CHEMSEX USERS IN CZECHIA: EMIS SURVEY

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SUMMARY

Objectives: Chemsex is a phenomenon highly relevant to public health concerns. Our primary aim is to describe the Czech chemsex scene regarding substances used, sexual behaviour, mental health, sexual life satisfaction, internalization of homonegative attitudes, and prevalent chemsex patterns.

Methods: The data from the European Men Who Have Sex With Men Internet Survey (EMIS) 2017 were used. The mental health of chemsex users was assessed by the Patient Health Questionnaire 4 (PHQ4), internalized homonegativity was measured using the Short Internalized Homonegativity Scale. A sample of 87 men who have sex with men (MSM) chemsex users and a comparison group of 261 MSM were selected from the total sample of 1,688 respondents. Mann-Whitney and χ^2 tests were used to compare groups.

Results: Active chemsex users made up 5% of the sample (87 of 1,688), with an average age of 37 years. Chemsex users were more likely to engage in condomless sex with non-steady partners ($\chi^2 = 46.8$, $p < 0.001$), and had dramatically more STIs, such as HIV ($\chi^2 = 52.9$, $p < 0.001$), HCV ($\chi^2 = 25.9$, $p < 0.001$), and syphilis ($\chi^2 = 41.5$, $p < 0.001$). Chemsex users frequently injected drugs (n = 19, 20%). More than half (n = 48; 55%) of chemsex users had sober sex in the last 4 weeks. Chemsex culture was associated with riskier substance use, both in terms of mode and frequency. The mental health of chemsex users in our sample did not differ significantly from the comparison group ($\chi^2 = 0.2$, $p < 0.7$). Chemsex users did not conceal their sexual identity more often than the comparison group, on the contrary, 69% (n = 59) of them were out to most significant others, compared to 53% (n = 134) in the comparison group ($\chi^2 = 8.8$, $p < 0.05$). In addition, we did not find differences in the degree of internalized homonegativity ($\chi^2 = 0.9$, $p < 0.4$). Chemsex users were clearly and significantly more satisfied with their sex life than the comparison group (Mann-Whitney U test, $p < 0.001$).

Conclusions: In our sample, chemsex use was not associated with a negative impact on health or wellbeing. Our results suggest that chemsex is not a homogeneous phenomenon. Many different patterns and subcultures exist, some of them are riskier, some safer than others.

Key words: chemsex, MSM, sober sex, internalized homonegativity, sexual satisfaction

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INTRODUCTION

Chemsex has been defined as engaging in sexual activities under the influence of specific recreational drugs commonly to sustain, enhance, prolong, disinhibit, or facilitate the experience (1) or the use of drugs specifically for or during sex (2). The drugs usually included in definitions are crystal methamphetamine, mephedrone (or other powerful stimulants), g-hydroxybutyrate (GHB)/γ-butyrolakton (GBL) or ketamine, together known as fourchems. Alcohol, cannabis and poppers are usually excluded from definitions of chemsex. Fourchems are used during extended sexual sessions, frequently involving multiple sexual partners. HIV sexual risk behaviour is more frequent among men who have sex with men (MSM) reporting sexualized drug use; these men may but also may not identify themselves as gay, bisexual, heterosexual, etc. (3–7). Participation in chemsex peaks between mid-thirties to early forties but is evident at all ages (2, 8). The use of digital technologies and sexual dating apps significantly contributes to the spread of chemsex culture (9). Psychosocial interventions are effective, but they need to address both drug and sexual-related harms (10).

According to the systematic review by Maxwell et al., the prevalence of chemsex among MSM usually ranges from 3% to 29% (2), Tomkins et al. suggested an even broader range of prevalence of sexualized drug use (4 to 94%) (11). The results of studies conducted online in a broader population of MSM are usually close to 5% (12, 13). In contrast, studies that recruit respondents in specific subpopulations (for example, among clients in venerological clinics or on dating sites, such as Grindr) obtain a percentage of chemsex users among MSM of around 20–30%, or even higher (3, 5, 7, 14).

