active or frequent (even daily) use (P1, P5 and P7), use of more than one substance (P1, P6 and P7), use extending beyond recreational contexts (P3 and P4), and, most significantly, exposure to punitive contingencies in financial, occupational, familial, affective,

psychological, physical and/or sexual domains (P1, P2, P4, P6 and P7). As such, the tact "drug user" may acquire aversive properties through pairing. Furthermore, as seen in the results, it can evoke treatment-seeking responses (external support).

Although this Study 1 did not directly address frequency or duration of substance use in the interview protocol, these associations could still be inferred. Participants who self-identified as "drug users" tended to report long-term use (P1 and P2) and high frequency (P3, P6 and P7), especially compared to those who described their use as limited, non-daily, and confined to recreational settings (P4 and P5).

As noted in the Introduction of this study, Horwitz et al. (2019) found no relation between self-identification and future substance use behaviours. In this study, however, self-identification as a "drug user" appeared, in relation to chemsex, to be correlated with the pursuit of external support—whether in clinics or specialised organisations, most notably Narcotics Anonymous—or with professionals providing psychotherapeutic and psychiatric treatment focused on substance use and disorders correlated with it, such as schizophrenia (P6) and sexual compulsion (P7). However, once an individual achieves treatment success or abstinence, they tend to avoid direct self-identification as a "drug user" (escape or avoidance of the aversive tact), as observed in the accounts of P1 and P7, the latter even describing himself as "inactive" to emphasise his current non-use status.

These findings seem to echo the recommendation of Chen et al. (2021), who suggest that self-identification should instead reflect the specific substance an individual uses. This may be a valuable starting point when examining the relationship between self-identification as a "drug user" and the main substance used in chemsex. However, based on the present findings, it is also crucial to consider the individual's behavioural repertoire, the aversive or reinforcing properties that verbal stimuli (Skinner, 1957) may

have acquired for them, and the need to avoid stigmatising terminology, as proposed by Souto et al. (2019). In this sense, if self-identification serves a behavioural function related to seeking help, it might be more effective to reinforce terminologies that are non-aversive in relation to the individual's behavioural history. Future research should further investigate how self-identification with *different substance-related expressions* might serve as antecedent variables for help-seeking behaviour, to design reinforcing contingencies that promote improved quality of life.

Guidelines and Communicative Approach

Given the researcher's background in journalism, the way in which specialised chemsex services are communicated—and how related behaviours are described—is highly relevant to the aims of this study. The participants' accounts pointed to key elements for an effective service: non-judgement (a non-punitive audience, in Skinner's [1957] terms), empathetic support, specialised psychological and medical care delivered individually or in groups, transparency, and peer contact during recovery. These elements are consistent with the successful experience reported in Sydney by Stardust et al. (2018) and with the recommendations of Souza et al. (2023) for public policies addressing chemsex.

Functional Assessment and 5W Analysis

Brum (2023) conducted a literature review of 25 studies published in the five years preceding her thesis, aiming to examine factors influencing condom use or non-use among MSM in different countries. Only one of these studies—conducted by this researcher (Lima, 2019)—focused specifically on the behavioural characteristics of gay men from a behaviour-analytic perspective.

Brum's (2023) research involved 120 participants attending the Domingos Alves Meira Specialised Infectious Diseases Outpatient Service in the city of Botucatu (SP,

Brazil). Data were collected using a questionnaire developed by the author, along with the Self-Reporting Questionnaire (SRQ-20), Alcohol Use Disorder Identification Test (AUDIT), and Social Support Scale (SSS). Among the results most relevant to this Study 1, 75% of participants reported not using condoms in all anal sexual encounters in the previous six months, with 81% showing a trend toward reduced or discontinued condom use—a behaviour maintained by immediate reinforcement (sexual pleasure) and a possible inability to exercise self-control when choosing a delayed consequence (Brum, 2023).

In the present study, pleasure and the pursuit of its intensification emerged as key consequent variables associated with chemsex, both in the 5W analysis and in the indirect functional assessment (tables 8 and 9). However, these same analyses revealed a complex behavioural pattern among participants, where multiple antecedent and consequent variables interact and overlap within both positively and negatively reinforced contingencies.

Regarding consequent variables, participants' narratives suggested a predominance of positive reinforcers—not only pleasure but also disinhibition, connection and enhanced sexual performance. However, negative reinforcers were also present, particularly those related to escape or avoidance of aversive stimulus classes. Such cases included feelings of inferiority and HIV diagnosis (P1), need for acceptance (P2), family illness and dissatisfaction with work (P3), and experiences of sexual abuse (P7). These findings suggest that chemsex functions not only as a positively reinforced behaviour but also as a coping mechanism for aversive contingencies, echoing Stuart's (2019) arguments.

Social reinforcers also appear highly relevant. Typically, friends or sexual partners invite individuals to try substances for the first time, with use continuing in

permissive environments where chemsex is shared with others—such as parties and nightclubs—and, through possible generalisation, in more intimate and private sexual encounters, often arranged via geosocial networking applications.

Although punishments (e.g., health, financial, and social problems) were reported, they often appeared to be delayed, inconsistent, or even absent, especially early on. This contributed to a perceived sense of control over one's own use, even in contexts of polydrug use (as described by P4) or significant financial expenditure (as reported by P3). As a result, self-control strategies may only emerge later, once substance use has significantly impacted multiple life domains—a pattern seen in the accounts of P1, P2, P6, and P7. At the same time, these punishments show correlations with self-identification as a "drug user."

Antecedent variables, meanwhile, merit special attention, as they represent one of this study's most substantial contributions. Beyond the social influence and approval of friends and sexual partners—which themselves acquire antecedent functions—and beyond a history of frequent substance use or abuse, such as alcohol or cannabis, as well as multiple sexual partnerships involving supposedly "less conventional" practices like fisting, the presence of the aversive events discussed earlier in relation to negative reinforcement also appears significant. In such cases, their presentation—within a negatively reinforced contingency—takes on an antecedent function as a reflexive establishing operation, by which the absence of the event itself becomes reinforcing (Langthorne & McGill, 2009).

This suggests potential avenues for behaviour-analytic research that conceptualise chemsex within the context of aversive control, thereby contributing to a more precise characterisation of gay and bisexual men who are more likely to engage in or escalate to polydrug use.

Conclusion

This study aimed to identify antecedent and consequent variables related to chemsex practices among seven gay and bisexual men from a behaviour-analytic perspective, based on interviews conducted with a purposive (convenience) sample.

The findings revealed the complexity of the contingencies involved, with positive and negative reinforcers acting in combination to maintain behaviour. The identified antecedent variables—a major focus of this study—included aversive events, the influence of friends and sexual partners, a history of substance use, multiple sexual partnerships, and less conventional sexual practices, often facilitated by geosocial networking apps, consistent with existing literature.

Furthermore, social reinforcement played a significant role in both the initiation and maintenance of chemsex, and self-identification as a "drug user" emerged as a relevant factor, associated with both external help-seeking and the perception of punishment across domains such as health, work/finances, and social relationships.

The indirect functional assessment and 5W analysis revealed that, in addition to being an operant behaviour maintained by positive reinforcers associated with sex (sexual pleasure, an expanded sexual repertoire, and prolonged sexual activity), chemsex also involves escape and avoidance responses to aversive stimuli. This underscores the need for behaviour-analytic interventions that address both immediate reinforcers and aversive control processes linked to the practice.

Possible interventions include communication strategies and specialised chemsex services that emphasise a non-punitive audience (Skinner, 1957), professional support, transparency, peer experience-sharing, and the involvement of individuals undergoing treatment and/or recovery in message development. Such approaches may help reduce

aversive control already experienced by individuals, aligning with the recommendations of Stardust et al. (2018) and Souza et al. (2023).

These elements are complemented by Souto et al.'s (2019) findings, which—based on the stigmatising self-image often reported by people who use substances—recommend that services support individuals in "learning to like themselves again, valuing life, reconnecting with friends, rebuilding dignity, restoring self-confidence, and regaining self-esteem" (p. 7, our translation). Although these recommendations are not behaviour-analytic per se, they provide a valuable framework for behaviour analysts to reinterpret within their own discipline, enabling the development of welcoming and/or intervention strategies aimed at reducing or eliminating aversive contingencies within help-seeking contexts or targeted communications.

In this sense, the findings highlight the importance of these considerations in communication strategies. Involving users in treatment and/or recovery processes; using current but non-stigmatising terminology (tacts) within this population; distancing messaging from a juridical-moral perspective; and adopting verbal responses that sometimes emphasise the individual dimension and sometimes the collective, shared experience of chemsex users—including opportunities for peer contact—may help shape antecedent variables that increase the likelihood of help-seeking behaviour.

Among the limitations of the present study, the use of a convenience sample stands out, which may limit the generalisability of the findings. Furthermore, as the study relied on interviews addressing retrospective experiences, the data are subject to the inherent limitations of self-report, such as memory biases and imprecision in identifying the variables controlling the behaviours reported (Skinner, 1953, 1957). In addition, although the proposed communication strategies were discussed theoretically, they were

not evaluated experimentally, suggesting the need for future experimental studies to address such strategies from a behaviour-analytic perspective.

In summary, this study offers an initial framework for understanding chemsex through a behaviour-analytic lens, while highlighting the urgent need for research that translates these findings into clinical practices, public policies, and effective communication strategies aimed at gay and bisexual men.

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Appendix A — Informed Consent Form (Study 1, Brazilian Portuguese)

Prezado senhor,

Você está sendo convidado(a) a participar da pesquisa científica "**Chemsex e vulnerabilidade ao HIV/Aids e outras ISTs: uma investigação analítico-comportamental**", desenvolvida sob responsabilidade do pesquisador João Marinho de Lima Neto e orientação da Profa. Dra. Paula Suzana Gioia, do **Programa de Pós-Graduação em Psicologia Experimental: Análise do Comportamento (PEXP) da Pontifícia Universidade Católica de São Paulo (PUC-SP)**.

Esta pesquisa visa investigar o **chemsex** (uso de drogas no contexto sexual) entre gays e outros homens que fazem sexo com homens por meio de uma **entrevista semiestruturada**. Os dados coletados serão utilizados para a formulação de categorias de análise e descrição de possíveis variáveis relacionadas ao chemsex, buscando viabilizar pesquisas posteriores de intervenção e tratamento.

Sua participação no estudo consistirá em responder à entrevista, por meio da plataforma Google Meet ou pessoalmente, cuja duração máxima está prevista para 1 hora. A entrevista será gravada e transcrita, razão pela qual, uma vez assinado este termo, você também autoriza ambas as tarefas, com cessão gratuita dos direitos de imagem e áudio.

Esta pesquisa oferece riscos mínimos aos participantes, podendo ocorrer algum cansaço na realização das tarefas ou desconforto pelo conteúdo das perguntas. Contudo, se você se sentir desconfortável de alguma forma, poderá interromper sua participação a qualquer momento, sem penalização alguma, bastando informar ao pesquisador. Não haverá nenhum tipo de despesa, e qualquer tipo de dano diretamente resultante de sua participação na pesquisa será indenizado.

Esclarecemos, ainda, que as **informações de cada participante são confidenciais**, inclusive sua imagem e áudio. A autoria das respostas será mantida em absoluto sigilo, inclusive com o emprego de técnicas adequadas como ocultação e pixelização de imagens e alteração de áudio. Tudo que você responder será utilizado para **fins acadêmicos**, podendo ser apresentado em congressos, publicações e outras formas de divulgação nacional ou internacional, **sem identificação do autor das respostas**.

Caso tenha alguma dúvida sobre a pesquisa, você poderá entrar em contato com a coordenadora responsável pelo estudo, **Profa. Dra. Paula Suzana Gioia**, que pode ser localizada no Programa de Pós-Graduação em Psicologia Experimental: Análise do Comportamento da PUC-SP, na Rua Bartira, número 387, bairro Perdizes, em São Paulo/SP, CEP 05009-000, telefone (11) 3675-7081, das 9h às 18h, pelo e-mail pgioia@pucsp.br ou por telefone (11) 99186-7465; ou entrar em contato com o pesquisador responsável, **João Marinho de Lima Neto**, pelo e-mail joao.marinhosp@gmail.com ou pelo telefone (11) 99395-4160.

Sua participação voluntária é importante e gerará informações úteis para o avanço dos estudos de psicologia experimental sobre o chemsex.

Esta pesquisa está sendo conduzida com aprovação do **Comitê de Ética em Pesquisa da PUC-SP** — Certificado de Apresentação de Apreciação Ética (CAAE) nº 83532924.1.0000.5482 —, que tem como principais atribuições: (1) orientar pesquisadores quanto a aspectos éticos e metodológicos de suas pesquisas; e (2) receber dos voluntários das pesquisas ou de qualquer outra pessoa, denúncias de abusos ou de fatos adversos relacionados a estudos realizados no âmbito da PUC-SP.

O Comitê de Ética em Pesquisa (CEP) é um órgão que visa à proteção dos participantes de pesquisa do Brasil, de forma coordenada e descentralizada por meio de um processo de acreditação. O Comitê de Ética em Pesquisa da PUC-SP (telefone: 11- 3670-8466) pode ser localizado no térreo do Edifício Reitor Bandeira de Mello (Prédio Novo), na sala 63-C, na Rua Ministro Godói, 969 - Perdizes - São Paulo, SP - CEP: 05015-001, ou pode ser contatado pelo email cometica@pucsp.br.

Acredito ter sido suficientemente informado(a) a respeito do que li ou foi lido e informado para mim sobre a pesquisa. Ficam claros para mim os propósitos do estudo, os procedimentos, as garantias de sigilo, os benefícios para mim, os riscos mínimos e a isenção de despesas. Concordo, voluntariamente, em participar deste estudo e o assino digitalmente.

Nome completo do participante: *

RG: *

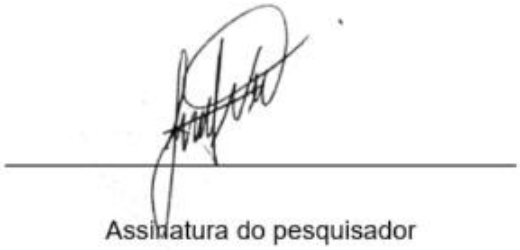
CPF (apenas números): *

Assinatura: *

Signature

Data: *

Eu, João Marinho de Lima Neto, portador do RG 23.374.786-2 e do CPF/MF 267.248.378-71, pesquisador responsável pelo estudo "Chemsex e vulnerabilidade ao HIV/Aids e outras ISTs: uma investigação analítico-comportamental", expresso o cumprimento das exigências contidas no item IV.3 da resolução 466/12, de 12 de dezembro de 2012.



