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Chemsex among men – a questionnaire study

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BACKGROUND

The purpose of the study was to map the incidence of recreational drug use during sex (chemsex) among a sample of male patients at the Olafia Clinic in Oslo, an outpatient clinic offering screening and treatment for sexually transmitted infections. We wanted to identify the variables within mental health, sexually transmitted infections and sexual behaviour that were associated with chemsex for men who have sex with men, and men who have sex with women.

MATERIAL AND METHOD

The study was anonymous and was based on questionnaires answered by male patients at the outpatient clinic in the period from 1 July 2016 to 20 October 2016.

RESULTS

The response rate was 96 % (1050 received the form, 1013 were included). Of these, 144 (14 %) reported having chemsex during the last year – 87 (17 %) were men who have sex with men and 57 (12 %) men who have sex with women. Of those who had chemsex, more men who had sex with men reported HIV infection, syphilis, more than ten sexual partners, and participation in sex parties during the previous year. More men who have sex with women reported mental health problems.

INTERPRETATION

There should be a more thorough assessment of how the health services can best meet the needs of chemsex users. In particular, it is important to provide information on harm reduction and support to those who want to stop or reduce their use of chemsex.

London and other European cities report on the use of recreational drugs during sex (often referred to as 'chemsex') particularly among men who have sex with men (1–8). There are no Norwegian studies on such behaviour. We carried out a questionnaire study on chemsex among a sample of male patients at the Olafia Clinic in order to examine incidence, mental health variations, sexual health and sexual behaviour that may be associated with chemsex, and whether there were differences between men who have sex with men and men who have sex with women.

A common definition of chemsex is the use of methamphetamine, mephedrone and/or gamma-hydroxybutyric acid (GHB)/gamma butyrolactone (GBL) during sex among men who have sex with men (1, 4, 5). During consultations at the Olafia Clinic, both men who have sex with men *and* men who have sex with women described the use of various drugs such as methamphetamine, cocaine, ketamine and GHB during the sex act to heighten the total experience. Therefore, we decided to include ketamine and cocaine in our definition of chemsex (3, 6) (Table 1) (9–11). Sex-related drugs use has been reported among women (12), but no female patients have told us about using drugs primarily during sex. Consequently, in this first Norwegian study, we chose to examine such behaviour solely among men.

Table 1

Drugs used during chemsex (9–11)

	Methamphetamine	GHB and GBL	Mephedrone	Cocaine	Ketamine
Description	Synthetic CNS stimulant	Occurs naturally in the body and is a signalling substance in the brain. Depressant that is produced synthetically. GBL is converted to GHB in the body	Synthetically produced (from the khat plant), CNS stimulant that resembles amphetamine	CNS stimulant from the leaves of the coca plant, giving an intense but short-lived 'high'	Anaesthetic agent used in veterinary practice and as a general anaesthetic in Norwegian field hospitals
Street name	Tina, Meth, Ice, Glass	Gina, G, *Kork*	Meow meow, Mcat, White Magic	*Kola*, Coke	K, special K

	Methamphetamine	GHB and GBL	Mephedrone	Cocaine	Ketamine
Administration	Smoked, inhaled, injected, inserted rectally	Swallowed in liquid form	Inhaled, swallowed in a paper wrap, pills, injected, inserted rectally	Inhaled, smoked, chewed (coca leaves)	Inhaled, injected, peroral tablets
Effects	Euphoria, increased energy, diminished impulse control, sexual stimulation	Euphoria, diminished impulse control, sexual stimulation, relaxing effect	Euphoria, increased energy, diminished impulse control, sexual stimulation	Well-being, increased self-esteem, increased energy, may boost sex drive	Changes of perception, euphoria, pain relief
Negative effects	Sleep disorders, palpitations, faster pulse and increased blood pressure, agitation	Loss of consciousness ('G sleep'), sluggishness, memory loss, coma and death (easy to overdose)	Nausea, hallucinations, paranoia, anxiety	Sleeplessness, anxiety, hyperactivity, elevated pulse, high blood pressure, arrhythmia, irritability, long-term use can cause erectile dysfunction	Hallucinations, disassociation, agitation, nausea, vomiting, loss of consciousness, impaired coordination/motor functioning, bladder damage

Material and method

STUDY POPULATION

The study population consisted of male patients at the Olafia Clinic who had had sex during the previous year, were over the age of 16 and could read English or Norwegian. In order to ensure that the questionnaire was relevant and acceptable, we interviewed several patients at the Olafia Clinic who told us on their own initiative about their use of chemsex.

