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The sociodynamics of chemsex: Stakeholders' perspectives in France - Results from the ANRS-PaacX study

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A B S T R A C T

This study examined the intricate phenomenon of chemsex among men who have sex with men (MSM) in France, by focusing on the perspectives of different stakeholders, namely people with chemsex experience, clinicians, and community health workers. Employing a sociodynamic approach, lexical analysis was used to identify and interpret key themes in participants' discourses on chemsex, with a view to revealing its multifaceted nature.

Our findings highlight how the social representations of chemsex are profoundly influenced by the institutional separation of sexual healthcare services from services managing the consumption of psychoactive substances. This division not only shapes how individuals perceive and manage their behaviors and health needs but also introduces systemic challenges to adequately addressing the health issues of MSM engaged in chemsex. Moreover, this division leads to structural obstacles for clinicians and community health workers providing care.

This comprehensive analysis deepens our understanding of the complex mechanisms underlying chemsex and offers essential insights for crafting informed and effective public health interventions. Furthermore, our study results underscore the critical need for community involvement in strategies focused on addressing the unique health and social challenges posed by chemsex. Moreover, our findings advocate integrated approaches that align with the specific needs and experiences of concerned stakeholders.

1. Introduction

Chemsex represents a practice at the intersection of substance use and sexuality, predominantly observed within the gay and men who have sex with men (MSM) communities (Bourne et al., 2015; Stuart, 2019). Although there is no consensus as to a definition (Flores-Aranda et al., 2023), chemsex typically involves the intentional use of specific psychoactive substances to enhance and prolong sexual experiences. These substances are chosen for their capacity to facilitate sexual interactions and to boost self-confidence in intimate contexts (Malandain & Thibaut, 2023). This definitional challenge reflects broader tensions between seeing chemsex as a purely public health issue – neglecting pleasure and social linking dimensions (Protière et al., 2024) – and perceiving it as a culturally specific practice shaped by historical and contemporary social dynamics. For example, Lafortune et al. (2021) illustrate how chemsex serves dual psychological and social functions, helping individuals overcome barriers to interaction, mitigate fears of rejection, and lessen the emotional impact of vulnerability in intimate encounters.

Recent decades have witnessed a distinct growth in chemsex (Batisse et al., 2022; Néfau & Milhet, 2017). Practices and chemsex trajectories are diverse and continue to evolve (Ahmed et al., 2016); this is especially true in terms of geographical differences in the methods used to consume drugs - such as oral intake and injection (often referred to as 'slamming') - and the different substances used. For instance, while methamphetamine (crystal meth) predominates in North America and certain European metropolitan areas like Barcelona, synthetic cathinones and GHB/GBL are more prevalent in the French context (Gérome et al., 2024; Weatherburn et al., 2017). Moreover, people with chemsex experience (PWCE) come from diverse socioeconomic backgrounds and drug-use experiences, which further adds to the complexity of defining this practice (Malandain & Thibaut, 2023; Protière et al., 2024). This diversity in practices presents a challenge for research, data collection, and a sound understanding of the phenomenon. Furthermore, it hampers the development of effective prevention and intervention strategies (Edmundson et al., 2018; Pufall et al., 2018; Tomkins et al., 2019) and

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complicates the identification of a central focus for prevention, care and treatment.

Despite not being uniformly classified as an addictive or sexual disorder, it is undeniable that chemsex may lead to health and social problems, including the transmission of HIV and other sexually transmitted infections (Hegazi et al., 2017), psychological challenges (addiction, anxiety, depression, and psychotic symptoms (Moreno-Gámez et al., 2022), physical harm, social isolation, and sexual violence (Gaudette et al., 2024). It is possible that these different risks intersect with broader social vulnerabilities, severely impacting individuals living in precarious situations, such as persons with irregular immigration status (Gaudette et al., 2024).

These risks, combined with different cultural contexts and healthcare systems, highlight the need for an interdisciplinary approach to develop not only a shared definition but also effective public health policies (Melendez-Torres & Bourne, 2016). Specifically, in order to adequately obtain a comprehensive understanding of chemsex, collaboration is needed from a range of clinicians, including psychiatrists, addiction specialists, general practitioners, infectious disease physicians, sexologists, community health workers, and healthcare networks. Accordingly, any such collaboration would cover a range of specialized services, primary care, community organizations, and emergency services (Batisse et al., 2016; Dolengevich-Segal et al., 2015).

The present study aimed to collect, analyze and intersect the various perspectives of chemsex stakeholders in France - specifically PWCE, clinicians, and community health workers - in order to further understanding of the dynamics that define and influence the phenomenon. Utilizing exploratory and qualitative methodology, our study had two principal research objectives.

1. To encapsulate and articulate perspectives and experiences regarding chemsex of various stakeholders, specifically PWCE, clinicians and community health workers, with a view to better understanding the multifaceted nature of this phenomenon.
2. To scrutinize disparities and commonalities among stakeholders' perspectives in order to identify key elements shaping care practices and health outcomes for PWCE, with a view to highlighting key factors influencing both the approach to and effectiveness of the care provided.