Assinatura do pesquisador

Enviar →

Appendix B — Semi-Structured Interview Guide Developed for Study 1

(Adapted from the Original, in Brazilian Portuguese)

1. Name
2. Ethnicity
3. Sexual orientation
4. Gender
5. Age
6. Educational background
7. Your approximate income. And your family's.
8. City and state of residence
9. How many male sexual partners have you had in the past month?
10. Are you currently in a stable relationship (dating, marriage, etc.) for at least six months?
11. How many people are involved in this relationship?
12. Is it an open relationship? What are the rules?
13. How would you describe your sex life? Why?
14. Do you consider yourself a drug user? Why?
15. And in your opinion, what would be considered drug abuse?
16. Do you consider that you engage in drug abuse? Why?
17. How old were you when you first tried alcohol?
18. Do you think you have an abusive pattern of alcohol use? Why?
19. Which drugs have you used, and which do you currently use?
20. Have you used any of them in a sexual context? (If yes) Which ones, and how many times approximately in the past month?
21. Do you usually use any form of protection during sexual intercourse when using drugs?
22. Have you ever had any STIs? Which one(s)? In what context did you contract them?
23. Tell me about the first time you used drugs in a sexual context. How old were you?
24. How did you feel at the time, during that first experience?
25. Why did you decide to use again?
26. Would you say you have a pattern of use? For example: in specific situations, during certain periods, with certain people, etc.? Why?
27. Speaking of people, do you use it with one or more people, or alone? If with others, how do you meet them?
28. Is there an "exact" or "most enjoyable" moment for you to use the drug during sexual activity? What would it be?
29. What was the most significant experience you had while using drugs during sex? Why?
30. What do/did you feel while under the influence of the drug during sexual activity?
31. What do/did you feel after using drugs during sex (from the moment it ends until the following day, for example)?
32. And during the sexual act itself, does using drugs have any effect on penetration, oral sex, or other moments of intimacy?
33. Do you believe that using drugs has brought advantages to your sex life? (If yes) Which ones?
34. Do you believe that using drugs has caused harm to your sex life? (If yes) Which ones?
35. And to your professional, academic, or personal/family life? How has it been?
36. Have you ever taken any action to reduce or stop using? What was it?
37. What was the result of that action? Did it work? For how long?
38. Have you ever sought help from any association, organisation, or professional? How were you treated?
39. What convinced you to seek that specific help? How did you hear about it?
40. And what would convince you to seek help?
41. What would an ideal service to help you look like? How would it work?

Appendix C — Baseline Interview Guide Conducted by Fernandes (2020), Adapted from Brazilian Portuguese

1. Have you always had sexual relationships with men?
2. How old were you when you had your first sexual experience?
3. Did you use drugs before having sexual intercourse?
4. When did you use drugs for the first time?
5. Did you use drugs recreationally on a regular basis, separately from your sexual life?
6. When did you first learn about the practice of combining drug use with sex?
7. How old were you when you first used drugs in connection with your sexual life?
8. Which drugs have you used?
9. How did you decide to start using them?
10. How often do you use drugs as part of your sexual relationships?
11. What kind of influence do you think your group of partners has on your drug use?
12. How do you view the use of drugs with sex?
13. Have you ever been the supplier of drugs to a partner or group?
14. If so, have you ever felt guilty about supplying drugs to your partners?
15. Regarding the relationship between chemsex and HIV, do you think there is any increased risk for you or your partners?
16. Regarding the relationship between chemsex and other STIs, do you think there is any increased risk for you or your partners?
17. Do you tell anyone that you use drugs during sex?
18. Have you ever been in a stable relationship?
19. Have you used drugs with your stable partner?
20. Do you use drugs while having sex with one partner at a time or collectively?
21. Do you feel that you belong to a special group when using drugs in a sexual context?
22. Do you also have sex without drugs?
23. Do you use drugs alone or in other contexts?
24. Do you feel any difference between having sex with and without drugs?
25. Do you advise, or do you think you would advise, your peers to use drugs for sex?
26. Any other comments about your experience?

Study 2 — Chemsex among Gay and Bisexual Men: Functional Assessment of Responses in a Large-Scale Questionnaire

Chemsex, defined as the use of psychoactive substances in sexualised contexts to facilitate, prolong, and intensify the sexual experience, has received increasing attention in the scientific literature. Among the most commonly used substances are methamphetamine and GHB and, in certain contexts, cocaine and MDMA, also known as “ecstasy” or *bala* (Brazil, 2022; Wong et al., 2020).

Scientific interest in chemsex arises mainly from its impact on the physical and psychological health of gay men and other MSM, as it is frequently associated with the prevalence of STIs in this population (Brazil, 2022; Evers et al., 2020; Hoenigl et al., 2016; Pakianathan et al., 2018; Rosińska et al., 2018; Sao Paulo, 2023) and with harms such as dependence, intoxication, overdose, exposure to violence, and temporary inability to consent to sexual activity (Fernandes, 2020; Herrijgers et al., 2020; Stardust et al., 2018; Strong et al., 2022). In terms of psychological health, the use of substances associated with chemsex is linked to symptoms of depression and anxiety, behavioural changes, agitation, psychotic disorders, and hallucinations (Capodieci et al., 2025; Curto et al., 2020; Prestage et al., 2018).

These data highlight the need for studies that seek to understand the behavioural contingencies that maintain chemsex and for evidence-based interventions aimed at harm reduction and support. However, despite a long history of interventions targeting substance use—grounded in self-control approaches and reinforcement strategies (Avery, 2011; Fazzino et al., 2019; Reichert et al., 2021)—behaviour analysis (BA) does not appear to have addressed chemsex, and there is even a scarcity of behaviour-analytic studies that include gay, bisexual and other MSM (Brum, 2023).

To help bridge this gap, Study 1 of this thesis was conducted with the aim of identifying and describing, through semi-structured interviews with seven participants (chemsex users or former users), possible antecedent and consequent variables correlated with the maintenance of psychoactive substance use behaviour in sexual contexts among gay and bisexual men.

The indirect functional assessment and 5W analysis[7] (Reichert et al., 2021) in Study 1 indicated the complexity of the contingencies involved, with positive and negative reinforcers operating in combination. The role of social reinforcers was significant, as friends or sexual partners initiated participants' first use and this behaviour continued in contexts where chemsex was shared with others, such as parties, nightclubs, and intimate or private sexual encounters.

The antecedent variables identified in Study 1 included the influence (and approval) of friends and sexual partners—who, in addition to reinforcing the behaviour, subsequently acquired antecedent functions—a history of using other substances such as alcohol or cannabis, and multiple sexual partners, with whom participants reported engaging in less common sexual practices, such as fisting. In addition, aversive events (such as sexual abuse and HIV diagnosis) were identified as functioning in negatively reinforced contingencies for chemsex.

Another relevant finding that emerged from Study 1 was the self-identification of chemsex users or former users as "drug users", which was related both to seeking external support and to the perception of punishments experienced in different areas of life.

However, one of the limitations identified in Study 1 was the use of a convenience sample, which restricts the generalisability of its findings. To address this limitation, the

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[7] When, where, why, with whom and what happened.

present study was designed with the aim of testing, validating, expanding, or contrasting the previous results with a larger number of participants, recruited through an online questionnaire—considering that substance use is a behaviour surrounded by stigma (Souto et al., 2019). This strategy has already been adopted in other similar studies on substance use in sexualised contexts, notably those by Ezard et al. (2018) and Freestone (2023), conducted in Australia.

In Ezard et al.'s (2018) study, the authors aimed to develop a questionnaire specifically designed to assess sexualised substance use, called the Substance Use and Sex Index (SUSI). After reviewing 10 existing instruments in the literature—identified through a search of the ProQuest, PsycINFO, and PubMed databases—focused on assessing sexual risk behaviours related to HIV, other blood-borne viruses, and other STIs, the authors concluded that existing tools had a limited capacity to assess HIV/STI risk behaviours across different social, cultural, and epidemiological contexts. Among the reasons for this were the failure to incorporate advances in HIV treatment and prevention and the absence of assessments of specific sexual contexts of drug use, particularly among lesbian, gay, bisexual, transgender, intersex, and queer (LGBTIQ) populations. The SUSI was thus proposed to analyse changes in self-reported behaviours related to the transmission of HIV and other STIs in substance-use treatment studies.

The initial version of the questionnaire consisted of 26 items on substance use in sexualised contexts, which generated a risk scale for HIV and other STIs related to such use. This version was made available online for an initial external validation, applying a broad inclusion criterion—participants aged 18 or over residing in Australia—which resulted in 316 completed questionnaires. Participants were recruited through Recon (https://www.recon.com), an app/website for sexual encounters between men with a focus on fetishes, and via invitations on Facebook. After reviewing the completed

responses, 199 fully completed questionnaires were considered—105 of which were submitted by men (Ezard et al., 2018).

The researchers then revised the responses and the questionnaire content and combined them to create nine non-mutually exclusive risk categories: unprotected penile (anal or vaginal) sex, unprotected oral sex, shared sex toys, bloodplay (sexual practices involving blood), chemsex, sex in exchange for drugs, being "too high" to protect oneself, injectable risks, and group sex (Ezard et al., 2018). However, to date, no second version or new validation round of the instrument has been released.

Freestone (2023), in turn, led the M3THOD Study (https://www.m3thodstudy.org.au/), whose online questionnaire aimed to assess the effectiveness of community-based services for people who use drugs in sexual contexts —considering that, in Australia, interventions based on community-led and peer-based strategies have shown success in reducing harms associated with chemsex and drug use more broadly among sexual minorities (Stardust et al., 2018).

The M3THOD Study questionnaire consisted of questions distributed over 36 pages and presented in checkbox, dropdown, multiple-choice, and linear-scale matrix formats. It collected, among other things, data on demographics, relationship status (monogamous or otherwise), sexual behaviour within and outside relationships, psychological health (depression, anxiety, stress, etc.), drug use, clinical and/or community follow-up, evaluation of services for people who use drugs, and participants' perceptions of their own use (Freestone, 2023).

Objectives

Given the literature on chemsex and the ways of collecting information about it, the present study aims to investigate, both qualitatively and quantitatively, whether and how the same functional categories described in Study 1 apply to a larger sample of gay

and bisexual men—that is, through an indirect functional assessment (Hanley, 2012)—to validate, expand upon, or challenge the possible antecedent and consequent variables related to chemsex identified in Study 1.

Other objectives of this study, partially inspired by the initiatives of Ezard et al. (2018) and Freestone (2023), are:

1. To characterise the sociodemographic and behavioural profile of participants.
2. To map habits and substance use in sexual contexts.
3. To propose communication and support strategies for chemsex users seeking to reduce or discontinue the use of such substances.

Method

Participants

A total of 62 individuals aged between 25 and 58 years participated in the study. They met the following inclusion criteria: (a) assigned male sex at birth; (b) self-identified as male; (c) self-identified as homosexual, bisexual, or pansexual; and (d) reported having engaged in chemsex/sexualised drug use (SDU).

All participants digitally signed an informed consent form (Appendix A). The study was approved by the Research Ethics Committee of the Pontifical Catholic University of Sao Paulo (PUC-SP), Certificate of Ethical Clearance (CAAE) no. 83532924.1.0000.5482, Opinion no. 7.288.038.

Participants were recruited between 13 and 18 December 2024 through paid and unpaid social media posts and ads (Facebook, Instagram, TikTok and LinkedIn), a paid Google search ad and direct interactions on the geosocial networking apps Hornet and Grindr, which invited users to complete an online questionnaire hosted on Tally (https://tally.so/).

The ads and posts, the base artwork of which is provided in Appendix C, were targeted at gay and bisexual men over the age of 18—although the questionnaire also accepted pansexual participants—with no restrictions regarding region, state, or municipality.

In total, 96 respondents accessed the questionnaire. Of these, 34 were excluded for not meeting the inclusion criteria: 27 did not report SDU, and seven reported gender identities other than male. These responses were automatically filtered by Tally (Appendix B).[8] In such cases, respondents were redirected to a thank-you page.

Regarding the source of access, of the 62 participants included in this study, two were recruited via Hornet, one via TikTok, and the remainder through ads on Meta platforms (Facebook and Instagram). No participants accessed the questionnaire through Grindr, Google or LinkedIn.

Procedure

Phase 1 — Questionnaire: Chemsex

Based on the findings of Study 1, an instrument was developed and made available online through the Tally platform. It consisted of 37 questions (Appendix B), divided into four sections:

1. I — About You (12 questions): Age, sex assigned at birth, gender identity, sexual orientation, substance use, race/ethnicity, place of residence, income, educational background, and occupation.

[8] Appendix B contains screenshots of the original questionnaire in Brazilian Portuguese, including its logic, structure and format as published on Tally. An English-adapted version of the instrument may be provided upon request by contacting this author: +55 11 987146735.

2. II — Affective and Sexual Life (5 questions): Relationship status over the past six months; number of same-sex partners; HIV status, viral load, and PrEP use; STI diagnosis within the last six months; STI and HIV diagnosis following substance use at any time.
3. III — Substance Use and Habits (12 questions): Self-identification as a "drug user" and whether participants considered they engaged in substance abuse; identification of substances used in a sexual context; possible motivational and/or antecedent variables for use (e.g., stressful events, anxiety reduction, attending parties, sexual pleasure linked to past experiences); and a description of the contexts in which use occurred (alone or with more than one person).
4. IV — Consequences (8 questions): Possible consequences from positive, negatively reinforced, and/or punitive contingencies following substance use; self-assessment of the impact of substance use on life in general; information about attempts to reduce or discontinue use (possible self-control) and whether external support was sought; and descriptions of what participants considered to be ideal support services.

The questionnaire, which remains available online, included multiple-choice questions, checkboxes, multi-selection items, Likert scales, open-ended responses, and conditional questions, depending on the required level of detail and data collection needs.

The questions were designed to qualitatively and quantitatively investigate the functional categories described in Study 1, enabling an indirect functional assessment (Hanley, 2012) to validate, expand, or challenge possible antecedent and consequent variables—motivational operations, discriminative stimuli, aversive stimuli and reinforcers—associated with chemsex and identified in that study. They also aimed to

characterise participants' sociodemographic and behavioural profiles, map substance use habits in sexual contexts and propose communication and support strategies for chemsex participants. Consequently, the questionnaire included items explicitly referring to contexts of use (such as parties and sexual encounters); sexual and affective partnerships (especially the number of partners); the description of STIs, with explicit inclusion of Mpox; the investigation of STIs correlated with substance use at any point in time; self-identification as a "drug user"; and the description of possible antecedent and consequent variables expressed on Likert scales.

Furthermore, based on the findings of Study 1 and to improve participants' understanding of the questions, a more accessible and colloquial language was chosen over strictly technical behaviour-analytic terminology, which was subsequently identified, specified, and discussed in the data analysis.

Phase 2 — Pilot Test

The questionnaire was pilot tested with two participants from Study 1 to assess the adequacy of its language, approach, and online usability. Both participants considered the questionnaire appropriate, and only one suggestion—which was subsequently implemented—concerned the inclusion of more colloquial terms to identify substances, such as *padê* for cocaine and *bala* for ecstasy.[9]

[9] *Padê* is a Brazilian term that can refer to different things in everyday language. One of its most common uses is to designate a ritual dish offered to spiritual guides or deities in Afro-Brazilian religions such as Umbanda and Candomblé. However, within the context of substance use and chemsex, *padê* has been adopted as a slang term for cocaine. For *bala*, see footnote #3.