Chemsex is a growing phenomenon (15), this is probably due to its effect on the quality of sexual experiences. The prevalence of recreational drug use is higher among MSM than the general population, and it is particularly high among MSM living with HIV (4, 12, 16–18). According to Bourne et al. (19), there has been a rapid transition from drugs such as ecstasy and cocaine that had been popular on the gay scene for more than a decade towards new psychoactive substances like crystal meth, mephedrone, GHB/GBL. The spread of these new substances may mean that the shared community understanding around safer drug use (including dosing, combinations, safe injection practices, and

dealing with undesired effects) that have existed for previously popular drugs is still developing about these newer substances and new contexts such as their sexualized use. Specifically, methamphetamine was strongly associated with higher HIV risk in condomless sex compared to other commonly used drugs (20). Increasing use of GHB/GBL for chemsex is probably connected with the growth of GHB-associated deaths (21). A minority of MSM appear to engage in chemsex behaviours, and these behaviours have been recognized as potentially harmful to their health and wellbeing (17).

Chemsex also became a cultural phenomenon. Men implicitly and explicitly categorize themselves and others based on drugs used, frequency and intensity of use, injecting, and HIV status (22). Other findings (23) provide empirical evidence regarding heterogeneity among MSM who engage in sexualized drug use. In this study, some MSM tended to use certain chemsex drugs (rather than just one drug of choice), but another group tended to use chemsex drugs in combination with a much wider variety of drugs (23). Four specific types of more extensive chemsex sessions with different forms of risk exposure can be identified (24): anonymous sessions (at private homes, with unknown men), chill-sex (sessions within a group of men who know each other), semi-closed parties (organized, among networks of friends and/or couples), sessions in saunas/other sex venues (spontaneous, often between individuals who meet each other at these venues).

In Czechia there is a long tradition of meth (pervitin) use. Thus, we were interested in understanding the nature of the chemsex scene in Czechia.

MATERIALS AND METHODS

Sample

We used data from the European Men Who Have Sex With Men Internet Survey (EMIS) 2017, an online survey conducted in 2017 in 33 countries, including Czechia. We only worked with the Czech dataset. Out of almost two thousand Czech respondents, we selected only those who described having an experience with chemsex in the last four weeks. As an experience with chemsex, we considered using of at least one addictive substance commonly associated with chemsex (meth, mephedrone, GHB/GBL, or ketamine) to improve the sexual experience. In total, we selected 87 respondents this way.

To better understand and interpret the results, we created a comparison group of MSM by selecting three respondents of the same age from the total sample of 1,688 respondents for each respondent from the target group living in an equally large city but who have not used substances associated with chemsex. Thus, we included additional 261 respondents in the comparison group.

Hypotheses

Based on our study aims, we defined the following hypotheses:

- Chemsex users will have more mental problems than the comparison group.
- Chemsex users will have more trouble (concealment and internalized homonegativity) with their sexual identity than the comparison group.
- Chemsex users will be less satisfied with their sex life than the comparison group.

Methods

Due to the exploratory character of our study, our sample size, and our interest in providing initial insights into future avenues in this area of research in Czechia, we applied primarily descriptive statistics. We compared groups using χ^2 and applied the Mann-Whitney tests.

To test our first hypothesis, we used the results from the Patient Health Questionnaire 4 (PHQ4) to address symptoms of anxiety and depression, as well as specific questions on suicidal ideation, self-harm ideation, and perceived lack of social support (25). Suicidal ideation was measured by a single item: "How often did you have the following problems in the last 2 weeks: thoughts that it would be better if I were dead, or that I hurt myself in some way?" Perceived lack of social support was assessed by two 4-item subscales based on the Social Provisions Scale (26).

To test our second hypothesis, we examined the degree of openness regarding one's own sexual identity, dissatisfaction with sexual life, the partner status, and internalized homonegativity. Openness about one's sexual identity (hereafter outness) was determined by the question: "When you think of all the people you know including family, friends, work colleagues, or classmates, how much is the proportion of those who know you are attracted to men?" Internalized homonegativity was measured using the 7-item Short Internalized Homonegativity Scale (27).

To test the third hypothesis, we used a single item on satisfaction with sexual life: "On a scale from 1 to 10 (1 least satisfied, 10 most satisfied), how satisfied are you with your sex life?" The stated value was subtracted from 11, and so we gained a scale of dissatisfaction with sex life.