Through these objectives, our study aimed to provide meaningful insights into the complexities of chemsex in the context of informing public health and community interventions.

2. Theoretical framework

Previous studies on chemsex predominantly focused on its individual and epidemiological aspects, often overlooking the identity, emotional, and relational dimensions of the participants (Dora & Dobroczyński, 2023). Consequently, in order to provide a comprehensive understanding of different stakeholders' representations of chemsex we adopted the multi-level framework proposed by W. Doise (1982). This framework outlines four distinct levels of analysis in social psychology: intrapersonal, situational/contextual, positional, and ideological. This multi-level approach offers a comprehensive perspective on complex social phenomena. Understanding these phenomena and their interplay between the individual and the collective is crucial for identifying the foundations of effective interventions and anticipating potential barriers to their implementation. Each level offered a unique lens through which the complex dimensions of chemsex could be explored, thereby fostering a holistic understanding of the factors that define and influence this phenomenon. These levels are described below in the context of chemsex.

1. Intrapersonal Level: At this micro level, the focus is narrowed to individual internal processes. These include examining individuals' personal thoughts, emotions and history, in order to understand how their psychological composition and experiences inform their behavior in the context of chemsex.
2. Situational/contextual Level: This level zooms out to the immediate external environment surrounding the individual. It assesses how social contexts, interactions, and specific situations or events shape behaviors, taking into account group dynamics and social influences.
3. Positional Level: Expanding further, this level considers broader societal structures. It examines the impact of social roles, hierarchies, and power dynamics, including the influence of gender, race, class, and cultural norms on chemsex behaviors.
4. Ideological Level: This is most macro level, and focuses on overarching societal representations. This level of analysis explores how cultural norms and societal values inform both individual and collective behaviors within the chemsex sphere, integrating historical, economic, and political factors.

We chose Doise's multi-level framework because we believe it could facilitate the identification of factors that either facilitate or impede the prevention and management of social and health issues related to chemsex. Identifying these factors could in turn pave the way for the development of tailored strategies to address the specific needs of the populations concerned.

3. Material and methods

3.1. Study design and participants

This study is based on qualitative data from the ANRS-PaacX study, which aimed to comprehensively understand the perceptions of chemsex among all involved stakeholders. Our participant pool was strategically chosen to ensure a heterogeneous sample.

Recruitment sites included public hospitals and private practices in five French cities - Paris, Marseille, Lyon, Nantes and Nimes - to ensure geographical diversity and a mix of rural and urban perspectives. Participant categories were as follows.

- PWCE: defined as persons over 18 years of age who self-identified as MSM, who currently or previously engaged in chemsex practices, and who were fluent in French.
- Clinicians: defined as healthcare professionals who might encounter PWCE in their practice. This category included psychologists, psychiatrists/addiction specialists, general practitioners, infectious disease physicians, nurses, hepatologists and sexologists.
- Community health workers: defined as individuals (employees or volunteers) involved in HIV advocacy and support, working in related associations.

It is important to point out that some participants belonged to more than one category; these persons provided special insights into how different positionalities shape our understanding of chemsex. Specifically, five clinicians and community health workers reported current personal experience with chemsex, and four participants included as PWCE were clinicians or community health workers. Individual interviews were conducted with participants included as clinicians and as community health workers. In order to facilitate interactions, focus groups were organized, instead of individual interviews, with participants who were included as PWCE. The interviews were led by social sciences researchers, and were structured to probe deep into the participants' experiences and perspectives on chemsex. A brief questionnaire was administered at the start of each interview to collect basic demographic and background information.

A total of 18 individual semi-structured interviews and five focus groups with 25 PWCE were conducted between June and September 2018. Participant (n = 43) age ranged from 28 to 64 years, the majority were male (89%) and most self-identified as MSM (76%). Among PWCE,

17 (57%) were HIV positive, and 12 (40%) were HCV positive.

3.2. Ethical considerations

To ensure confidentiality and anonymity, PWCE were directly contacted by AIDES, a French non-governmental organization (NGO) active in providing support to PWCE. Participants received an information letter and provided oral consent, which was audio-recorded at the beginning of each interview, ensuring adherence to ethical standards and participant confidentiality. All interviews were audio-recorded, transcribed, and anonymized when necessary. Data (i.e., interviews and questionnaires) were securely stored in a secure logistics office, which could only be accessed with a personalized electronic badge. Digitized data were encrypted and password-protected, with audio recordings destroyed post-transcription. Ethical approval for the study was obtained from the relevant Ethics Evaluation Committee (No IRB00003888) and authorization was obtained from the French Data Protection Authority (No 2178225).

3.3. Analytical approach

The primary aim of the lexical analysis was to collect high-quality data capable of i) revealing discourse variability, ii) establishing lexical links among individuals, and iii) highlighting semantic proximities.