Phase 3 — Analysis and Categorisation of Information

For comparative analysis, the 37 questions were subdivided into categories previously identified in Study 1: (a) Sexual and Affective Partnerships; (b) Substance Use Profile and Self-Identification; (c) Sexual Health; (d) External Support and Communication; and (e) Functional Assessment, including possible antecedent and consequent variables, with the response defined as "using substances in a sexual context (chemsex)."

Due to the sample size and the questionnaire's length (which could have become excessive for an online form), the category of self-control—such as individual responses related to reducing or discontinuing substance use—was not directly addressed. However, self-control was analysed indirectly based on other data, in conjunction with the functional assessment.

Phase 4 —Development of Guidelines for Communication and Support Strategies

The findings were used to create a persona—a common strategy in communication, marketing, and user experience (UX) research—defined by Dam and Siang (2025) as a fictional character "which you create based upon your research to represent the different user types that might use your service, product, site, or brand in a similar way" (para. 1). According to the authors, personas help identify patterns within the sample and synthesise "the types of people you seek to design for" (para. 2). Based on the persona, communication and support strategy suggestions (guidelines) were proposed for services and organisations targeting individuals engaged in chemsex.

Results

Sample Characterisation

Of the 62 participants who qualified for the study, 56 (90.3%) identified as gay and six (9.7%) as bisexual.

Regarding age, central tendency statistics indicate a mean age of approximately 36.9 years, while the median age was 36.5 years, showing that half of the group was up to about 37 years old. The standard deviation (≈ 7.1 years) shows that most participants were concentrated in the range of approximately 30 to 44 years old, with the highest prevalence between 31 and ≈ 41 years, which encompassed 50% of the sample. In terms of race/ethnicity, 32 participants identified as White (51.6%), 22 as Brown (35.5%), seven as Black (11.3%), and one as Asian (1.6%).[10]

Among the participants, 58 (93.5%) reported residing in Brazil, two in the United States, one in Argentina, and one in Germany. The most frequently reported cities of residence were São Paulo, with 23 participants (37.1%), followed by Rio de Janeiro with four (6.5%), Belo Horizonte and Salvador with three each (4.8% each), and Santo André (SP), Curitiba, and São Caetano do Sul (SP) with two each (3.2% each). Twenty-one other cities were reported once each, and two participants did not provide this information. Regarding city size, 48 participants reported living in large cities (77.4%), 12 in medium-sized cities (19.4%), and two in small towns or rural areas (3.2%).

A total of 12 Brazilian states were represented by at least one city: Southeast region ($n = 44$, 71%): São Paulo (36), Rio de Janeiro (5), and Minas Gerais (3); Northeast

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[10] In Brazil, the official ethnic–racial categories are *Branco* (“White”), *Pardo* (“Mixed”), *Preto* (“Black”), *Indígena* and *Amarelo* (“Yellow”). These terms have been adapted into English here as White, Brown (Mixed), Black, Indigenous, and Asian, respectively.

region (*n* = 5; 8.1%): Bahia (3), Maranhão (1), and Pernambuco (1); Central-West region (*n* = 4; 6.5%): Goiás (2), Federal District (1), and Mato Grosso (1); South region (*n* = 4; 6.2%): Paraná (3) and Rio Grande do Sul (1); and North region, with a single participant from Tocantins (1.6%).

Regarding individual income, 53 out of 62 respondents provided their monthly earnings, with a median of R$ 4,000 and 50% ranging between R$ 2,000 and R$ 10,000. Nine participants did not provide income data. This suggests that the group was composed mainly of men from socioeconomic classes C and B (Carneiro, 2025; Tendências Consultoria, 2025) and relatively well-educated, as approximately 82.3% reported having at least a tertiary education qualification (25, undergraduate degree; 15, Master of Business Administration [MBA] or specialisation; 8, master's degree; and 3, doctoral degree).

Sexual and Affective Partnerships

Questions 13 and 14 asked about participants' relationship status in the six months prior to the study and the number of sexual partners in the month immediately preceding data collection.

Results show that most participants (*n* = 38, 61.3%) were single during the six months before the study. Among those who reported being in a committed relationship, 13 (21%) had a primary partner but also had other partners (open relationships), while seven (11.3%) were in strictly monogamous relationships. Polyamorous relationships were reported by four participants: three (4.8%) described an open polyamorous relationship (more than one primary partner and additional occasional partners), and one reported a closed polyamorous relationship (more than one primary partner but no additional partners outside the relationship). Overall, committed relationships were reported by 24 participants (38.7%), with relationships that allowed more than one

partner accounting for 27.4% of the sample, compared with 11.3% reporting strictly monogamous relationships.

Regarding the number of same-sex partners in the previous month, 12 participants (19.4%) reported exactly one partner, and eight (12.9%) reported none. The modal number was five partners, mentioned by 13 participants (21%), followed by three partners ($n = 6$; 9.7%) and four partners ($n = 4$; 6.5%). Intermediate values—two partners ($n = 3$; 4.8%), six ($n = 3$; 4.8%), 10 ($n = 3$; 4.8%), and 15 partners ($n = 3$; 4.8%)—occurred with similar frequency, and higher counts (above 20 partners) were reported by two participants (3.2%). Other varied counts totalled six occurrences (9.7%). The median number of partners was four, and the upper quartile was about six, indicating that half of the sample had up to four partners in the previous month. These data suggest a pattern in which participants in strictly monogamous relationships tend to report lower partner counts, while those who were single or in open/polyamorous relationships showed greater variability and, on average, a higher number of partners—most ranging between one and six, based on median, mode, and quartiles.

Substance Use Profile and Self-Identification

Question 18 asked whether participants considered themselves "drug users" or not, while Question 19 investigated the reasons underlying such self-identification. It is worth noting that one of the inclusion criteria for this study was the admission of substance use in a sexual context. However, as discussed by Souto et al. (2019), self-identification with the term "drug user" may encompass other layers of interpretation, potentially correlated with stigmatising (and therefore aversive) contingencies.:

In this study, a total of 38 participants (61.3%) self-identified as "drug users", whereas 24 (38.7%) rejected the terminology. In general, those who self-identified as users tended to report frequent use (e.g., daily or weekly), relapses after attempts at

abstinence, aversive consequences (physical, emotional, social and financial), a perceived need for substances to cope with aversive events, and a history of hospitalisation or treatment in their responses to Question 19. Some examples include: “I frequently use substances that alter my state of mind”; “I don’t use it daily, but I relapse every two months for three to five days, and it’s catastrophic. Several partners, many problems in all areas of life”; “I’m a recovering addict. I used drugs for 21 years. During the [COVID-19] pandemic, I intensified substance use, smoking and injecting crystal (‘Tina’), taking part in orgies, and ended up hitting rock bottom”; “In a chaotic city like São Paulo, drugs function as a coping or maintenance mechanism to avoid going insane”; “I use cannabis daily and, at some parties, I use MDMA or LSD”; “I’ve been hospitalised because of it. I had a psychotic break”; “Whenever I feel depressed, I use it as a coping mechanism.”

Among the 24 participants who did not consider themselves drug users, justifications reported in Question 19 generally referred to a perception of infrequent or occasional use, discontinuation of use, or the belief that certain substances do not qualify as “drugs” or are “less serious”, particularly cannabis. Some examples include: “I used it a few times, during sex or with friends”; “I quit chemical substances two years ago, thank God”; “I don’t consider cannabis a drug. Although I have used others for chemsex, I only use cannabis in my daily life”; “I simply stopped. In fact, I used cannabis more frequently”; “I don’t use it frequently. I was a daily user for three years, several times a day, but it’s been 10 years since I’ve used it once every six months”; “I only use it when I masturbate or when my partner also enjoys chemsex.”

As a counterpoint to Questions 18 and 19, Question 28 asked participants whether they considered themselves to be engaging in substance abuse. A total of 18 participants (29%) answered positively, 15 of whom were among those who had self-identified as

drug users. In general, those who reported substance abuse linked it in Question 29 (an open-ended question) to high frequency of use ("I used every 15 days, but I could no longer have sex without snorting"); a lack of control once use began ("Because when I start, I can't stop for days until physical exhaustion, and I become extremely altered"); harm to physical or psychological health ("Once I start, I can't stop, and it causes psychological and physical harm"; "Because it's no longer so pleasurable . . . These are moments when I'm psychologically vulnerable, and the amount has been increasing so much that I've already been hospitalised"); and direct impacts on personal and/or professional life ("Traumatic events? I moved to another city and had to get a new job.").

Among the 44 participants (71%) who reported not engaging in substance abuse, the reasons given were generally related to a perception of low frequency ("Because I use very little"; "The use is very specific with specific partners . . . It happens around once or twice a month"; "Cannabis, frequently, but the other [chemsex-related] drugs mentioned earlier are used very rarely in a sexual context"); a perception of control over their use or abstinence ("The use is always controlled and in environments where I feel safe to do so"; "I am currently in recovery! I am not using substances"); and the perception that it does not interfere with daily activities or interpersonal relationships ("Because it doesn't interfere with my work, daily activities, or interpersonal relationships"; "Because I use responsibly, never putting other people's lives at risk").

To verify whether there was an association between self-identifying as a "drug user" and reporting substance abuse, data from Questions 18 and 28 were subjected to Pearson's chi-squared test (χ^2). The analysis showed a statistically significant association ($\chi^2 = 3.97$, $p = 0.046$) in the sample between self-identification as a "drug user" and the acknowledgement of substance abuse—that is, those who self-identified as users were more likely to report their use as abusive than those who rejected the terminology.

Substances in some way correlated with chemsex were mapped in Question 20 ("Regarding the substance(s) you have used in a sexual context, which ones were they? Select all that apply"). The most frequently reported was cocaine, cited by 46 participants (74.2%), followed by poppers/rush (*n* = 43; 69.4%), MDMA (*n* = 30; 48.4%), methamphetamine (*n* = 20; 32.3%), and ketamine (*n* = 26; 41.9%). "Other substances", not specified in the questionnaire, were cited by 15 participants (24.2%).

A relevant finding is that 58 participants (93.6%) reported using more than one substance. Among the 38 participants who self-identified as drug users, all reported using more than one. Among those who did not self-identify as drug users, 20 (83.3% of "non-users") reported using more than one, and only four (16.7%) reported using a single substance.

Sexual Health

Questions 15, 16, and 17 addressed participants' sexual health. Question 15 asked about HIV status and viral load, if positive; and, if negative, whether or not participants were using PrEP. Question 16 aimed to map self-reported STI diagnoses in the six months preceding the study, and Question 17 asked whether participants had ever been diagnosed with an STI *after initiating substance use*.

Of the 62 participants, 25 (40.3%) reported being HIV-positive with an undetectable viral load (< 200 copies of viral RNA per mL of blood), and only four (6.5%) reported a detectable viral load. One participant stated they did not know their HIV status. Another 22 (35.5%) reported being HIV-negative and on PrEP, while 10 (16.1%) reported not using it. Overall, either as prevention or treatment, 47 participants (75.8%) were potentially using antiretroviral therapy, suggesting strong adherence to biomedical HIV/AIDS prevention strategies, including the "Undetectable = Untransmittable" (U = U) principle.

Regarding other STIs, 11 participants (17.7%) reported never having received a diagnosis, while 20 (32.3%) reported being diagnosed more than one year prior to the study. Fifteen (24.2%) had been diagnosed more than six months and up to one year before, and another 16 (25.8%) reported being diagnosed with an STI within the six months preceding the study. Among those diagnosed within six months, the most frequent STI was syphilis ($n = 7$; 11.3% of the total sample and 43.7% of those diagnosed within six months), followed by gonorrhoea ($n = 6$; 9.7% and 37.5%, respectively). Hepatitis B, human papillomavirus (HPV), and Mpox were each reported once. Three participants indicated having been diagnosed with "another STI," though the questionnaire did not require them to specify which.

These figures increased substantially when Question 17 asked about STI diagnoses at any point *after* substance use began. In this case, 37 participants (59.7% of the sample) responded positively. Syphilis was again the most reported STI, with 29 occurrences (78.4% of those diagnosed after substance use), followed by gonorrhoea with 17 cases (45.9%), and HIV with 15 (40.5%). HPV was mentioned six times, and Mpox four times.

External Support and Communication

Questions 33 to 37 explored participants' attempts to stop or reduce substance use in sexual contexts, their search for external support, and what they considered ideal support services. Of the 62 participants, 45 (72.6%) answered "Yes" to Question 33 ("Have you ever considered stopping or reducing your use?"), with 29 of them being those who had self-identified as drug users (64.4% of those who wanted to stop or reduce). The reported reasons were mapped in Question 36 and are summarised in Table 1.

Table 1

Reasons Reported for Stopping or Reducing Chemsex

Reason	*n*	% out of 45
Psychological health impacts	32	71,1%
Physical health impacts	30	66,7%
Financial difficulties	15	33,3%
Work-related difficulties	12	26,7%
Social pressure	11	24,4%
Family pressure	6	13,3%
Fear of contracting another STI	5	11,1%
Legal or criminal issues	5	11,1%
Fear of contracting HIV	4	8,9%
Other (not reported in the questionnaire)	9	20,0%

Of the 45 participants who reported having tried to stop or reduce their substance use, 17 (37.8% of this subgroup) also answered "Yes" to Question 34 ("Have you ever sought external help for this, such as a service, therapy, organisation, support groups, etc.?"), 13 of whom had self-identified as drug users.

To verify whether there was an association between self-identifying as a "drug user," considering stopping or reducing use, and seeking external help, data from Questions 18 ("Do you personally consider yourself a 'drug user'?"), 33 ("Have you ever considered stopping or reducing your use?"), and 34 ("Have you ever sought external help for this, such as a service, therapy, organisation, support groups, etc.?"—shown only to those who answered "Yes" to Question 33) were submitted to a chi-square (χ^2) test.

No statistically significant association was found between self-identifying as a "drug user" and considering stopping or reducing use ($\chi^2 = 0.29$, $p = 0.591$)—both groups ("drug users" and "non-users") showed similar proportions of intention to change. Regarding seeking external help, the result was similar: although self-identified "drug users" sought external support in greater absolute numbers, the difference compared to "non-users" was not statistically significant ($\chi^2 = 0.98$, $p = 0.321$).

Question 35, an open-ended question, sought to explore the experience of seeking external help among those who had done so. Fifteen participants responded, 11 of whom

had self-identified as drug users. Seven reported using more than one type of support. Among the types of support mentioned, eight referred to psychiatric and/or psychotherapeutic interventions (including medication), five cited participation in Narcotics Anonymous groups—one of whom also reported receiving care at a Psychosocial Care Centre for Alcohol and Drugs (CAPS AD). Two mentioned inpatient treatment at clinics, one voluntarily. Two others described religious approaches ("Jesus Christ," "Umbanda"). One participant reported negative experiences with both psychiatric and psychoanalytic interventions.