RESULTS

Demographic Characteristics of Chemsex Users

Out of the total sample of 1,688 Czech respondents, 87 admitted having used chemsex in the last four weeks. Active chemsex users made up 5% of the Czech MSM sample.

The average age of chemsex users was 37 (median was also 37). Most of them (60%) lived in large or medium-sized cities, were employed full time (65%), and were satisfied with their income (60%).

It is worth noting that the group of chemsex users described their employment and income similarly as the comparison group (the same age and residence were the criteria for choosing the comparison group).

Chemsex in Czechia

In Table 1, we can see some characteristics of the sexual behaviour of chemsex users (N = 87) and the comparison group (N = 261). Chemsex users engaged in sexual activities more often than the comparison group ($\chi^2 = 36.7$, $p < 0.001$), they had significantly more non-steady sexual partners ($\chi^2 = 92.4$, $p < 0.001$), and more often have had more than 10 sexual partners in the last 12

Table 1. *Sexual behaviour of chemsex users*

	Chemsex n (%)	Control n (%)
Recent sex		
7 days	56 (64)	100 (39)
4 weeks	82 (94)	159 (61)
Sober sex in the last 4 weeks	48 (55)	155 (59)
Sex with 2 or more partners		
Me and two others	14 (20)	38 (23)
Me and three or more people	29 (41)	7 (4)
Number of sex partners in the last 12 months		
Up to 10	41 (47)	211 (81)
More than 10	46 (53)	50 (19)
Steady partner		
I have a steady partner	33 (38)	126 (48)
I am single	47 (54)	121 (46)
Sex with steady partner in the last 12 months	49 (56)	142 (54)

months ($\chi^2=37.1$, $p<0.001$). Chemsex users had a steady partner similarly often as the comparison group ($\chi^2=3.1$, $p<0.3$) and similarly often had sex with that partner in the last year ($\chi^2=0.1$, $p<0.8$). Interestingly, the chemsex group did not differ from the comparison group in frequency of sober sex (Mann-Whitney U test $p<0.8$).

In Figure 1, we see that most of our respondents tend to have either chemsex in a larger group of 4 or more people (41%) or chemsex in a couple (39%). The variant of chemsex in a trio, whether with a steady partner and another man or with two non-steady partners, is less common (7% and 13%, respectively).

Risks

In Table 2, we can see the frequencies of recent risky sexual behaviours among chemsex users and in the comparison group. Chemsex users more likely engaged in condomless sex with non-steady partners ($\chi^2=46.8$, $p<0.001$), had dramatically more STIs such as HIV ($\chi^2=52.9$, $p<0.001$), HCV ($\chi^2=25.9$, $p<0.001$), and syphilis ($\chi^2=41.5$, $p<0.001$). The groups did not differ in the frequency of selling sex ($\chi^2=0.2$, $p<0.7$).

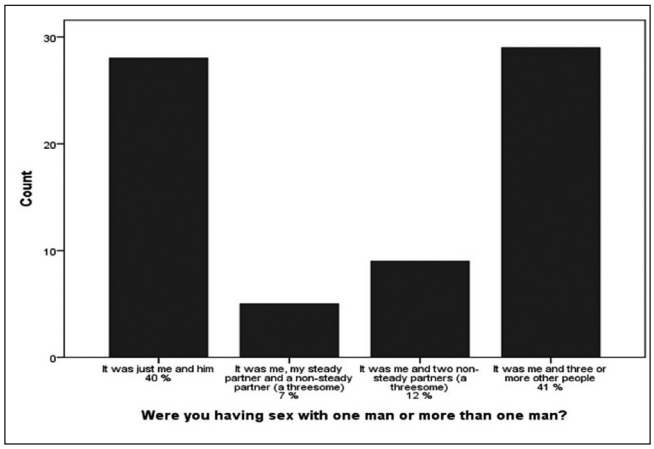

Fig. 1. *Number of partners in one chemsex session.*

Table 2. *Health risks*

	Chemsex n (%)	Control n (%)
Male non-steady partners without a condom in the last 12 months – no intercourse without condom	28 (34)	191 (76)
Frequently selling sex	2 (2)	4 (2)
Injecting drugs to get high in the last 12 months	19 (22)	1 (0.4)
HIV status positive	32 (39)	17 (7)
HCV infection (lifetime)	10 (11)	1 (0.4)
Syphilis in the last year	10 (12)	3 (1)
Gonorrhea in the last year	5 (6)	11 (4)

Use of Substances

Table 3 provides an overview of the addictive substances used by the chemsex group in the last 24 hours and the last four weeks.