The lexical analysis was conducted using IRaMuTeQ software (*Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires*) version 0.7 alpha 2. IRaMuTeQ is an open source tool which integrates R functionalities for lexical analysis (Ratinaud, 2008). It facilitates the processing of large textual datasets, and identifies patterns, frequencies, and relationships between words and concepts within the data.

3.3.1. Data preparation

Following data collection, transcripts from individual interviews and focus groups were compiled into a single textual corpus. This corpus was standardized for automated lexical analysis using IRaMuTeQ. Each transcript was preceded by a starred line (****) containing illustrative variables to describe its characteristics. These variables included: stakeholder category (PWCE/clinician/community health worker), personal experience with chemsex (yes/no), sexual orientation (homosexual/heterosexual), city size (large/medium-sized/small). These illustrative variables provided sociodemographic and contextual markers for analyzing variations in discourse based on participants' profiles.

3.3.2. Analysis method

IRaMuTeQ divided the corpus into smaller analytical units called Text Segments (TS), each approximately 40 words in length. This segmentation maintained the natural flow of discourse while ensuring uniformity across analytical units. The study utilized a three-phase lexical analysis to uncover, explore and understand themes related to chemsex in the participants' discourses. Using this multi-phase approach ensured analytical depth and breadth. We describe each phase below.

1. **Classification**: Hierarchical Descending Classification (HDC), developed by Reinert (1993), was used to identify distinct group of lexical clusters within the corpus. The process involved iterative binary divisions of the text segments, guided by χ^2 tests that evaluated the distribution of words across emerging classes. This method ensured that clusters were clearly distinguished from each other and that intra-cluster similarities were retained. The results were shown as a hierarchical tree (called a dendrogram), which visually represented the relationships between the clusters and highlighted the overarching feature of each cluster and how they were interconnected, providing a clear picture of the thematic structure of the discourse.
2. **Characterization**: Following the identification of clusters, the analysis moved to their characterization. Each cluster was defined by its most representative vocabulary (i.e., the lexical signature for each theme). The analysis also explored how these clusters related to the illustrative variables. By linking lexical content to illustrative variables, the analysis contextualized the discourse, providing an additional layer of interpretative depth and revealing how individual profiles shaped stakeholders' narratives.
3. **Interpretation**: In addition to the statistical analyses, a thematic content analysis was conducted on the characteristic text segments of the lexical clusters to better understand the meaning of the themes identified during the statistical analyses. This analysis followed Paillé & Mucchielli's(2021) methodology, which involves the systematic coding of recurring themes, the development of thematic categories, and the analysis of discourse patterns.

Our analytical approach prioritized statistical analysis of word patterns over predefined categories, reducing researcher bias. Using this mixed-method strategy helped to reveal both shared understanding and individual variations in how different stakeholders think about and discuss chemsex. Moreover, this method aligns with social representations theory (Lahlou, 1992a; Kalampalikis & Moscovici, 2005) by identifying implicit patterns and meanings, while following Doise's (1982) framework for multi-level analysis.