Finally, Question 37 ("Finally, in your opinion, how should an ideal support service for those seeking help to stop or reduce substance use be structured? How should the service or professional communicate with those seeking help?") asked participants how, in their opinion, an ideal support service for those seeking to stop or reduce substance use should be structured. This question was answered by 33 participants (53.2% of the total sample), 21 of whom had self-identified as drug users (63.6% of those who responded). The main points highlighted as essential characteristics included: (a) availability of a safe, non-judgemental environment (a non-punitive audience, as per Skinner, 1957); (b) use of language appropriate to the gay and chemsex contexts, including slang; (c) a multidisciplinary team; (d) flexible access options, ensuring anonymity, different schedules, and online services; (e) provision of active sexual health prevention (testing, PrEP, partnerships with nightclubs for distributing prevention materials); (f) peer support from people with previous substance use experience; (g) continuous support, even during relapses; and (h) recognition of the perceived positive consequences correlated with chemsex, as a means of shaping communication and building rapport with the target audience.

Examples of participant statements include: “Welcoming is essential . . . knowing that the more you embrace that patient, that person in difficulty, the easier it will be to help them stop using substances”; “In an honest and non-judgemental way”; “With empathy and without blame . . . especially in the sexual context”; “Having professionals who understand chemsex culture and the group’s slang, without using complicated medical terms”; “An integrated service: psychiatrist, psychologist, dermatologist, infectious disease specialist, social worker”; “Online support channels with moderation, discipline, and user identification without exposing their identity”; “A hotline similar to CVV [*Centro de Valorização da Vida*/Life Valuation Centre: a Brazilian suicide prevention helpline], but focused on users”; “Including sexual health assessments (PrEP, testing, guidance on condoms) to encourage risk reduction”; “Including testimonies from people who have overcome substance use; involving users in recovery in campaigns”; “Allowing users to bring friends or partners to sessions if it’s important for them—emotional proximity”; “Allowing continuity even during relapses; not cutting services if the user does not fully comply”; and “I understand the benefits of use. Framing drugs only as ‘bad’ and focusing exclusively on the harm distances professional intervention from the reality of use: yes, there is a bad side, but also a very good side. Developing awareness and autonomy to balance these aspects, in my view, is essential.”

In responses to Question 37, nearly all participants advocated for harm reduction (“From my experience, the service should be based on welcoming and awareness, on harm reduction, so that the person naturally begins to reduce. In the case of methamphetamine, stopping and switching to another substance, then gradually losing interest and eventually quitting altogether”; “From a perspective grounded in harm reduction and supportive care”). However, two respondents—both of whom had *not* self-identified as drug users—defended total abstinence as a strategy (“Harm reduction does

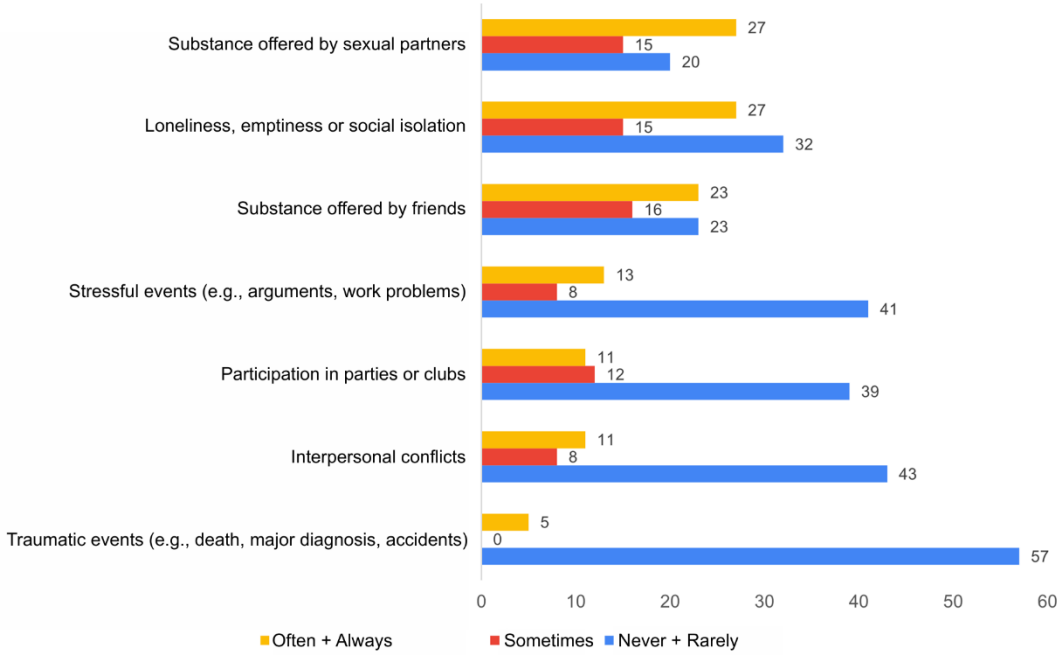
not work! People must be made aware that everything will get worse, even though it is a disease of self-deception and denial!"; "For dependency, controlled use does not exist. Abstinence is necessary").

Functional Assessment: Antecedent and Consequent Variables, and Self-Control

Question 21 explicitly asked participants to identify situations that preceded drug use on a five-point Likert scale ("Never", "Rarely", "Sometimes", "Often", and "Always"), which was constructed based on the interviews collected in Study 1. The data are presented in Figure 1. For analytical purposes, the responses "Never" and "Rarely" were grouped together, as were "Often" and "Always".

Figure 1

Chemsex: Antecedents



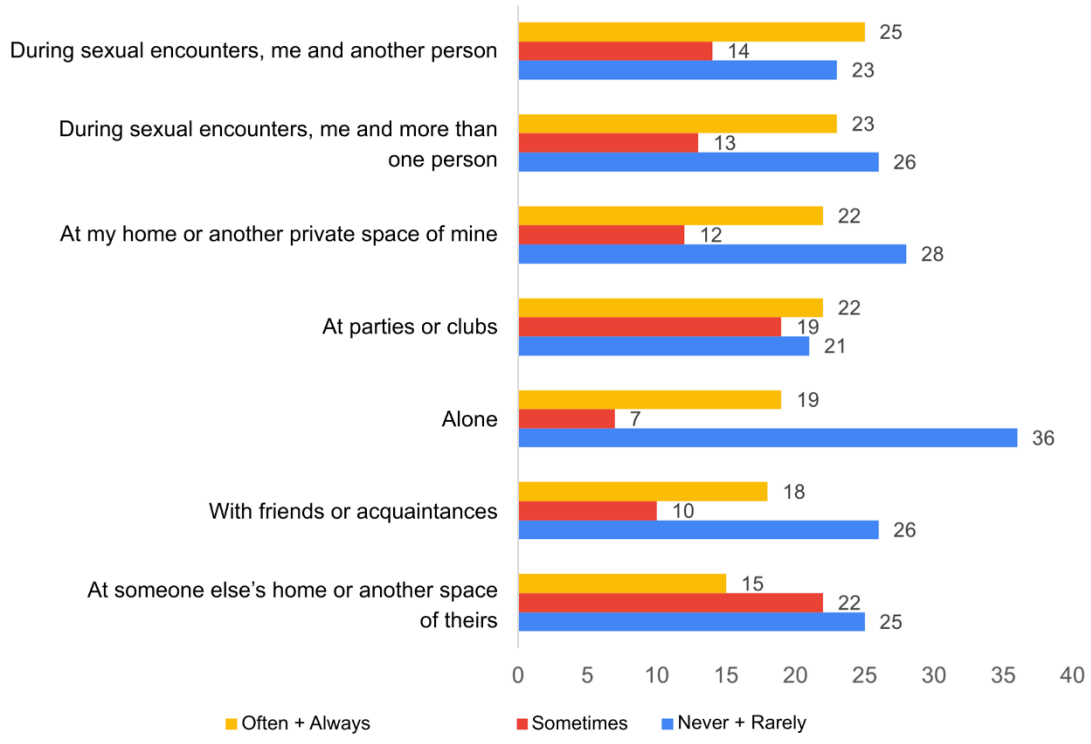
In Figure 1, it is possible to observe that substance offer by a sexual partner, followed by the feeling of emptiness or social isolation and the offer by friends, were the most relevant antecedent variables in the sample for chemsex—in other words, being

offered a substance by someone else was the main antecedent variable reported by participants in Question 21. For the purpose of characterising the "strength" of a variable, we established that a number above the cut-off of 31 in the sum of "Often" + "Always" —based on half of the sample of 62 participants—indicates a strong correlation, while between 20 and 31 indicates a moderate one. In this case, these three variables showed a moderate "strength" or magnitude in relation to chemsex.

Question 24 ("How often do you use the substance(s) in the following contexts?") used the same Likert scale and aimed to identify the environments or contexts in which chemsex/sexualised drug use (SDU) occurred, and whether this use happened alone or with more than one person. The data from this question are summarised in Figure 2. As before, the responses "Never" and "Rarely", and "Often" and "Always", were grouped together.

Figure 2

Chemsex: Contexts of Use



Although it was not explicitly mentioned, the content of this question was part of the mapping of possible antecedent variables related to chemsex, referred to as "contexts". Overall, the results point to use often occurring in social and sexual environments, particularly at parties, nightclubs and sexual encounters (whether one-on-one or group), including occurrences marked as "Sometimes".

In particular, when considering sexual encounters, there was also considerable use in private spaces—notably at the participant's home or another private setting. These variables were moderately correlated with chemsex (below the cut-off of 31 for "Often" + "Always"). It is worth noting that "home or someone else's place" showed a relevant number of occurrences, although with a more modest correlation (only 15 occurrences of "Often" + "Always" and 22 of "Sometimes")—and "Alone" was the option with the highest number of "Never" + "Rarely" responses. Question 25, in turn, asked about other contexts of use, but only one participant answered, mentioning saunas and motels.[11]

Question 30, which was mandatory for all participants, presented an extensive list of positive consequences (possible positive reinforcers) and punitive ones associated with chemsex. Participants were asked to identify the frequency of each using a five-point Likert scale: "Never", "Rarely", "Sometimes", "Often", and "Always". The consequences were divided into two graphs, and the responses "Never" and "Rarely", and "Often" and "Always", were grouped together. Figure 3 presents the data for positive consequences.

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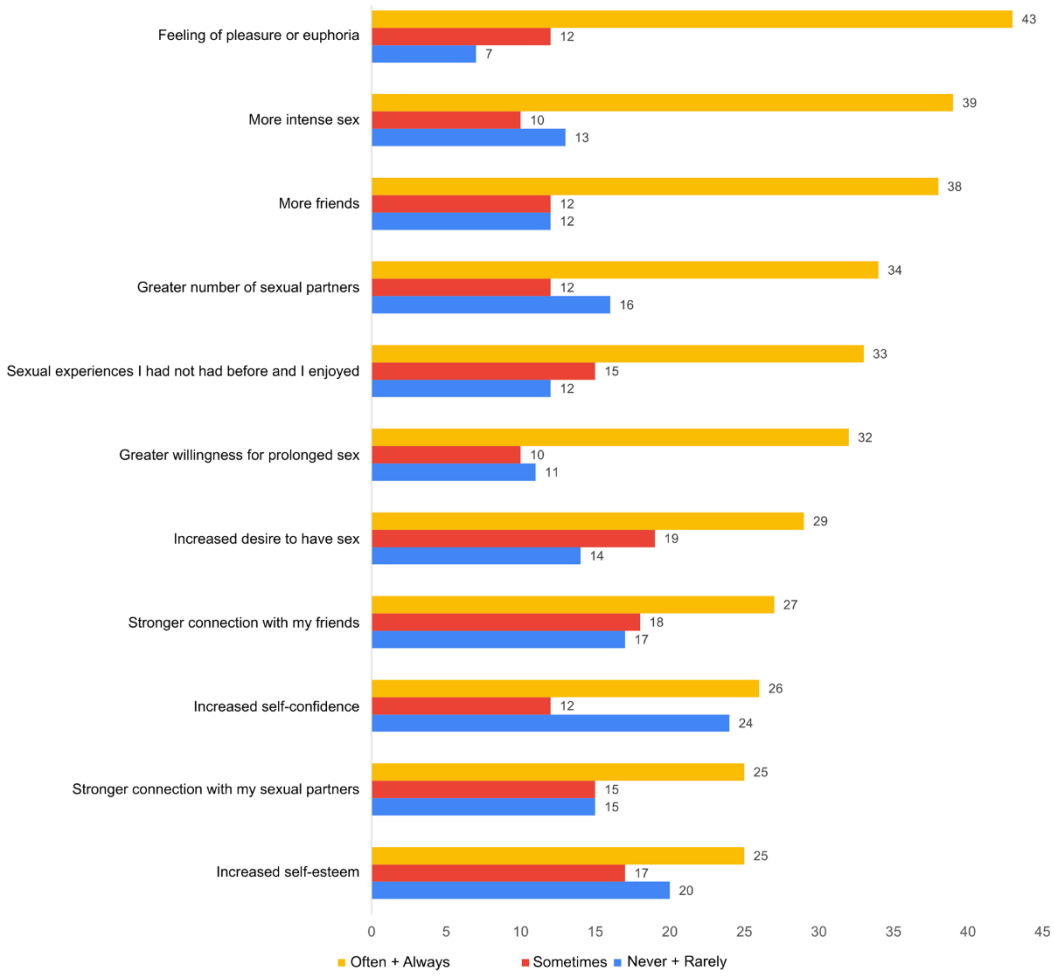
[11] In Brazil, motels (*motéis)* refer not to roadside hotels for travellers but to establishments specifically designed for short-term stays and sexual encounters, often featuring themed rooms and privacy-focused services.