Pervitin (meth) use dominated among chemsex users (3/4 respondents from the target group reported using pervitin in the last 4 weeks) in contrast with very marginal 4% share of mephedrone use. Half of the identified chemsex users reported GHB/GBL use in the last four weeks. Ketamine resulted as an important substance on the Czech chemsex scene (used by 13% of users).

Injecting substance use in the last 12 months was mentioned by 22% (19 out of 87) of respondents from the chemsex group; 3% of users (3 out of 87) have recently shared a syringe. One respondent (0.4%) mentioned injecting in the last 12 months in the comparison group. Chemsex users more often mentioned injecting use ($\chi^2=62.1$, $p<0.001$), more often reported poppers use ($\chi^2=6.2$, $p<0.05$), and use of erection-promoting drugs ($\chi^2=12$, $p<0.01$). Chemsex users were more likely to use cannabinoids ($\chi^2=98.5$, $p<0.001$) but not alcohol ($\chi^2=86.5$, $p<0.3$). At the same time, the chemsex group did not report more concerns about their substance use than the comparison group ($\chi^2=0.1$, $p<0.8$).

Hypothesis Testing

Concerning our first hypothesis, we expected that chemsex users would show to have more mental problems than the comparison group. In Table 4, we can see an overview of PHQ-4 scores and reported self-harm or suicidal ideation.

There are no significant differences between chemsex users and the comparison group in the incidence of severe symptoms of anxiety and depression ($\chi^2=0.2$, $p<0.7$) or in suicidal/self-harm ideation ($\chi^2=2.1$, $p<0.2$). Although, the non-significant differences between the groups were in the expected direction (more symptoms in the target group) we did not confirm our first hypothesis.

In our second hypothesis, we expected that chemsex users would experience more problems with their sexual identity than the comparison group (operationalized as less openness to sexual identity and more internalized homonegative attitudes). In Table 5, we can see an overview of the examined variables.

Chemsex users did not conceal their sexual identity more often than the comparison group. On the contrary, 69% of them were out to significant others in their lives (compared to 53% in the comparison group). The difference was statistically significant ($\chi^2=8.8$, $p<0.05$). In addition, chemsex users did not differ in

Table 3. *Addictive substances in Czech chemsex users*

Substance	Used in the last 24 hours n (%)	Used in the last 4 weeks n (%)
Alcohol	33 (38)	71 (82)
Tobacco products	47 (54)	57 (66)
Viagra, Cialis or other substances designed to get/keep erection	7 (8)	39 (45)
Poppers	23 (26)	55 (63)
Cannabis	15 (17)	45 (52)
Synthetic cannabinoids	3 (4)	5 (6)
GHB/GBL	13 (15)	47 (54)
Ketamine	5 (6)	11 (13)
Sedatives or tranquilizers (Valium, Rivotril, Xanax)	5 (6)	12 (14)
Heroin or related drugs (poppy straw, fentanyl)	2 (2)	2 (2)
Ecstasy (E, XTX, MDMA)	6 (7)	23 (30)
Methamphetamine (pervitin, crystal, tina)	24 (28)	65 (75)
Mephedrone	2 (2)	3 (4)
Cocaine	4 (5)	6 (7)
LSD	3 (4)	4 (5)

Table 4. *Mental problems in chemsex users group*

	Chemsex n (%)	Control n (%)
Severe anxiety and depression	7 (8)	17 (7)
Self-harm ideation in the last two weeks	19 (22)	39 (15)

Table 5. *Openness regarding sexual orientation, homonegative attitudes, and sexual dissatisfaction among chemsex users and comparison group*

	Chemsex n (%)	Control n (%)
Outness		
Out to none	5 (6)	42 (16)
Out to some	22 (25)	78 (31)
Out to all	59 (69)	134 (53)
Short internalised homonegativity – median score	1.2	1.3
Perceived lack of social support	6 (16)	14 (10)

the level of internalized homonegativity either (Mann-Whitney U test, $p<0.8$). Both groups had also similar levels of social support ($\chi^2=0.9$, $p<0.4$). Hence, we did not support our second hypothesis.