4. Findings

4.1. Classification of stakeholders' discourses: a three-cluster structure of chemsex representations

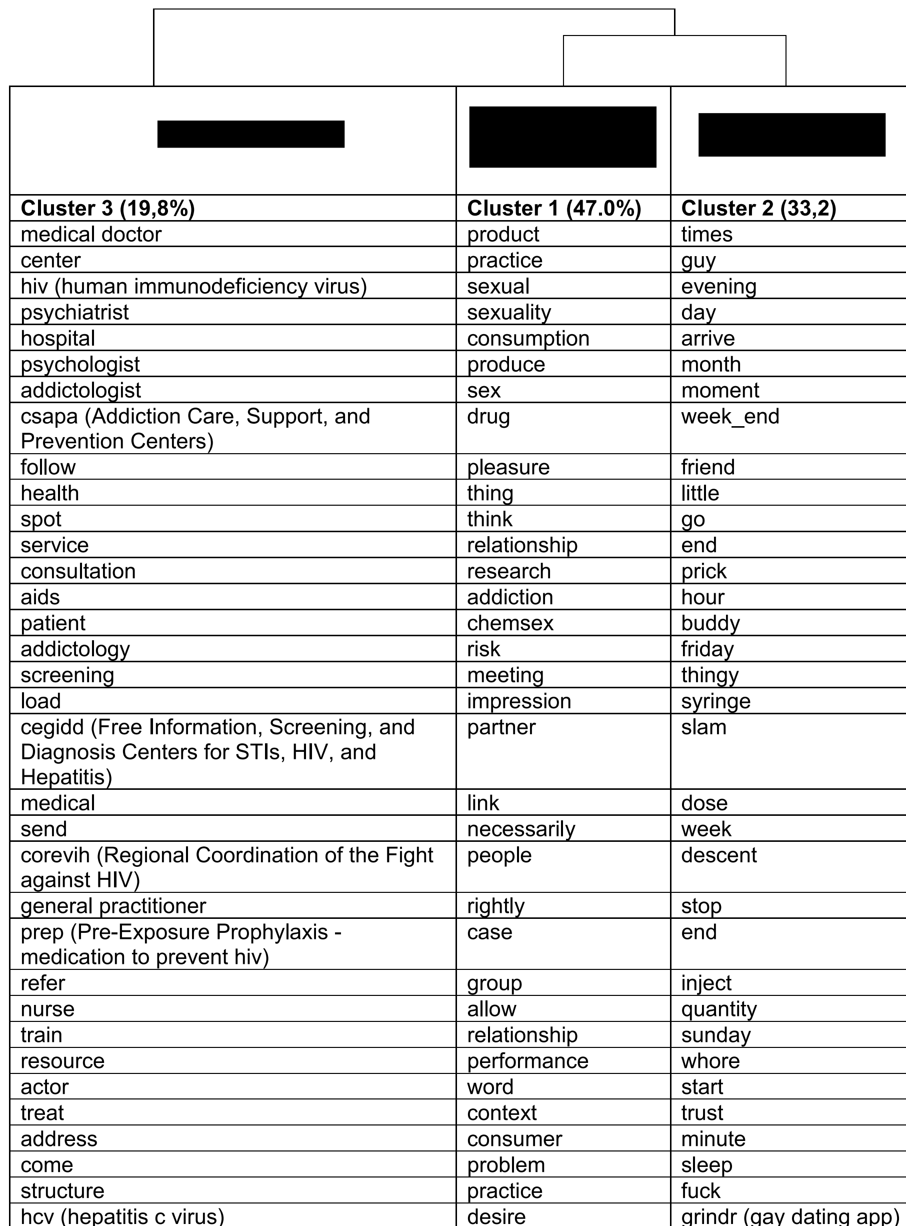
The analysis identified three lexical clusters that covered 91.1% of the corpus, indicating that the analysis was of high quality. The dendrogram (Fig. 1) illustrates not only the organization of clusters but also the initial lexicon statistically associated with each class. Its organization highlights clear distinctions between Cluster 1 and Cluster 2, on the one hand, and Clusters 3, on the other. The clusters were composed as follows.

- Cluster 1 (C1), accounted for 47% of the classified segments (n = 2801). It focused on the definition of chemsex with a lexicon that referred to consumption, sexual practices and sexuality.
- Cluster 2 (C2), accounted for 33% of the classified segments (n = 1978). It focused on the experience and implementation of chemsex practices and was characterized by the use of temporal markers, terms related to the technical aspect of practices, and to the social context.
- Cluster 3 (C3) accounted for 20% of the classified segments (n = 1180). It focused on medical and health issues related to chemsex, and included terms related to infectious risks associated with chemsex, the health prevention and care offer, and the diversity of care providers and medical facilities.

4.2. Characterization of lexical clusters: associations with illustrative variables

The contingency table (Table 1) reveals relationships between the lexical clusters identified by IRaMuTeQ and the various participant characteristics.

- C1 was associated with study participants who had no personal experience with chemsex ($\chi^2 = 27.9^{**}$), and the community health worker ($\chi^2 = 12.5^{**}$). This association suggests that the discourse and themes present in this lexical cluster were more likely to originate from these categories. To a lesser extent, this cluster was also associated with heterosexual orientation ($\chi^2 = 6.4^{*}$), the clinician



Cluster 3 (19,8%)	Cluster 1 (47.0%)	Cluster 2 (33,2)
medical doctor	product	times
center	practice	guy
hiv (human immunodeficiency virus)	sexual	evening
psychiatrist	sexuality	day
hospital	consumption	arrive
psychologist	produce	month
addictologist	sex	moment
csapa (Addiction Care, Support, and Prevention Centers)	drug	week_end
follow	pleasure	friend
health	thing	little
spot	think	go
service	relationship	end
consultation	research	prick
aids	addiction	hour
patient	chemsex	buddy
addictology	risk	friday
screening	meeting	thingy
load	impression	syringe
cegidd (Free Information, Screening, and Diagnosis Centers for STIs, HIV, and Hepatitis)	partner	slam
medical	link	dose
send	necessarily	week
corevih (Regional Coordination of the Fight against HIV)	people	descent
general practitioner	rightly	stop
prep (Pre-Exposure Prophylaxis - medication to prevent hiv)	case	end
refer	group	inject
nurse	allow	quantity
train	relationship	sunday
resource	performance	whore
actor	word	start
treat	context	trust
address	consumer	minute
come	problem	sleep
structure	practice	fuck
hcv (hepatitis c virus)	desire	grindr (gay dating app)

Fig. 1. Dendrogram of the corpus classification and size of each cluster.

Table 1
Contingency table of illustrative variables/lexical clusters.