Figure 3

Chemsex: Positive Consequences

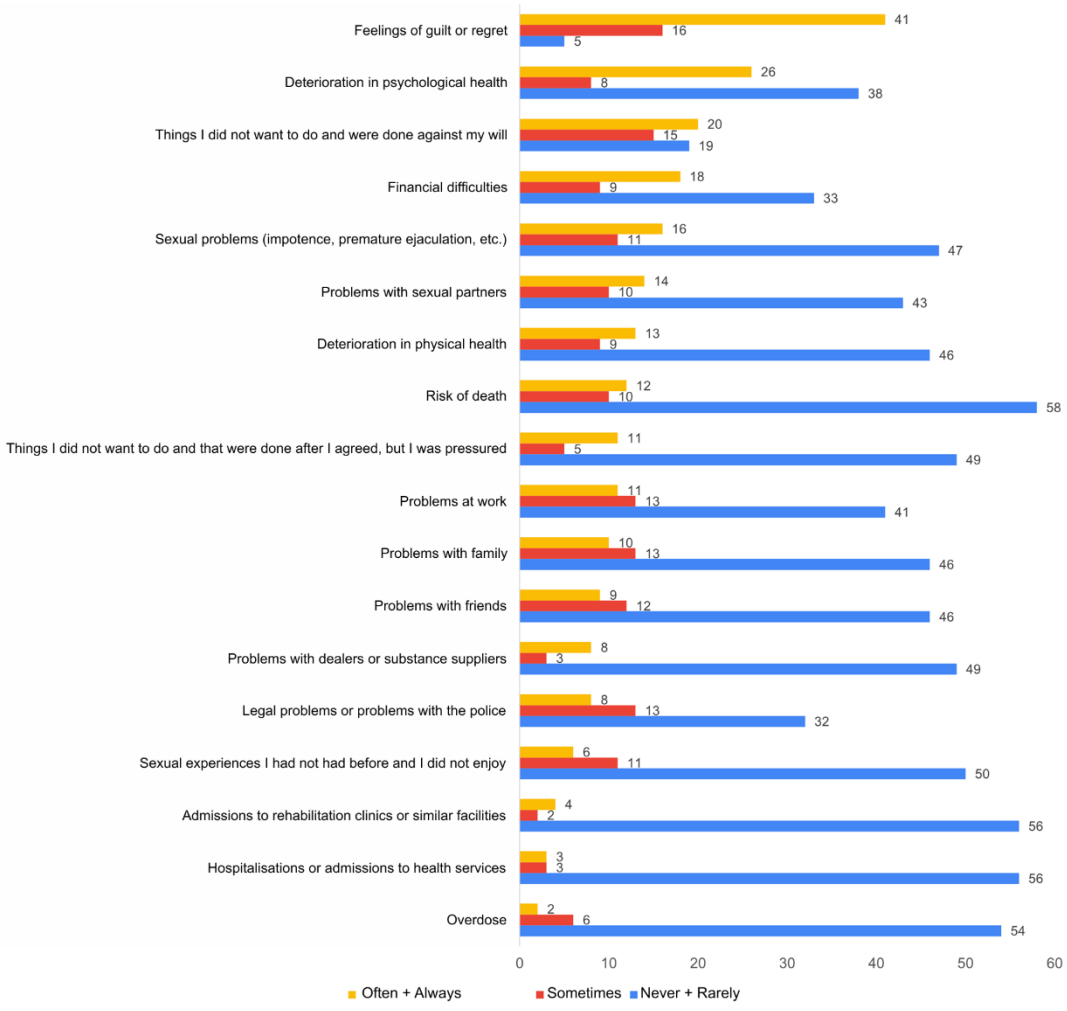


In Figure 3, it can be seen that the most relevant positive reinforcers correlated with chemsex are sensory in nature. These reinforcers include “Feelings of pleasure and euphoria”, followed by “More intense sex”, “More friends”, “Greater number of sexual partners”, novel and reinforcing sexual experiences, and “Greater willingness for prolonged sex”—all of which were reported as “Often” or “Always” above the 31-occurrence cut-off. In general, positive consequences consistently showed moderate to strong correlations, and the frequency of “Never” + “Rarely” responses was a minority in all options. In this regard, “Increased self-esteem” appeared as the weakest correlation, although it still had a majority of responses in the “Often” + “Always” range.

Figure 4 shows the data organised in a similar way for consequences classified as punitive.

Figure 4

Chemsex: Punishments



In Figure 4, the most relevant punitive consequence was “Feelings of guilt or regret”, which constitute an emotional state accompanying the chemsex operant. This was followed by “Deterioration of psychological health”, which we grouped as a possible punitive consequence but, in practice, encompasses a broad category of contingencies with different behavioural outcomes. In third place were sexual practices carried out against the participant’s will. It is worth noting, however, that only “feelings of guilt or

regret" surpassed the cut-off of 31 occurrences. Furthermore, the graph of punitive consequences shows a marked difference compared with possible reinforcers: almost all of them had higher frequencies of "Never" + "Rarely" and relatively low frequencies of "Sometimes", suggesting that in this sample, the perception of chemsex as a behaviour correlated with punishment was significantly less common than that of possible positive reinforcers—with the exception of guilt or regret.

Question 32 ("How do you evaluate the overall impact of substance use on your life?") was another that, using a Likert scale, sought to investigate consequent variables—this time as an "overall impact" in the participant's perception, requiring them to select an option between -2 (very negative) and +2 (very positive), with 0 = neutral. Figure 5 presents a "heat map" that summarises the data and shows a predominant trend toward negative impact (-2 and -1; n = 36), which contrasts with what is discussed in Figure 4. It is possible that this finding stems from internal variables of guilt or regret, possibly under partial control of social punishments or group norms (moral values).

Figure 5

Chemsex: Self-Assessment of Impact on Personal Life

Value (Likert)	Description	*n*
2	Very positive	2
1	Moderately positive	10
-1	Moderately negative	14
0	Neutral	14
-2	Very negative	22

We then sought to investigate whether there was an association between:

1. Self-identifying as a "drug user" or not (Question 18) and evaluating the overall impact of substance use on life as positive or negative (Question 32).

2. Evaluating the overall impact of substance use as positive or negative (Question 35) and considering stopping or reducing use (Question 33).
3. Evaluating the overall impact of substance use as positive or negative (Question 35) and seeking external support to stop or reduce use (Question 34, which was answered only by those who selected "Yes" in Question 33).

To this end, the data from the relevant questions were submitted to Pearson's chi-squared test (χ^2). A statistically significant association was found between evaluating the impact of drug use as negative (points -2 and -1 on the Likert scale) and considering stopping or reducing use—the more negative the perception of the impact, the greater the likelihood of considering stopping or reducing it ($\chi^2 = 16.73$, $p = 0.00023$); and between a negative evaluation of impact and seeking external support ($\chi^2 = 12.11$, $p = 0.0024$).

Finally, other consequences of use reported in the open-ended Question 31 included: impacts on sleep and mood, being kidnapped, robbed, and "hooking up with many guys", not feeling attractive, and changes in behaviour toward family and friends. Only 11 participants added observations about consequences beyond those directly referred to in the questionnaire.

These data should be compared with Question 27, which used the term "motivations" ("Among the options below, which would you say are your main motivations for using these substances in a sexual context?"), referring, in fact, to possible conditioned establishing operations (Langthorne & McGill, 2009). The consolidated data from Question 27 are presented in Table 2.

Table 2

"Motivations" and Chemsex

"Motivation"	*n*	%
Sexual pleasure	50	80,6%
Stress or anxiety reduction	27	43,5%
Greater connection with my sexual partners	26	41,9%
"Going with the flow": everyone uses it, so I do too	18	29,0%
Other	8	12,9%

The data presented in Table 2 appear to support the findings described thus far, indicating that positively reinforced variables related to sex (sexual pleasure = 80.6% and greater connection with partners = 41.9%) are the most frequent and may potentially establish motivating operations (Langthorne & McGill, 2009) for subsequent chemsex behaviours. Notably, however, the presence of stress or anxiety reduction suggests a high occurrence (43.5%) of a reflexive motivating operation (Langthorne & McGill, 2009): stress and anxiety would establish their own removal as a reinforcer in the context of chemsex—and were correlated with negatively reinforced contingencies. The questionnaire, however, did not advance in identifying conditioned aversive stimuli correlated with anxiety or stress.

The data discussed so far enabled the development of a summarised and "cross-checked" indirect functional assessment of the main controlling variables involved in chemsex. The grey tones in Table 3 indicate the correlation between these variables: a strong correlation (above 31 occurrences in responses from the 62 participants) and a moderate correlation (between 20 and 31 occurrences). It is worth noting that, although the questionnaire data indicated a moderate correlation for substance offers made separately by friends and by partners, the combined analysis of both suggests a strong correlation when another person—regardless of their relationship with the participant—provides access to the substance.

Table 3

"Cross-Checked" Indirect Functional Assessment: Main Controlling Variables of Chemsex

Antecedent variables	Response	Consequent variables	Punishments
Seeking greater sexual pleasure	Using substances in a sexual context (chemsex).	Intensification of sexual pleasure	Guilt or regret
Sexual encounters with one or more people		Social reinforcers (more friends, more partners)	
Substance offered by friends or partners			
Reduction of feelings of emptiness or isolation		Novel sexual experiences	Deterioration of psychological health
Reduction of stress or anxiety			
Seeking greater connection with partners		Prolongation of sexual activity	
Parties and nightclubs			Unauthorised sexual practices
Participant's private space			

Note. Light grey: moderate correlation. Dark grey: strong correlation.

According to Table 3, chemsex can be characterised, in the sample of this Study 2, as a practice reinforced by the intensification and prolongation of sexual pleasure—including the experimentation of novel practices—as well as by social reinforcers. Negatively reinforced variables appear, to a moderate extent, in the reduction of aversive sensations (such as stress, anxiety, and social isolation), while the most frequent punitive consequences are related to private events (guilt and regret) and, to a moderate degree, the deterioration of psychological health and the occurrence of sexual practices not authorised by the participant.

Furthermore, in this study, the impacts on psychological health (71.1% among the 45 participants who reported attempts to stop or reduce substance use) and on physical health (66.7%) were the main punitive consequences possibly correlated with the emission of self-control responses, as observed in the section "External Support and Communication," in Table 1 and in the following Discussion.

Discussion

In this Study 2, the main objective was to investigate, both qualitatively and quantitatively, whether and how the same functional categories described in Study 1 ("Chemsex among Gay and Bisexual Men: Functional Assessment of In-Depth Interviews") applied to a larger sample of gay and bisexual men (n = 62) through an indirect functional assessment (Hanley, 2012).

In addition, beyond mapping participants' sociodemographic and behavioural profiles and their substance use patterns, the study aimed to propose communication and support strategies for those interested in reducing or stopping their use. This Discussion addresses these objectives by analysing each of the categories described in Study 1, contrasting the findings of both studies and the specialised literature.

Partnerships and Sexual Health

In Study 1, three participants (P2, P4 and P5) reported multiple sexual partners in the month prior to the interview, ranging from 8 to "more than 20." At the other end of the spectrum, P1 reported having had only one partner—from a strictly monogamous relationship—while P2, P6, and P7 stated they were in a "period of abstinence" from sexual partnerships.

In this study, what can be termed "intermediate numbers" stood out—not as low as a "period of abstinence" but not as high as "more than 20" partners. Although some participants in Study 2 reported numbers in the two-digit range (10 to 30 partners), the majority reported between 1 and 6 partners, according to median, mode, and quartile analyses (e.g., a median of 4 partners in the previous month and a modal value of 5 partners).

The literature has pointed to a correlation between chemsex and multiple sexual partnerships. This is the case, for example, in the study by Hegazi et al. (2017), which

examined the relationship between SDU (and chemsex) and the sexual behaviours of gay, bisexual and other MSM in two London clinics—finding associations between substance use and a higher number of sexual partners compared to those who did not report SDU/chemsex.

However, it is difficult to objectively establish what constitutes "multiple partnerships" within the context of affective–sexual relationships among gay and bisexual men. Population surveys have shown that, as a rule, gay and bisexual men tend to report a higher number of sexual partners compared to men who have sex exclusively with women. Mercer et al. (2016), for instance, using data from the third edition of the National Survey of Sexual Attitudes and Lifestyles (Natsal-3), a large-scale population-based survey conducted in Great Britain, found a median of 17 lifetime partners for MSM, compared to six female partners for heterosexual men. In the five years prior to data collection, 62.7% of men with exclusively heterosexual practices reported only one partner, whereas among MSM the largest percentages were between 5 and 9 partners (22.6%) and more than 10 (35.8%).

Compared with monogamous relationships and the heterosexual population in general, gay and bisexual men indeed tend to have "multiple partnerships." However, if a "baseline" within the population of gay and bisexual men itself is considered to include, for example, between 5 and 10 partners in the previous five years (Mercer et al., 2016), then "multiple partnerships" might be better characterised by numbers above 10—which, in this Study 2, occurred only among a small group of participants (outliers).

Specifically regarding chemsex, the literature has shown a higher number of sexual partners among participants compared to non-participants. Drückler et al. (2018), for example, investigated differences in sexual practices and STI prevalence between chemsex users and non-users in an STI clinic in Amsterdam—and found that chemsex

users (*n* = 866) reported a higher number of sexual partners in the six months prior to data collection than non-users (*n* = 4,059). In the intermediate range of seven to 15 partners in the previous six months, the difference in percentage points between the two groups was not very large (32.6% for chemsex versus 27.1% for non-chemsex), but the gap widened at the extremes: up to three partners (7.6% versus 27.7%, respectively) and 16 or more partners (42.4% versus 16.8%).

Drückler et al. (2018) concluded that chemsex is associated with a higher number of sexual partners. However, the fact that the study was conducted in a clinical setting may limit the generalisability of its findings. Pessina et al. (2025) make a similar argument regarding studies conducted in Italy, and, in agreement, Prah et al. (2016), when investigating sociodemographic and behavioural differences between MSM who participated in the large-scale Natsal-3 survey (Great Britain) and those from convenience samples, concluded that the latter over-represented men who identified as gay and reported a higher prevalence of behaviours with differentiated risk for STIs and HIV/AIDS. According to the authors,

> it is likely that data collected by such convenience surveys reflect a particular cross-section of MSM who are more likely to report greater risk behaviours, STI outcomes and HIV testing than the overall population of MSM and so most likely to benefit from health interventions. (Prah et al., 2016, p. 462)

In this Study 2, substance use in a sexual context was one of the inclusion criteria; therefore, it is not possible to compare the number of partners between chemsex practitioners and non-practitioners. However, the data collected in this sample do not appear to differ significantly from those reported in large-scale studies using the Natsal-3 survey (Mercer et al., 2016; Prah et al., 2016).

Despite possible cultural differences between gay and bisexual men in Brazil and Great Britain, it is plausible that, with a larger *n*, the "average chemsex practitioner" may not differ significantly from the "average non-practitioner gay man" in terms of the number of partners—particularly if we accept a higher "baseline" for defining multiple partnerships, taking into account the specificities of gay and bisexual men. This is a hypothesis that would require further testing, as in this study we employed the recruitment strategies described by Prah et al. (2016), which may lead to the overrepresentation of specific segments of gay and bisexual men.

Regarding sexual partnerships, the occurrence of open and polyamorous relationships—as opposed to monogamous ones—was a noteworthy finding. Although most participants (*n* = 38, 61.3%) were single in the six months preceding the study, only seven out of 24 participants in relationships reported that their relationship was strictly monogamous. The remaining 17 were involved in forms of relationships that allow for more than one sexual partner. This may reflect a trend among chemsex practitioners. De la Mora et al. (2022), for example, found a higher prevalence of open relationships among chemsex practitioners than among individuals who reported substance use in non-sexualised contexts (82% vs. 42%, respectively) in a PrEP program in Barcelona.

Self-reported STIs were also a relevant finding: 50% of participants reported an STI diagnosis within a period ranging from one year to more recently (less than six months), with syphilis being the most frequent. When the time frame was expanded to include any period following chemsex initiation, the percentage rose to 59.7%, again with syphilis standing out (78.4% among those who reported an STI diagnosis after substance use; *n* = 29).

This finding is consistent with the literature, including with regard to the recurrence of syphilis. The aforementioned study by Drückler et al. (2018), for instance,

found a significant association between chemsex practices and diagnoses of chlamydia (odds ratio [OR], 1.6; 95% confidence interval [CI], 1.3–1.9), gonorrhoea (OR, 1.9; 95% CI, 1.6–2.3), and syphilis (OR, 1.6; 95% CI, 1.1–2.4). Similarly, García-Perez et al. (2022), who conducted an observational study between January and June 2019 with 514 gay, bisexual and other MSM patients attending an STI clinic in Barcelona, found associations between chemsex and group sex (OR, 9.8; 95% CI, 4–24), HIV infection (OR, 2.5; 95% CI, 1.1–5.8), PrEP use (OR, 3.2; 95% CI, 1.5–7.1), and the development of gonorrhoea (OR, 3.7; 95% CI, 1.5–8.8) or syphilis (OR, 6.7; 95% CI, 2.4–18.7).