Our last hypothesis was based on our literature review that has, so far, unsatisfactorily responded to the question of whether Czech chemsex users have impeded satisfaction with their sex life.

In Table 6, we can see differences in sexual satisfaction between chemsex users and the comparison group. Chemsex users were clearly and significantly more satisfied with their sex life than the comparison group (Mann-Whitney U test, $p<0.001$).

Table 6. *Satisfaction in sex life*

	Chemsex	Control
Sexual unhappiness – median score	3.4	4.9

DISCUSSION

Chemsex has been recently experienced by 5% of all our respondents. A similar incidence of chemsex was reported in the EMIS project (28) and also in neighbouring countries such as Germany, Austria and Poland. Online research on chemsex targeting a broader population of MSM (such as ours) is likely to underestimate the prevalence of chemsex use within the MSM population (23). Some of the differences were probably caused by differences in methodology, including the specific addictive substances included in the studies (any stimulants versus pervitin and mephedrone only), or the required frequency of substance use for chemsex users (last year to last week): Procházka (29) using the same data (EMIS) speaks of chemsex prevalence of 11% (last year) to 16% (once in the lifecycle). Thus, based on our evidence and results from other studies, it is possible to say that the incidence of chemsex in the Czech MSM population is at least 5% in terms of active users in the last four weeks.

Our respondents – chemsex users did not differ significantly from the comparison group in such indicators as employment, satisfaction with income, or having a steady partner. Similar results were obtained by Torres et al. (7).

There is a specific distribution of addictive substances on the Czech chemsex scene. In fourchems, pervitin was the most common (3/4 of chemsex respondents had used pervitin in the last four weeks, and 1/3 in the last 24 hours). Mephedrone use was scarcely reported. Similar results were obtained by Pitoňák et al. (30), the second position takes GHB/GBL, which was used by half of the chemsex group respondents in the last four weeks.

The use of cannabinoids was quite common – half of the chemsex sample used cannabinoids in the last four weeks. The use of cannabinoids by Czech chemsex users deserves further

research, specifically in terms of their motivations for cannabinoid use.

Surprisingly frequently reported use of MDMA (1/3 of users in the last 4 weeks) could be a result of a misunderstanding: despite provided clarification in parentheses, MDMA was probably confused with GHB/GBL, which in Czech slang is referred to as ecstasy so often that the original link between the name and MDMA gradually disappears. If that was the case, our results might underestimate the GHB/GBL use.

About 1/5 of chemsex users were injecting drugs in the last year (compared to the rare incidence of injecting in the whole cohort). Pakianathan et al. (4) reported injecting use in less than a third of chemsex users, but there was a lack of knowledge about safer injection (31, 32). Chemsex culture seems to be associated with riskier substance use, both in terms of mode and frequency of use.

Chemsex tends to be regarded as a "cure" for loneliness or a breakup remedy, but it also negatively influences existing relationships (2, 33, 34). In our study, chemsex users had steady partners as often as the comparison group. But we did not ask about the quality of these relationships, and if we had asked more in-depth, we might have identified specific differences in the quality of their relationship functioning. Our results thus only show that chemsex is not necessarily associated with the breakdown of a partnership or the impossibility of establishing or maintaining such a relationship while being a chemsex user.

Of the total chemsex users in our sample, 39% were HIV positive, 11% had HCV infection, 4% recently had syphilis, and 6% recently had gonorrhea. Chemsex use is consistently associated with a higher incidence of STIs, especially HIV (13, 23). Not surprisingly, chemsex users were more likely to have sex without a condom and had more sexual partners than the comparison group, just like in other studies and countries (8, 16, 17, 35). Nevertheless, a third of chemsex group consistently used a condom during each intercourse. Chemsex does not have a clear link to sex work, and it probably depends on other circumstances (36).