	Cluster 1 (χ^2)	Cluster 2 (χ^2)	Cluster 3 (χ^2)
Stakeholder category			
Community Health Worker	12.5**	Ns	Ns
Clinician	4.4*	Ns	312.2**
PWCE	Ns	327.4**	Ns
Sexual orientation			
Homosexual	Ns	274.2**	Ns
Heterosexual	6.4*	Ns	226.5**
Personal chemsex experience			
No	27.9**	Ns	319.3**
Yes	Ns	429.4**	Ns
City size			
Large city	Ns	11.1**	Ns
Medium-sized city	4.2*	Ns	38.9**
Small city	Ns	11.6**	Ns

Values marked with an asterisk (*) indicate a significant p-value at the 0.05 threshold; those marked with two asterisks (**) indicate a very significant p-value at the 0.001 threshold. 'Ns' indicates no significant association.

category ($\chi^2 = 4.4$*) and participants residing in medium-sized cities ($\chi^2 = 4.2$*).

- C2 was strongly associated with personal experience with chemsex ($\chi^2 = 429.4$**), the PWCE ($\chi^2 = 327.4$**) and homosexual orientation ($\chi^2 = 274.2$**). The strength of these associations highlights that personal experience with chemsex is a more determinant factor in shaping the discourse in this cluster than the stakeholders' categories (i.e., PWCE/clinician/community health worker). To a lesser extent, C2 was also associated with participants residing in small ($\chi^2 = 11.6$**) and large ($\chi^2 = 11.1$**) cities.
- C3 was strongly associated with participants who had no personal experience with chemsex ($\chi^2 = 319.3$**), the clinicians ($\chi^2 = 312.2$**), and heterosexual orientation ($\chi^2 = 226.5$**). To a lesser extent, C3 was also associated with participants residing in medium-sized cities ($\chi^2 = 38.9$**).

The chi-square values reveal that experience of chemsex was the factor most strongly associated with the three lexical clusters, followed by participant status (i.e., stakeholder category) and sexual orientation.

The relatively low chi-square values associated with different locations suggest that geographical context had a smaller impact on data variability compared to other variables. This reflects the diverse perspectives of the stakeholders involved and suggests that attitudes, perceptions, and representations related to chemsex were more likely to vary based on participants' personal experiences and social positions.

4.3. Interpretation of lexical clusters: stakeholder-specific discourses and thematic analysis

In this study, the term 'cluster' denotes the predominant discourse of a specific social group. It is important to underline that while each cluster predominantly represented the perspectives of a particular group, instances could arise where individuals outside this group voiced similar sentiments. This does not imply membership of the group, but rather congruence in certain perspectives or ideas on specific topics. For instance, if a discourse was typically identified with clinicians, this does not preclude community health workers from sharing and articulating similar views. In the other words, the assignment of a cluster to a specific group was grounded in statistical analysis of thematic prevalence and not in the absolute exclusivity of these themes to the group. This nuance is pivotal when interpreting the data, and ensures a more comprehensive view of the discourse dynamics within and across three different stakeholder groups involved.

4.3.1. Cluster 1: the ambivalent conceptualization of chemsex: between a socio-cultural practice and individual pathology

C1 focused on the definition and understanding of chemsex mainly by persons who did not practice it and community health workers. The analysis reveals an ambivalence in the conceptualization of chemsex through two distinct yet interrelated interpretative frameworks: a socio-cultural perspective and a medicalized view of chemsex. For the former, chemsex is a historical and cultural practice within the gay community. Participants emphasized a social and collective dimension of chemsex involving shared norms, expectations, and behaviors. In their opinion, chemsex had a significant socio-cultural impact.

> "The consumption of substances and their combination with sexuality has existed for a long time in the gay community, and there is no reason for it to stop." (*community health worker, *chemsex experience, *medium-sized city)

> "I'm saying that the consumption of substances in sexuality, and by sex workers - among others - in my opinion, it's nothing new, I was 14 and a half years old; today I'm 57; in my opinion, it already existed" (*community health worker, *no chemsex experience, *medium-sized city)

> "Chemsex is a set of sexual practices and encounters that have created a culture which people identify with" (*community health worker, *chemsex experience, *large city)

In contrast, the medicalized view of chemsex sees it through the lens of individual pathology and psychological vulnerability. This perspective particularly emphasizes escalation patterns in and psychological predisposition to certain practices like slamming. Moreover, this view links chemsex to underlying psychological distress and discomfort.

> "But, in any case, those who do not have a fulfilling sex life and where the products help them, well, yes, in [terms of] motivation; sorry, I'm making a link but there are sexual addictions" (*clinician, *no chemsex experience, *large city)

> "Why they turn to slamming? I think it's because at a certain point in the group, there may be an escalation in substance practices; that being said, I nevertheless think that to turn to slamming there may be additional fragility" (*clinician, *no chemsex experience, *small city).