The associations between HIV diagnosis, PrEP use, and chemsex observed by García-Perez et al. (2022) warrant further discussion, as similar results have been found in other studies. Poulios et al. (2024), for example, argue that chemsex appears to be more common among gay, bisexual and other MSM living with HIV. This claim is supported by the literature. Wang et al. (2023), for instance, conducted a systematic review and meta-analysis of 23 articles published between 2010 and 2021 across PubMed, Web of Science, and medRxiv to investigate, in the Asian context, the prevalence of chemsex-related substances and behaviours among MSM, engagement in transactional sex, and the likelihood of practising chemsex among MSM living with and without HIV. The results showed that MSM living with HIV were more likely to engage in chemsex (OR = 3.35, 95% CI 1.57–7.10).

Pessina et al. (2025) conducted a cross-sectional study with 841 MSM in Italy who responded to an anonymous online questionnaire aimed at identifying psychological, social, and health factors associated with perceiving chemsex as "problematic." They found that among chemsex participants (n = 153) there was a higher frequency of STIs compared to non-participants (76.8% vs. 44.9%, $p < .001$), but,

conversely, also higher rates of PrEP use (69.3% vs. 27.9%) and STI vaccination (86.9% vs. 66.2%).

In this study, we obtained similar data: a high prevalence of participants self-reporting as HIV-positive (*n* = 29; 46.8%), 15 of whom reported receiving the diagnosis after starting chemsex. Of these, 25 (86.2% of HIV-positive participants) reported having an undetectable viral load, suggesting adherence to antiretroviral therapy (ART). Among HIV-negative participants, 22 (35.5%) reported using PrEP. On the one hand, the HIV and other STI data (particularly syphilis) in this sample may indicate a greater vulnerability of chemsex participants to these infections (Ayres et al., 2022).[12] On the other hand, the findings related to PrEP use may echo those of Pessina et al. (2025), suggesting a broader uptake of prevention strategies among chemsex participants. This hypothesis, however, would need to be tested in future studies, as the questionnaire did not explore STI prevention strategies or testing frequency—both of which could affect prevalence rates.

Self-Identification, Substance Use and Efforts to Reduce or Stop

In Study 1, self-identification as a "drug user" emerged as a relevant element, which is why it was directly assessed in Study 2.

Most participants self-identified as "drug users" (*n* = 38; 61.3%), and, as in Study 1, this self-identification was correlated with high frequency of use, relapse cycles, and impacts on health and personal life. Perceptions that substance use was under control, occasional or sporadic, and that it had no direct impact on daily life and activities were, in turn, associated with not identifying with this terminology. However, unlike in Study 1, this study did not find significant correlations—that is, statistically significant

[12] The concept of vulnerability is discussed in Ayres (2022) and in the Introduction of this thesis.

associations—between self-identifying as a "drug user" and either negatively evaluating the overall impact of use on one's life or considering stopping or reducing that use.

The picture changes, however, when it comes to associating negative perceptions of the overall impact of substance use with considering stopping or reducing use and seeking external support. As presented in the Results section, both associations were statistically significant—particularly between a self-evaluation of "negative overall impact" and "considering stopping or reducing." A similar finding appears in the study by Pessina et al. (2025), where chemsex participants who perceived the practice as "problematic" reported more aversive consequences ($\chi^2(1) = 14.41$, $p < .001$) and sought professional help more frequently ($\chi^2(2) = 6.4$, $p = .041$).

Souto et al. (2019) discuss the stigma associated with the term "drug user" and suggest replacing it with "person who uses drugs." While this study confirmed the findings of Study 1—that self-identification with the former term is likely related to a history of punishment (from a behaviour-analytic perspective)—and while there was a significant statistical association between self-identifying as a "user" and reporting substance abuse, the terminology itself was not relevant to the declared intention to stop or reduce use or to the likelihood of seeking external support to do so. This contrasts with the strong association between these behaviours and the self-evaluation of overall impact. We agree with Souto et al. (2019) on the importance of using non-stigmatising language. However, our findings suggest that intervention strategies should probably focus more on encouraging users' self-assessment of their substance use and its consequences, regardless of the terminology they adopt.

It is also important to note that 58 participants (93.6% of the sample) reported using more than one substance. Among the 38 participants who self-identified as "drug

users," all reported using more than one substance. In the "non-user" group, 20 out of 24 did so.

Consistent with this finding, the literature shows that the use of more than one substance in chemsex is common. Sewell et al. (2017), for example, refer to this phenomenon as *polydrug use*, reporting prevalences of 23.6% (n = 350) for polydrug use and 21.8% (n = 324) for chemsex in a sample of 1,484 HIV-negative MSM surveyed via questionnaire among 2,680 individuals attending 20 sexual health clinics in the UK between 2013 and 2014.

Font-Mayolas and Calvo (2022) highlight the importance of distinguishing between *concurrent polydrug use* (when more than one substance is used within a period of time but on separate occasions) and *simultaneous polydrug use* (the use of more than one substance "at the same time," i.e., on the same occasion). The questionnaire designed for this study did not explore this topic in depth, but considering potential data on substance interactions over time (Curtos et al., 2020), these variables should be more thoroughly investigated in chemsex research.

Among the substances reported by participants, cocaine was the most frequently mentioned (n = 46; 74.2% of the sample), followed by poppers/rush (n = 43; 69.4%), MDMA, methamphetamine and ketamine. In the study by Pessina et al. (2025) conducted in Italy, poppers and cocaine were also the most commonly mentioned substances in chemsex contexts (n = 128; 83.7% and n = 70; 45.8%, respectively), and, as in this Study 2, MDMA (n = 30; 48.4%) ranked third (n = 48; 31.4%). Methamphetamine—more typically associated with chemsex and more prevalent in other regions, such as Asia (Wang et al., 2023)—was represented by more modest numbers in both this study (n = 20; 32.3%) and that of Pessina et al. (2025) (n = 35; 22.9%). According to Pessina et al. (2025), this indicates that harm reduction interventions for chemsex should be locally

tailored to adapt to the specific cultural, geographical, and substance-use patterns of each population.

However, an important caveat applies to this study. As explained in the Participants section, only two individuals in the sample of 62 accessed the questionnaire via geosocial dating apps (Hornet). The other app mapped for this study, Grindr, did not yield any respondents. Both phenomena may be related to the limited research budget available for recruitment, as paid advertisements directly within the apps would likely have resulted in broader reach than private invitations.

This limitation is important because the literature has highlighted the significant role these apps play in chemsex, as observed in Study 1 of this thesis and discussed by Hegazi et al. (2017), Stuart (2019) and Fernandes (2020), among others. Consequently, the "absence" of participants recruited via these apps may have introduced bias in the reported prevalence of substances (with cocaine, followed by poppers and MDMA, appearing most frequently, and methamphetamine ranking only afterwards). Unfortunately, there is a lack of large-scale national studies estimating the prevalence of each specific substance.

The study by Jalil et al. (2022), conducted online with 3,553 MSM from Manaus, Salvador, Brasilia, Rio de Janeiro and Porto Alegre, maintained cocaine, crack, ecstasy/other amphetamines, ketamine, methamphetamine, GHB and poppers/other inhalants grouped into a single category (stimulant drug use) making it impossible to estimate the prevalence of each substance individually. Future studies in Brazil should address these elements and investigate more deeply which substances are chosen for chemsex in the country—including a deeper examination of the role of cocaine—in order

to respond to Pessina et al.'s (2025) suggestion of accounting for local substance-use patterns when designing interventions.

Indirect Functional Assessment

Compared with Study 1, the functional assessment in this study brought similar elements, but with the added advantage of presenting them more succinctly and "cross-checking" the correlations identified as moderate or strong based on the number of occurrences in the responses from a larger participant sample.

In this study, chemsex emerges more strongly as a social behaviour—not merely because it is shared with other people (a condition that is, in most cases, necessary in a sexualised context), but primarily because the search for connection with partners, the formation of bonds with partners and friends, and the relief from feelings of emptiness and social isolation suggest the existence of a "chemsex community." In this context, reinforcers extend beyond the immediate pharmacological effects of the substances associated with intensified and prolonged sexual pleasure. This finding is consistent with the literature, including Brazilian studies. Santos et al. (2024), for example, based on previous research, state that

> studies conducted in the country suggest that the prevalence of chemsex. . . may be associated not only with the pursuit of an intense sexual experience itself but also with overcoming psychological barriers, inhibition, and social stigma . . . Moreover, chemsex emerges as an alternative to facing challenges such as discrimination, social isolation, and internal conflicts linked to sexuality. (p. 590)

Studies such as those by Smith and Tasker (2018), Jaspal (2020), and Hille et al. (2024) are among those that have addressed, at the international level, the issue of group social relations associated with chemsex. Smith and Tasker (2018) conducted qualitative interviews with six chemsex participants, analysed through a life-course perspective, and

concluded that, among other factors, the development of participants' sense of identity and their desire to belong to a gay community were significant motivations for engaging in chemsex.

A similar finding is presented in one of the two case studies described by Jaspal (2020), in which the participant "James" reports that both the sense of belonging and the pressure and acceptance from his circle of friends were important elements in his decision to engage in chemsex. In Fernandes (2020), one of the interviewees also stated that the chemsex friendship circle was highly relevant in his life—and that returning to loneliness and isolation, without the friends he had made during chemsex, was one of the most challenging aspects of his treatment and recovery.

Finally, Hille et al. (2024), in their analysis of support networks among MSM engaged in chemsex in Germany, concluded that the social environment of chemsex participants plays a role in *shaping* their experiences.

These findings suggest, on the one hand, the importance of adopting a community-based approach in chemsex care and prevention strategies—one that considers not only the weakening of support networks and social circles during periods of more problematic use (as reported by participants P1, P6 and P7 in Study 1, who even lost family support and housing) but also the similar consequences that can arise when bonds formed *through chemsex* are lost during treatment and recovery. This adds a layer of complexity to adherence among those seeking external support. From a behaviour-analytic perspective, future research should further explore these social variables and their functions in the reinforcement processes that sustain chemsex behaviour.

Self-Control

Another important finding from the functional analysis conducted in this Study 2 concerns the difference in "strength" between possible reinforcing variables and aversive

and/or punitive consequences. Skinner (1953) discusses that punishment—except for the procedure through which it is applied—is not diametrically equivalent to reinforcement in its effects, whether positive or negative (asymmetry). However, for the establishment of self-control, it seems relevant that the same response class produces conflicting consequences, both reinforcing and aversive/punitive.

For Skinner (1953), self-control originates from operant contingencies in which a single response class produces at least two conflicting consequences: one reinforcing and immediate, and another aversive and delayed, which results from a punitive contingency and whose aversive effects—due to pairing—are experienced from the very moment the response class is emitted. Thus, the Skinnerian definition of self-control suggests that, at least partially, the aversive properties of the consequences correlated with the response class producing the "conflict" compete with reinforcing variables. In the most frequent findings of this study, however, it is evident that, within the participant sample, aversive-punitive control tends to be weak compared with the positively reinforced control of chemsex (Table 3), which may indicate challenges in establishing self-control strategies among participants.

In the sample, when punishments accumulate, individuals begin to associate their frequency of use with the term "abusive" and with the stigmatising label "drug user". More importantly, there was a statistically significant association between a negative evaluation of the overall impact of chemsex and considering reducing or ceasing use, as well as seeking external support.

This finding may introduce complexity into self-control in the context of chemsex, since intervention techniques based on aversive control (as suggested by the negative-impact evaluation data) are not recommended *per se* and are potentially less effective (Skinner, 1953). Therefore, there is a need to arrange positive competing

contingencies with greater potential to “overcome” substance use among individuals seeking to stop or reduce their use.

This may point towards the adoption of reinforcement-based strategies such as those analysed by Avery (2011) and Fazzino et al. (2019), particularly the combination of contingency management (CM) and community reinforcement approach (CRA), which could also mitigate the loss of social bonds that occurs during treatment—as suggested by the findings of this study. Future investigations focused on self-control should explore these issues in greater depth.

External Support and Communication

The analysis of open-ended responses to Question 37 revealed a rich set of expectations and recommendations regarding how services aimed at individuals seeking help to stop or reduce substance use in chemsex contexts should be structured. These results complement and deepen the qualitative findings of Study 1 by providing a broader perspective on the preferences and priorities of chemsex users themselves.

In particular, participants expressed a desire for safe spaces free from punitive audiences (Skinner, 1957), where the positive reinforcers correlated with substance use are acknowledged; for services that use language appropriate to the gay and chemsex contexts (“speaking the language of the community”); for multidisciplinary teams; for flexible schedules and access options (including online support); for integration with sexual health services; and for peer support and continuous assistance, even in the event of relapse. In addition, a strong preference for harm reduction strategies emerged among participants.

It is noteworthy how these findings align with the recommendations proposed by Souza et al. (2023), which include: (a) considering the holistic experience of chemsex; (b) promoting harm reduction; (c) providing access to health education and information;

(d) implementing online interventions and active outreach in chemsex venues; (e) raising awareness around the stigma associated with chemsex; and (f) in the Brazilian context, fostering closer collaboration between the Psychosocial Care Network (RAPS) and HIV/STI Testing and Counselling Centres (CTAs). However, the authors point out that Brazil still appears insufficiently prepared to meet this demand (Souza et al., 2023).

In both the present study and Study 1, organisations such as Narcotics Anonymous were cited as fundamental. It is particularly noteworthy, however, that participants in this sample often reported simultaneous use of different types of support —for example, attending Narcotics Anonymous meetings, consulting psychiatrists and psychologists, and accessing Alcohol and Drug Psychosocial Care Centres (CAPS AD). This pattern may indicate attempts to independently build the holistic and integrated approach that should ideally be provided by a reference service.

Taken together, these findings, alongside others discussed in this chapter, suggest that an initial communication and engagement strategy should involve the creation of a persona (Dam & Siang, 2025). Persona C1, representative of a potentially recurring profile of users interested in treatment and support services focused on chemsex, is presented in Figure 6, based on findings from both the present study and Study 1.

Figure 6

Communication Strategy: Persona C1

Age:	36 years
Sex/Gender:	Male/Male
Sexual orientation:	Gay man (Homosexual)
Residence:	Large city (São Paulo)
Race/Ethnicity:	White
Income:	≈ R$ 4,000
Education:	Completed tertiary education
Occupation:	Professor
Relationship status and partnerships:	Single, around five partners per month. Frequent use of geosocial networking apps for hookups
HIV status and sexual health:	HIV-positive, undetectable, on ART. Has had syphilis and reports gonorrhoea more than once
Sexual practices:	Engages in chemsex at private parties and during casual hookups, the latter usually arranged via geosocial apps. Identifies sexual pleasure and connection as primary motivations and participates in social practices that are considered fetish-oriented.
Support network:	Limited. Reports frequent feelings of isolation and anxiety. Has chemsex-using partners and friends with whom he keeps active contact
Substance use:	Polydrug user. Reports cocaine as his main substance, but—open to experimentation—also uses poppers, ecstasy and methamphetamine with some regularity. Notes his frequency of use has been increasing and is concerned about "overdoing it"
Seeking external support:	Has tried to cut down on his own but now feels the need for specialised support. Considering Narcotics Anonymous, recommended by an "ex-fling" he has since lost contact with
Wants and needs:	Wants to feel welcomed, not judged; would like easy, anonymous access and language that matches his everyday speech

Note. Image generated by artificial intelligence (AI)—ChatGPT o4-mini.