Somewhat unexpectedly, the Czech chemsex users were more satisfied with their sex lives than the comparison group. This was a surprising finding because in the literature we usually encounter a description of the adverse effects of chemsex on sexual life (31, 34). The negative impact of chemsex can be substantial, but it may affect only minority of chemsex users (2, 3, 37). One potential explanation is that we reached a larger number of new chemsex users or low-intensity users in our sample. Thus, our respondents might not have yet experienced the harmful effects of chemsex on their daily lives. This interpretation is also indicated by the fact that our respondents were still actively involved in sober sex (half of the respondents had sober sex in the last month, and the comparison group was in a similar situation). The lack of sober sex or decreasing capacity for it is one of the specific symptoms of problematic chemsex (31, 34).

Quantitatively, chemsex users had significantly more contact sex than the comparison group (this is not surprising; chems may help overcome initial shyness or inhibitions and thus facilitate sexual contact). Thus, chemsex can contribute to sexual life satisfaction by making sex more available (it may be more difficult for the comparison group to initiate and stand erotic interactions with other people). The quality of sexual experiences of chemsex users need to be further investigated.

Our results suggest that there are chemsex subcultures in Czechia, varying based on the number of substances used, how they are used, sexual behaviour, and maybe different motivation to chemsex. Chemsex subcultures require further research, because different chemsex norms, and different chemsex behaviours are connected to different risks and require different harm reduction interventions.

We expected that chemsex users would have more mental and social problems than MSM who did not engage in chemsex, but the evidence did not support that expectation: chemsex users in our study were not more anxious or depressed than the comparison group. This finding contrasts with both previous clinical experience and many empirical studies suggesting that clinically significant depressive and/or anxious symptoms were associated with chemsex (2, 33, 38, 39). Yet, some studies have reported similar results (18).

We further assumed that chemsex users would experience more difficulties in their sexual identity disclosure, as well as we expected chemsex users to have more self-stigmatizing attitudes as operationalized by internalized homonegativity. Our hypotheses were, however, not confirmed. On the contrary, Czech chemsex users were more out to important others in their lives than the respondents from the comparison group. The measured rate of chemsex users' internalized homonegativity was similar to the comparison group. This would require an in-depth exploration to gain more understanding of complex and more profound motivation, vulnerabilities, neglected concerns, or some specific self-medication purpose of chemsex use (40).

As we already mentioned, it is possible that in our specific sample of chemsex users, we captured mostly beginners or less risky chemsex users. Nevertheless, more studies suggested that only a minority of chemsex users experienced a negative impact on their psycho-social functioning in their daily lives (2, 37). Our findings thus support interpretations that not all chemsex is problematic.

Our results suggest that chemsex is not a homogeneous phenomenon. There are different patterns of chemsex. The development of negative impacts may be conditioned by many factors, including frequency of use (2), engaging in and satisfaction with sober sex (34, 37), interference of chemsex with daily functioning (37), or riskier motives and attitudes such as "nothing left to lose" attitude in HIV positive chemsex users (22).

Limitations

The weakness of the research is the self-selection of respondents and the degree to which they were willing to share their experiences in online research. Some questions were formulated generally and may have overlooked otherwise complex intrapsychic and behavioural phenomena. Our respondents could refuse to identify with drug users and respond under the influence of self-defence mechanisms or under the influence of social desirability. Our sample size was relatively small.

CONCLUSION

In this research, we intended to provide an insight into the largely unexplored Czech chemsex scene. In our sample, chemsex use was not connected to unpleasant outcomes commonly associated with this phenomenon: our respondents were satisfied with

their sex life (significantly more satisfied than non-users), had no major problems with sober sex, did not observe more anxiety or depressive symptoms, were more open about their own sexual identity and did not have more internalized homonegative attitudes than the comparison group. Most chemsex research focuses on users' risk and needs of services. It would be interesting to examine chemsex in people who do not experience the heavy negative impact of chemsex to see whether there are healthier forms or styles of chemsex use and look for protective factors in chemsex.

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Conflict of Interests

None declared

Adherence to Ethical Standards

Ethics approval was granted to the Sigma Research at the London School for Hygiene and Tropical Medicine, the EMIS 2017 consortium partner responsible for the survey questionnaire.

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