> "But is it the effects of the product or of the sexual relationship at the beginning? yes, at the beginning, now that the practice is becoming chronic and is ever more present. I get the impression that there is less sexual pleasure" (*clinician, *no chemsex experience, *large city)

These two contrasting frameworks create tensions in understanding chemsex. While acknowledging its historical continuity within gay communities, respondents simultaneously expressed concern about contemporary patterns of use, particularly regarding new substances and consumption methods such as slamming. These tensions were evident in respondents' emphasis on substance use.

> "They [i.e., PWCE] have no perspective on consumption practices, have very little knowledge about the products, do not know where to find this information, think that it's legal or [at least] don't ask themselves too much whether it's legal or not." (*community health worker, *chemsex experience, *medium-sized city)

> "So, often there is indeed this judgment about practices; and besides, [concerning] the consumption of substances in the sexual context, it's sometimes complicated to talk about it easily." (*PWCE, *chemsex experience, *medium-sized city)

> "But at the beginning, it remained very secret, hidden, and it's still the same [today], whether you are a slammer or consumer; even in [community association] it happened to me; I've been at [community association] for 20 years." (*community health worker, *chemsex experience, *large city)

4.3.2. Cluster 2: the lived experience of chemsex: diversity of practices and social dynamics

The analysis of the discourses from lexical cluster 2 revealed several important aspects regarding personal experience and the management of chemsex. Chemsex experiences varied greatly from one individual to another. Some participants described occasional or moderate drug consumption, while others talked about prolonged and intensive sessions. This variability underlines the diversity of practices and experiences within the community practicing chemsex. In this diversity, participants described how they gradually integrated chemsex into their routine, planning their sexual life around substance consumption and sexual activities. This integration of chemsex into everyday life shows its centrality in the lives of some of the study participants.

> "It was once every two weeks; after, it could be every week; at the beginning, it was like three per night" (*PWCE, *chemsex experience, *medium-sized city)

> "That's why I stopped; it's that the guy, actually, well, the guy who is now one of my best friends, the guy could spend 3 days in orgies, locked in the dark; but me, after 24 hours I'd blow a fuse, get depressed etcetera" (*PWCE, *chemsex experience, *small city)

Several discourses brought up the impact of chemsex on well-being and mental health, showing that participants were aware of the associated risks, especially those related to drug use. In this regard, although they mentioned various problems related to sexual health and to sexual violence which they themselves were particularly exposed to, participants mainly focused on risks related to consumption such as managing the 'crash' after drug use, and managing the risk of addiction.

Chemsex was described not only in terms of substance consumption, but also as a social and relational space. The importance of terms such as "friend", "buddy" and "boyfriend" underlines the central role of encounters in chemsex. Indeed, many quotes highlight the social aspects of chemsex, particularly its use as a means of connection.

Discourses highlighted that chemsex was part of collective dynamics that produce a sense of belonging and determine intergroup relations. In these dynamics, it is mainly the modes of consumption that serve for the social categorization of PWCE and distinguish, for example, slammers

from crystal meth smokers (methamphetamines). This social categorization led to processes of labelling, comparison, and social stigmatization by the group of PWCE. In this regard, being identified as a drug user represented a significant risk of social exclusion for PWCE. Accordingly, this identification influenced social interactions among this stakeholder group.

> "I had discussions sometimes with guys who were crystal users - crystal smokers - who were very critical of 'slammers' like me. When I could talk to them, I would say: 'Of course, it's a different practice, of course, the practice of injection may shock you, but look at your own use of crystal." (*community health worker, *chemsex experience, *large city)

> "Sometimes, when I spoke to close friends, when they told me about their practices, I would say to them: 'But in the end, you are not a chemsex user, you are a drug addict.' It shocked them. Generally, I do it when I see that the person is not aware of the phenomenon. I say: 'But you are now a drug addict, you use alone at home on our couch'." (*community health worker, *chemsex experience, *large city)

The analysis of the discourses from cluster 2 reveals a great deal of complexity in the way chemsex was experienced and managed by individuals. This highlights the importance of considering chemsex not only as a practice related to substance consumption, but also as a social and relational experience with significant implications for mental health and well-being.

4.3.3. Cluster 3: structural challenges in healthcare: between epidemiological approach and holistic needs

C3 was representative of the discourses of clinicians and participants without direct experience of chemsex. It exposed interactions within the healthcare system between various types of clinicians such as doctors, psychiatrists, and infectious disease specialists. The discourses emphasized the importance of prevention, screening, and treatment of infectious diseases related to chemsex, especially HIV.

> "Several infectious disease specialists were practically the first to see chemsexers because they were following patients for HIV, and they saw people harming themselves." (*clinician, *no chemsex experience, *medium-sized city)

Most clinicians took a medical and epidemiological approach to chemsex. This approach was criticized. Several remarks pointed to a lack of training and awareness of chemsex, leading to abuse, medical violence and stigmatization of users.