Subsequently, based on Table 3 of this study (the cross-checked indirect functional assessment), we identified possible antecedent and consequent variables of chemsex and cross-checked them with the findings on participants' reported experiences and their descriptions of what they considered adequate services. This process aimed to propose a set of communication and support strategies tailored to Persona C1.

Table 4

Suggested Communication and Support Strategies (Guidelines)

Indirect Functional Assessment		Communication and Support Strategies
Antecedent Variables Isolation, anxiety, geosocial networking apps, parties, friends and sexual partners offering substances	**C1**	• Consider the context of vulnerability of gay and bisexual men to substance abuse in chemsex (Ayres, 2022) • Campaigns and content on social media platforms (Instagram, Twitter/X, TikTok, OnlyFans, Privacy) • Partnerships with geosocial networking apps for hookups (such as Hornet, Grindr, Scruff) • Partnerships with actors already working with chemsex-related issues, such as Narcotics Anonymous and CAPS AD • Partnerships with gay social venues and themed parties, including active outreach (Souza et al., 2023) • Streaming channels and podcasts focused on gay topics • Use of gay influencers who address psychological health, sexual relationships and harm reduction • Mapping of populations potentially "at risk" of engaging in chemsex, especially young adult gay and bisexual men living in large cities and with limited social and emotional support networks
Responses Chemsex in private settings, either one-to-one or with more than one partner at the same time; polydrug use		• Avoid technical jargon and any legal-moral or purely biomedical approach (Souto et al., 2019) • Map the substances most commonly used locally in chemsex and propose strategies tailored to local use patterns (Pessina et al., 2025)
Reinforcers Intense sexual pleasure, connection, social belonging, fulfilment of fetishes		• Use direct, informal and relatable language, including slang terms and expressions commonly used within the gay community and the chemsex context • Acknowledge and address the positive experiences associated with chemsex • Implement actions to mitigate the loss of social reinforcers (such as support networks of friends and partners) as a direct consequence of treatment or reduced use
Punitive consequences Guilt, relapses, unwanted sexual practices, STIs		• Engage with former chemsex participants who openly share their experiences, either in person or through interaction platforms (e.g., WhatsApp, Patreon, X) • Provide continuous support, even during relapse episodes • Ensure anonymous and easy access via phone and online platforms (e.g., WhatsApp, Discord, Telegram) • Promote peer-led initiatives involving individuals with a history of chemsex who are now in harm reduction or abstinence • Offer rapid HIV/STI testing and PrEP in the same setting as substance use support services • Provide STI treatment and prevention (including vaccination) at the same site as substance use support services • Develop prevention and treatment campaigns for STIs specifically focused on chemsex participants and contexts • Support autonomy and self-regulation by encouraging individuals to self-assess the frequency and impact of their substance use • Avoid narratives focused solely on the "destruction" caused by substances, as well as stigmatising terminology • Provide harm reduction strategies for chemsex and for physical, sexual and psychological health (e.g., information on safer dosages and substance interactions, strategies to avoid STI risk situations, psychotherapy options, blood tests, physical and dental check-ups, etc.) • Empower and train participants to recognise and protect themselves from potential violence, including sexual violence

Conclusion

This study sought to broaden the investigation of behavioural contingencies involved in chemsex among gay and bisexual men by conducting an indirect functional assessment based on a larger sample than that of Study 1.

By identifying, among 62 participants, antecedent variables such as feelings of social isolation, anxiety, and the offering of substances by friends and partners, as well as positive reinforcers such as intensified sexual pleasure, the building of social bonds, and the reduction of aversive sensations, the study frames chemsex as a behaviour maintained by contingencies that go beyond the immediate physiological effects on the body.

Furthermore, the analysis of responses to Question 37 made it possible to outline clear expectations regarding the fundamental characteristics of support services for chemsex participants, including the need for a non-punitive audience, the use of language contextualised to the gay and chemsex universes, the provision of continuous support even in cases of relapse, and the integration of these services with sexual health promotion actions.

From the analysis of the findings in this study compared with those of Study 1, and from the author's experience in constructing personas and communication strategies, it was possible to design communication and support guidelines for services and organisations aimed at people engaging in chemsex.

However, some limitations must be considered when interpreting the results and proposing interventions. Firstly, the sample was limited to volunteers who accessed the online questionnaire, which may have introduced a selection bias in favour of individuals more familiar with digital environments and more likely to have internet access and engage with online gay communities. Another potential bias, as discussed earlier, relates

to the limited participation of individuals recruited from geosocial networking apps, given their significant role in chemsex. Moreover, although participants from 12 Brazilian states were represented, there was a marked predominance of respondents from the Southeastern Region, particularly the city of Sao Paulo. Future research should implement strategies to increase participant diversity and establish partnerships for study dissemination through these apps.

It is also important to note that the indirect functional assessment relied on self-reports which, while suitable for the aims of this study, do not guarantee accuracy in the frequency or intensity of reported behaviours and are subject to memory biases and social variables. How to avoid self-reports and use more objective measures (such as direct observation) remains unclear, as chemsex is a behaviour that occurs in highly intimate contexts. Future studies, however, face the challenge of exploring approaches that do not rely solely on participants' verbal reports.

Furthermore, although the instrument (Questionnaire: Chemsex) covered various substances associated with chemsex, the categorisation grouped together nuances of use that may vary according to dosage, combinations, and specific contexts—aspects that warrant more detailed investigation to understand subtle differences between polydrug user profiles.

The study also did not directly address participants' self-control strategies or the duration of external support among those who sought it. These topics, alongside investigations into strategies that promote competing positive reinforcement versus aversive control in the context of chemsex, should be addressed in future research. Additionally, the questionnaire did not advance in identifying conditioned aversive stimuli related to anxiety or stress, which emerged as possible reflexive motivating operations, again suggesting the need for more in-depth studies.

Finally, the nature of the study, based on self-reports and indirect assessment, prevents the establishment of causal relationships between the functional variables measured, limiting the findings to strong or moderate correlations. For future research, we recommend, first and foremost, the adoption of longitudinal designs that allow tracking use and abstinence trajectories over time in order to empirically test the evolution of control variables identified in the indirect functional assessment.

In parallel, it would be relevant to develop complementary qualitative investigations that explore subjective narratives about chemsex, deepening the understanding of antecedent and consequent variables—including, and especially, social ones—as well as topics such as self-protection strategies and community dynamics.

Other suggestions for future studies include: analysing the variables of price and availability of substances to more effectively map typical chemsex characteristics in Brazil and its most prevalent substances; addressing the loss of social bonds with friends and partners engaged in chemsex during treatment; experimentally investigating whether prevention strategies for STIs achieve greater reach among chemsex participants than non-participants; and, among participants, examining the strategies they use and the frequency of their STI testing.

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Appendix A — Informed Consent Form (Study 2, Brazilian Portuguese)

Esta pesquisa oferece riscos mínimos aos participantes, podendo ocorrer algum cansaço em responder ao questionário ou desconforto pelo conteúdo das perguntas.

Contudo, se você se sentir desconfortável de alguma forma, **poderá interromper sua participação a qualquer momento, sem penalização alguma**, bastando fechar a janela do formulário no seu navegador. Não haverá nenhum tipo de despesa, e qualquer tipo de dano diretamente resultante de sua participação na pesquisa será indenizado.

Esclarecemos, ainda, que as **informações de cada participante são confidenciais**, e a autoria das respostas é **anônima e sigilosa**. Tudo que você responder será utilizado para **fins acadêmicos**, podendo ser apresentado em congressos, publicações e outras formas de divulgação nacional ou internacional, **sem identificação do autor das respostas**.

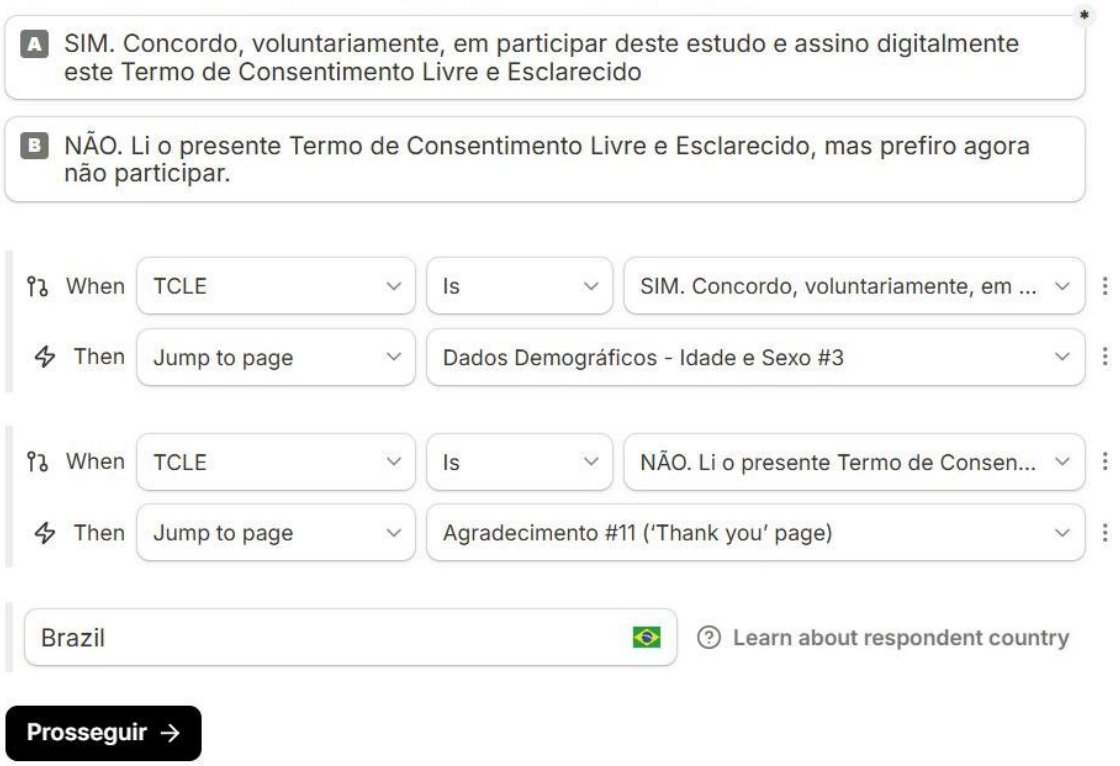
Caso tenha alguma dúvida sobre a pesquisa, você poderá entrar em contato com a coordenadora responsável pelo estudo, **Profa. Dra. Paula Suzana Gioia**, que pode ser localizada no **Programa de Pós-Graduação em Psicologia Experimental: Análise do Comportamento da PUC-SP**, na Rua Bartira, n.º 387, Perdizes, em São Paulo/SP, CEP 05009-000, telefone (11) 3675-7081, das 9h às 18h, pelo e-mail pgioia@pucsp.br ou por telefone (11) 99186-7465; ou entrar em contato com o pesquisador responsável, **João Marinho de Lima Neto**, pelo e-mail joao.marinhosp@gmail.com ou pelo telefone (11) 99395-4160, a qualquer momento.

Sua **participação voluntária** é importante e gerará informações úteis para o avanço dos estudos de psicologia experimental sobre o chemsex.

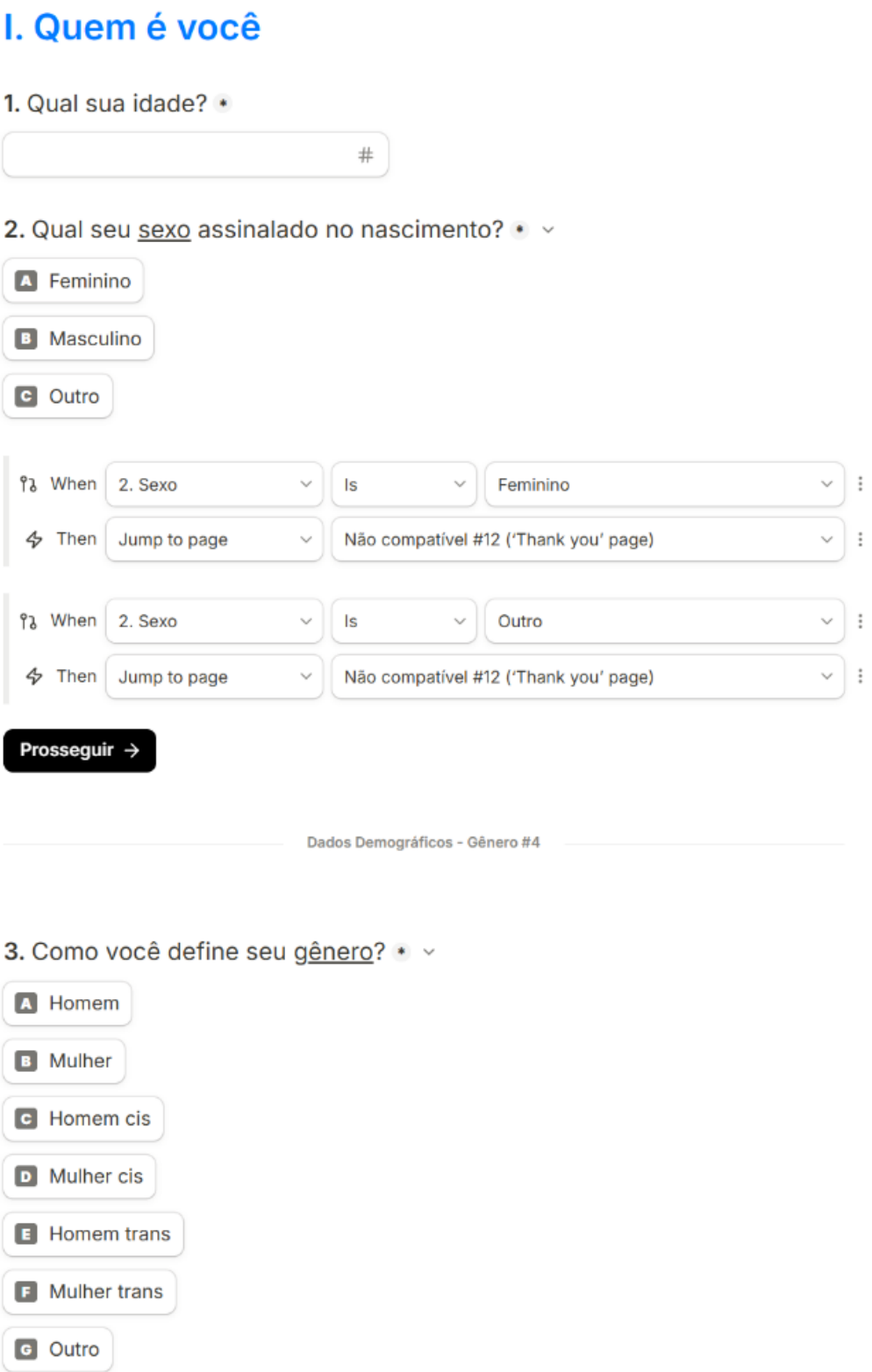
Esta pesquisa está sendo conduzida com aprovação do **Comitê de Ética em Pesquisa da PUC-SP** — Certificado de Apresentação de Apreciação Ética (CAAE) nº 83532924.1.0000.5482 —, que tem como principais atribuições: (1) orientar pesquisadores quanto a aspectos éticos e metodológicos de suas pesquisas; e (2) receber dos voluntários das pesquisas ou de qualquer outra pessoa, denúncias de abusos ou de fatos adversos relacionados a estudos realizados no âmbito da PUC-SP.

O **Comitê de Ética em Pesquisa** (CEP) é um órgão que visa à proteção dos participantes de pesquisa do Brasil, de forma coordenada e descentralizada por meio de um processo de acreditação. O Comitê de Ética em Pesquisa da PUC-SP (telefone: 11- 3670-8466) pode ser localizado no térreo do Edifício Reitor Bandeira de Mello (Prédio Novo), na sala 63-C, na Rua Ministro Godói, 969 - Perdizes - São Paulo, SP - CEP: 05015-001, ou pode ser contatado pelo email cometica@pucsp.br.

Acredito ter sido suficientemente informado(a) a respeito da pesquisa. Ficam claros para mim os propósitos do estudo, os procedimentos, as garantias de sigilo e anonimato, os benefícios para mim, os riscos mínimos e a isenção de despesas.



Appendix B — Questionnaire: Chemsex (Questions, Structure and Logic as Published on Tally, Brazilian Portuguese)



When 3. Gênero Is Mulher
Then Jump to page Não compatível #12 ('Thank you' page)

When 3. Gênero Is Mulher cis
Then Jump to page Não compatível #12 ('Thank you' page)

When 3. Gênero Is Homem trans
Then Jump to page Não compatível #12 ('Thank you' page)

When 3. Gênero Is Mulher trans
Then Jump to page Não compatível #12 ('Thank you' page)

When 3. Gênero Is Outro
Then Jump to page Não compatível #12 ('Thank you' page)

Prosseguir →

Dados Demográficos - Orientação Sexual #5

4. Como você define sua orientação sexual? *

A Homossexual

B Bissexual

C Heterossexual

D Outra

When 4. Orientação sexual Is Heterossexual
Then Jump to page Não compatível #12 ('Thank you' page)

When 4. Orientação sexual Is Outra
Then Jump to page Não compatível #12 ('Thank you' page)

Prosseguir →

5. Você já fez uso de substâncias ("drogas") em contexto sexual; por exemplo: durante o sexo com seu namorado, parceiro casual, orgia, pegação etc.? *

A Não

B Sim

When 5. Uso de substânc... Is Não

Then Jump to page Não compatível #12 ('Thank you' page)

Prosseguir →

Dados Demográficos - Conclusão #7

6. Como você define sua raça/etnia? *

A Branco

B Preto

C Pardo

D Amarelo

E Indígena/Povos originários

F Outra

7. Em qual cidade e estado você mora? Se você estiver em outro país, identifique-o na opção "Outro (exterior)" no estado.

Cidade: *

Estado: *

AC - Região Norte

AL - Região Nordeste

AM - Região Norte

AP - Região Norte

- BA - Região Nordeste
- CE - Região Nordeste
- DF - Região Centro-Oeste
- ES - Região Sudeste
- GO - Região Centro-Oeste
- MA - Região Nordeste
- MG - Região Sudeste
- MS - Região Centro-Oeste
- MT - Região Centro-Oeste
- PA - Região Norte
- PB - Região Nordeste
- PE - Região Nordeste
- PI - Região Nordeste
- PR - Região Sul
- RJ - Região Sudeste
- RN - Região Nordeste
- RO - Região Norte
- RR - Região Norte
- RS - Região Sul
- SC - Região Sul
- SE - Região Nordeste
- SP - Região Sudeste
- TO - Região Norte
- Outro (exterior)

8. Como você definiria a cidade onde você mora? *

- A Grande cidade
- B Cidade de médio porte
- C Cidade pequena ou área rural

9. Qual sua renda individual aproximada em R$? Este é um dado importante, mas, se você preferir não responder, basta deixar em branco.

#

10. Qual sua renda familiar aproximada em R$? Este é um dado importante, mas, se você preferir não responder, basta deixar em branco.

#

11. Qual sua formação acadêmica? Considere a última que você completou. *

- A Ensino fundamental
- B Ensino médio
- C Ensino superior
- D MBA ou especialização
- E Mestrado
- F Doutorado

12. E a sua profissão? Se preferir não responder, é só deixar em branco.

=

Ir para seção 2 de 4 →

II. Vida Afetiva e Sexual

13. Considere sua vida afetiva nos últimos 6 meses. Você atualmente se considera... *

- A Solteiro
- B Relação estável, com 1 só parceiro fixo: relação fechada
- C Relação estável com 1 só parceiro fixo, mas há outros parceiros: relação aberta
- D Relação estável com mais de uma pessoa: poliamor, fechada
- E Relação estável com mais de uma pessoa e há outros parceiros: poliamor, aberta
- F Outro

14. Quantos parceiros sexuais, do mesmo sexo, você teve no último mês, aproximadamente? *

#

15. Sobre prevenção e tratamento ao HIV, qual opção abaixo melhor descreve sua situação? *

- A Negativo e uso PrEP
- B Negativo e não uso PrEP
- C Positivo, indetectável, ou carga viral menor que 200
- D Positivo, em tratamento e carga viral maior que 200
- E Positivo, não faço tratamento, carga viral maior que 200
- F Não sei
- G Outra

16. E você já foi diagnosticado com alguma infecção sexualmente transmissível (IST) nos últimos 6 meses? Marque todas as opções que se aplicam. *

- [ ] Não, nunca tive IST
- [ ] Não nos últimos 6 meses, mas tive IST entre 1 ano e +6 meses atrás
- [ ] Não nos últimos 6 meses, mas tive IST há, pelo menos, mais de 1 ano
- [ ] Sim, tive diagnóstico de sífilis no período citado, de até 6 meses
- [ ] Sim, tive diagnóstico de gonorreia no período citado, de até 6 meses

- [ ] Sim, tive diagnóstico de hepatite B no período citado, de até 6 meses
- [ ] Sim, tive diagnóstico de hepatite C no período citado, de até 6 meses
- [ ] Sim, tive diagnóstico de HPV no período citado, de até 6 meses
- [ ] Sim, tive diagnóstico de mpox (monkey pox) no período citado, de até 6 meses
- [ ] Outra

17. Se você já teve diagnóstico de HIV e/ou outras ISTs, *independentemente se foi há 6 meses ou mais*, identifique aquelas com que você foi diagnosticado depois de começar a usar substâncias no contexto sexual.

Se não teve nenhuma IST ou o diagnóstico foi antes de começar a usar substâncias, basta deixar em branco.

- HIV
- Sífilis
- Gonorreia
- Hepatite B
- Hepatite C
- HPV
- Mpox
- Outra

Ir para seção 3 de 4 →

III. Hábitos e Usos de Substâncias

18. Pessoalmente, você se considera um "usuário de drogas"? *

A Não

B Sim

When 18. Considera-se u... Is not empty

Then Show blocks 19. Por quê? Gostaríamos de ouvi-lo, mas, se não quiser ...

19. Por quê? Gostaríamos de ouvi-lo, mas, se não quiser responder, basta deixar em branco.

20. Em relação à(s) substância(s) que você já usou no contexto sexual, quais foram elas? Marque todas que se aplicam. *

- [ ] GHB ("G", "Gina", "Gisele")
- [ ] Metanfetamina ("Crystal", "Tina", "Slam", "Meta", "Ice")
- [ ] MDMA ("Ecstasy", "Bala")
- [ ] Cocaína ("Padê", "Pó")
- [ ] Quetamina ("Key")
- [ ] Poppers/Rush
- [ ] Outra

21. Com que frequência as seguintes situações já antecederam o seu uso dessa(s) substância(s) no contexto sexual?

No celular, deslize para a esquerda para ver todas as opções. *

	Nunca	Raramente	Às vezes	Muitas vezes	Sempre
Eventos estressantes (ex.: discussões, problemas no trabalho)	○	○	○	○	○
Eventos traumáticos (ex.: morte de uma pessoa, diagnósticos impactantes de doenças, acidentes)	○	○	○	○	○

Conflitos interpessoais	○	○	○	○	○
Solidão, vazio ou isolamento social	○	○	○	○	○
Participação em festas ou baladas	○	○	○	○	○
Oferecimento da substância por parceiros sexuais	○	○	○	○	○
Oferecimento da substância por amigos	○	○	○	○	○

22. Além das situações anteriores, tem mais alguma que você queira mencionar que antecede o seu uso dessa(s) substância(s) no contexto sexual? *

A Não

B Sim

When 22. Além das situaç... Is Sim

Then Show blocks 23. Qual situação? Sua resposta é importante!, 23. Se si...

23. Qual situação? Sua resposta é importante! *

24. Com que frequência você utiliza a(s) substância(s) nas seguintes ocasiões?

No celular, deslize para a esquerda para ver todas as opções. *

	Nunca	Raramente	Às vezes	Muitas vezes	Sempre
Em festas ou baladas	○	○	○	○	○
Em encontros sexuais, eu e outra pessoa	○	○	○	○	○
Em encontros sexuais, eu e MAIS de uma pessoa	○	○	○	○	○
Com amigos ou conhecidos	○	○	○	○	○
Sozinho	○	○	○	○	○
Na minha casa ou outro ambiente privado meu	○	○	○	○	○

Na casa de outra pessoa, ou outro local dela	○	○	○	○	○

25. Além das ocasiões de uso anteriores, tem mais alguma que você queira mencionar? *

A Não

B Sim

When 25. Além das ocasi... Is Sim

Then Show blocks 26. Qual ocasião? Sua resposta é importante!, 26. Se si...

26. Qual ocasião? Sua resposta é importante! *

27. Entre as opções a seguir, quais você diria que são suas principais motivações para usar essas substâncias no contexto sexual? Marque todas que se aplicam *

- [ ] Prazer sexual
- [ ] Redução de estresse ou ansiedade
- [ ] Maior conexão com meus parceiros sexuais
- [ ] "Seguir o fluxo": o pessoal usa, e eu vou junto
- [ ] Outra

28. Pessoalmente, você considera que faz um uso abusivo da(s) substância(s)? *

A Não

B Sim

When 28. Considera faze... Is not empty

Then Show blocks 29. Por quê? Sua resposta é muito importante!, 29. Por q...

29. Por quê? Sua resposta é muito importante! *

Ir para última seção →

Consequências do uso e punições #10

IV. Consequências

30. Na lista abaixo, tem uma série de possíveis consequências do uso de substâncias que checamos com usuários com quem conversamos antes, tanto positivas quanto negativas.

Leia com bastante atenção e assinale com que frequência você as experiencia por conta do seu uso no contexto sexual.

No celular, deslize para a esquerda para ver todas as opções. *

	Nunca	Raramente	Às vezes	Muitas vezes	Sempre
Sensação de prazer ou euforia	○	○	○	○	○
Aumento da autoconfiança	○	○	○	○	○
Aumento da autoestima	○	○	○	○	○
Vontade de transar mais	○	○	○	○	○
Maior conexão com meus parceiros sexuais	○	○	○	○	○
Maior conexão com meus amigos	○	○	○	○	○
Sexo mais intenso	○	○	○	○	○
Maior disposição para sexo prolongado ("aguento mais")	○	○	○	○	○
Mais amigos	○	○	○	○	○
Maior número de parceiros sexuais	○	○	○	○	○
Sensação de culpa ou arrependimento	○	○	○	○	○
Deterioração na saúde física	○	○	○	○	○

Deterioração na saúde psicológica	○	○	○	○	○
Dificuldades financeiras	○	○	○	○	○
Problemas no trabalho	○	○	○	○	○
Problemas com a família	○	○	○	○	○
Problemas com amigos	○	○	○	○	○
Problemas sexuais (impotência, gozar rápido demais etc.)	○	○	○	○	○
Problemas com parceiros sexuais	○	○	○	○	○
Experiências sexuais que não tinha tido antes — e GOSTEI de ter	○	○	○	○	○
Experiências sexuais que não tinha tido antes — e NÃO gostei de ter	○	○	○	○	○
Coisas que não queria fazer e foram feitas CONTRA a minha vontade	○	○	○	○	○
Coisas que não queria fazer e foram feitas depois que autorizei, mas fui pressionado	○	○	○	○	○
Problemas legais ou com a polícia	○	○	○	○	○
Overdose	○	○	○	○	○
Risco de morte	○	○	○	○	○
Problemas com dealers ou fornecedores de substâncias	○	○	○	○	○
Internações em hospital ou serviço de saúde	○	○	○	○	○
Internações em clínicas para dependência ou estabelecimento similar	○	○	○	○	○

When 30. Na lista abaixo, ... Is not empty

Then Show blocks 31. Tem mais alguma consequência, positiva ou negativa...

31. Tem mais alguma consequência, positiva ou negativa, que você já experienciou e não listamos? Se quiser compartilhar, este espaço é seu. Se não, é só deixar em branco.

32. Como você avalia o impacto geral do uso de substâncias na sua vida? *

-2 -1 0 1 2

Muito negativo — Neutro — Muito positivo

33. Você já considerou parar ou reduzir o seu uso? *

A Não

B Sim

When 33. Considerou par... Is Sim

Then Show blocks 34. Já procurou ajuda externa para isso, num serviço, te...

34. Já procurou ajuda externa para isso, num serviço, terapia, organização, grupos de ajuda etc.? *

A Não

B Sim

When 34. Se parar/reduzi... Is Sim

Then Show blocks 35. Você poderia compartilhar sua experiência? Onde bu...

35. Você poderia compartilhar sua experiência? Onde buscou ajuda e como foi? Se não quiser responder, é só deixar em branco.

36. E quais são ou foram os principais motivos para VOCÊ querer parar ou reduzir o uso de substâncias? Marque todos que se aplicam. *

- [ ] Impactos na saúde física
- [ ] Impactos na saúde psicológica
- [ ] Receio de pegar HIV
- [ ] Receio de pegar outra IST
- [ ] Pressão familiar
- [ ] Pressão social
- [ ] Dificuldades financeiras
- [ ] Dificuldades no trabalho
- [ ] Dificuldades de cunho legal/criminal
- [ ] Outro

37. Para terminar, como deveria ser, na sua opinião, o atendimento ideal para quem busca ajuda para parar ou reduzir? Como o serviço ou pessoa deveria se comunicar com quem vai buscar essa ajuda?

Sua opinião é muito importante aqui, mas, se não quiser responder, é só deixar em branco.

Finalizar →

Appendix C — Promotional Material and Invitation to the Questionnaire: Chemsex (Brazilian Portuguese)