> "His doctor, he is closed, completely closed, and he judges; that's why there is a need for training for frontline doctors because they are the ones who guide people." (*clinician, *no chemsex experience, *medium-sized city)

> "Then there is another essential entry point; it's that many users are HIV positive, and talking about it today with their general practitioner or their HIV doctor is complicated." (*community health worker, *chemsex experience, *medium-sized city)

> "Or people have already been judged either by their general practitioner or at the hospital because they [PWCE] went to ask for emergency treatment or other screening centers, so they also have traumatic memories." (*community health worker, *chemsex experience, *large city)

The discourses also pointed to tensions between health services, and in particular between addiction care centers [called CSAPA or "Addiction Care, Support, and Prevention Centers"] and sexual health and HIV structures (e.g., testing centers for sexually transmitted diseases [called GEGIDD or "Free Information, Screening, and Diagnosis Centers for STIs, HIV, and Hepatitis"], community associations). These tensions hindered the collaboration and coordination of care needed to effectively manage chemsex practices. Furthermore, the healthcare system was described as inadequate for the specific needs of PWCE. Addiction centers, in particular, were criticized. Moreover, the discourses emphasized the importance of a holistic approach to providing care for that integrates not only medical and epidemiological aspects but also social, psychological and community elements.

> "Yet, I mean, it depends on the doctor; like when I went to the CSAPA at the university hospital of [small city], there was not a single trained specialist in addiction in the whole unit." (*PWCE, *chemsex experience, *small city)

> "With the rivalry between the public and private sectors, it's the private doctors attached to the hospital who refer patients to me, not the hospital [only] practitioners." (*clinician, *no chemsex experience, *medium-sized city)

> "The CSAPA label puts people off. I think the label 'community sexual health center' works better, but I don't think the CSAPA [addiction care center] or the CAARUD [harm reduction center] are a solution for others." (*community health worker, *chemsex experience, *medium-sized city)

> "The CSAPA are totally not suitable for chemsexers. I find a place like the sexual health center to be great. It's in the city center, it's not identified as a specific medical center, it's very general." (*PWCE, *chemsex experience, *medium-sized city)

5. Discussion

This study aimed to document the intricate phenomenon of chemsex in the French context through different perspectives of chemsex among three groups of stakeholders – PWCE, community health workers, and clinicians - involved in its practice and care, and to investigate influential factors and variations. It comprised 43 individuals from different areas of France. A lexical analysis identified three thematic clusters related to the i) definition, ii) experience, and iii) medical aspects of chemsex. These themes varied according to the individual experiences of chemsex practices and the social positions of the respondents.

5.1. Beyond a risk paradigm: the multilevel dynamics of chemsex experience

Our study highlights that personal experience of chemsex was the primary determinant shaping perceptions of this practice, outweighing factors such as stakeholder category (including PWCE), sexual orientation, and city size. At the intrapersonal level (C2), practices ranged from occasional and controlled substance use to more frequent or risky engagement, highlighting a wide range of individual trajectories. Participants' narratives show how chemsex is integrated into everyday life, not only as a sexual practice, but also as a social and identity experience that involves the search for pleasure, connection, and emotional comfort, echoing results from Milhet et al. (2019). These dimensions, often neglected by biomedical approaches, are consistent with recent research (Møller & Hakim, 2023; Protière et al., 2024) that calls for a perspective that transcends narrow epidemiological frameworks. This also highlights the importance of considering experiential knowledge. Herrijgers et al. (2022) highlight how PWCE's implementation of informal harm reduction strategies before, during, and after chemsex sessions - such as monitoring drug doses, adopting safer injection practices, and planning recovery periods - reveals a form of self-regulation often overlooked by institutional approaches. Similarly, Gaudette et al. (2024) emphasize how experiential knowledge, rooted in peer exchanges and community solidarity, compensates for the lack of culturally adapted and accessible institutional information. However, the persistence of stigma and institutional barriers limits the formal acknowledgment of these

practices, creating a gap between lived experiences and the tools available for harm reduction. Bridging this gap requires interventions that value PWCE's agency while providing evidence-based, non-judgmental, and culturally sensitive support tailored to the realities of chemsex.

5.2. Hierarchy at an interpersonal level: PWCE versus drug addicts

Analysis of cluster 2 showed the relational dimension of chemsex. Those who had direct experience of chemsex often saw it as a relational and affective practice (Amaro, 2016), influencing not only their knowledge, attitudes, and motivations but also shaping their interpersonal relationships. PWCE typically did not see themselves as part of the 'drug users' group, which they perceived as a threat to their identity (Bourne et al., 2014). This aligns with previous research highlighting the role of identity in chemsex practices (Grégoire, 2016; Jaspal, 2022; Sousa et al., 2023). In the context of chemsex, this perceived identity threat impacted the way practices were explained, categorized, and justified, serving as a significant mechanism of social regulation (Jaspal, 2022). Consequently, drug use and sexual practices became associated with separate social identities, distinguishing those who engaged in chemsex from drug users. This distinction has substantial implications for how health services are perceived and utilized by chemsex stakeholders and may shed light on why traditional addiction care services in France, such as CSAPA, are often underutilized or avoided by PWCE (Hibbert et al., 2021).

5.3. Polarization at a positional level: community approach versus medical approach

Community health workers' and clinicians' perspectives concerning chemsex were polarized. The former typically saw chemsex as a sexual practice ingrained in the culture and history of the gay community. In contrast, clinicians often saw it through the lens of addiction and individual vulnerability. Consequently, these distinct interpretations of chemsex reflected these stakeholders' divergent social and professional backgrounds. Their viewpoints were shaped by their unique historical relationships and professional interactions with individuals engaged in chemsex, leading to two contrasting intervention models for managing chemsex: the community approach and the medical approach. The disparity between these approaches had significant implications for PWCE. Understanding this polarization helps to explain the incompatibility in care modalities offered by community health workers and clinicians. This incompatibility potentially leads to tensions and conflicts due to different expectations in chemsex management. Research suggests that medical structures like CSAPA, which are rooted in addictology, are not perceived to adequately address the needs of PWCE, especially considering the sexual nature of their drug use (Bourne et al., 2015; Hillier et al., 2023). This dichotomy between sexuality and drug use affects access to healthcare services and the ability to provide effective care and support to users.

5.4. The duality of chemsex: the interconnection between sexuality and substance use

Our analysis reveals tensions between different stakeholders in how they conceptualized chemsex, something particularly evident in Clusters 1 and 3. While sexuality is often viewed as natural and essential to community identity, substance use is still seen as morally suspect, being consistently framed as 'problematic' and inherently risky, an assessment that aligns with dominant addiction discourses (Dennis, 2019). This dichotomy creates a hierarchy that prioritizes sexual expression and stigmatizes substance use. A dichotomy also exists in the organization of healthcare systems, where binary logic reinforces a separation between addiction facilities and sexual health services, as revealed in particular in our analysis of Cluster 3. This fragmentation impedes the development of integrated care models capable of addressing the multidimensional needs of PWCE. Thus, our multilevel analysis reveals structural difficulties for the French healthcare system in its capacity to prevent and effectively manage chemsex-related health issues. The discourses gathered in Cluster 2 demonstrate how chemsex resists traditional binary categorizations of substance use as either 'problematic' or 'non-problematic', and the need for more nuanced representations of sexuality that consider situational contexts, personal intentions, and the relational dynamics underlying these encounters. Addressing these challenges requires systemic reform, including flexible and inclusive policies (Gaudette et al., 2022) that adapt to evolving chemsex practices (Platteau et al., 2020).

This study has several limitations. First, it focused exclusively on MSM, excluding transgender and non-binary individuals, two populations who also engage in chemsex. This is an important limitation as these populations often encounter unique barriers to healthcare access and may have different experiences with chemsex practices. Future research should actively include these populations to develop a more comprehensive and inclusive understanding of chemsex. Second, data collection in 2018 predated the COVID-19 pandemic, which significantly impacted both chemsex practices and healthcare service delivery. Recent research (Roux et al., 2022) documents increased chemsex during the pandemic's lockdown periods, as well as reduced access to health services. These contextual changes may have permanently altered the patterns of behavior and service utilization described in our findings.

6. Conclusion

This qualitative research study examined the social representations of chemsex by various stakeholder groups – PWCE, community health workers and clinicians – in the French context. It uncovered the distinctions and hierarchies that influence related perceptions and practices. With the emergence of chemsex as a public health concern, these stakeholders groups are increasingly compelled to develop discourses and definitions, thereby forming coherent social representations. Our study aimed to decode these diverse perspectives and the challenges associated with risk prevention and caring for individuals who practice chemsex.

We identified three main lexical themes that elucidate the unique relationships the different stakeholder groups have with chemsex. These themes underscore a dichotomy between drug use and sexual practices in the context of chemsex. This phenomenon is complex, marked by tension and ambivalence, especially in how it straddles the two dimensions of sexuality and substance use.

Our study results also emphasize the structural health challenges faced by individuals who practice chemsex. In discussing the implications of these results, we underscore the importance of implementing an intersectional approach to chemsex research, where both individual behaviors and collective public health responses are considered. In conclusion, our findings highlight the need for better understanding and management of the chemsex phenomenon, through adapted and targeted interventions that reflect the complexity of the challenges it brings.

CRediT authorship contribution statement

Nicolas Khatmi: Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Formal analysis. **Perrine Roux:** Writing – review & editing, Validation, Conceptualization. **Bruno Spire:** Writing – review & editing, Validation, Conceptualization. **Christel Protière:** Writing – review & editing, Validation, Supervision, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial

interests or personal relationships that could have appeared to influence the work reported in this paper.

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