DATA COLLECTION

In the period from 1 July 2016 to 20 October 2016, we distributed 1050 questionnaires to volunteer male patients who had registered themselves in reception at the Olafia Clinic. They were asked to complete the form anonymously (it took 5–10 minutes to answer) and then to leave it in a locked postbox in the waiting room, regardless of whether they had answered or not.

THE QUESTIONNAIRE

We conducted a pilot study of the questionnaire among 20 patients who were not included in this study, which resulted in a number of revisions prior to the final version. The questionnaire was four pages long, and contained 48 questions (see the appendix). We employed the validated Hopkins Symptom Check List (HSCL-10) as a screening tool to measure psychological distress. It contains ten questions about symptoms of depression and anxiety in the previous two weeks (13).

ETHICS

The Regional Committee for Medical and Health Research Ethics (REC) concluded that the study was not subject to notification and that informed consent was therefore not necessary. The data protection officer at Oslo University Hospital considered the study to be anonymous and not subject to notification.

DATA ANALYSIS

In the data analysis, we chose to include data from men who had sex with both women and men in the category men who have sex with men, as has been done in similar studies (3, 4, 14). The purpose of the analysis was to compare two sets of groups: men who had had chemsex versus men who had not had chemsex, and men who have sex with men versus men who have sex with women. First we carried out descriptive analyses followed by a

logistic regression analysis. We used multivariate logistic regression analysis with eleven variables (15). With the exception of age (continuous variable), the variables are dichotomised (Yes/No). The following variables were included in the multivariate analysis: age, mental health problems, HIV, hepatitis C, gonorrhoea, syphilis, chlamydia, more than ten sexual partners, post-exposure prophylaxis, participation in an organised sex party and sex only with women. The statistical significance was set to $p < 0.05$ and we rounded up all percentages to the nearest whole per cent. The analyses were performed using SPSS version 23 (IBM SPSS Statistics for Windows, version 24.0 IBM Corp., Armonk, NY, USA).

Results

A total of 1031 forms were returned and we excluded 18 forms because of lack of completion, giving a response rate of 96 %. Altogether 144 (14 %) people reported having chemsex in the last year, with a somewhat higher proportion of men who had sex with men than men who had sex with women (17 % vs. 12 %). We found no major differences in sociodemographic characteristics for the group who had had chemsex compared with those who had not had chemsex in our sample (Table 2). In both groups, the majority of people had higher education, lived in Oslo, and were in employment, and the average age was 33. Some 40 % stated that they had a steady partner.

Table 2

Sociodemographic data for male patients at the Olafia Clinic who answered the questionnaire on chemsex (July–October 2016), in total and in relation to the use of chemsex, n (%). The Olafia Clinic is a drop-in clinic for screening and treating sexually transmitted infections and is a unit of Oslo University Hospital. The respondents could leave out questions, so the total is not always 100 %

	Had chemsex (n = 144)	Has not had chemsex (n = 857)	Total (N = 1001)
Age (mean, standard deviation)	33.0 (8.0)	33.2 (9.4)	33.2 (9.2)
< 25 years	15 (10)	115 (13)	136 (13)
25–45 years	111 (77)	626 (73)	746 (74)
< 45 years	18 (13)	116 (14)	131 (13)
Duration of residence in Norway			
< 5 years	9 (6)	50 (6)	59 (6)
5–10 years	14 (10)	51 (6)	65 (6)
> 10 years	121 (84)	761 (89)	882 (87)
Place of residence			
Oslo	138 (96)	784 (91)	933 (92)
Elsewhere in Norway	3 (2)	52 (6)	56 (6)
Another country	2 (1)	17 (2)	19 (2)
Refugee status: Asylum seeker/ refugee	5 (3)	14 (2)	19 (2)
Educational level: University college/university	100 (70)	647 (75)	755 (75)
Work status: In work or pursuing studies	131 (91)	794 (93)	935 (92)
Civil status: Steady partner	56 (39)	334 (39)	398 (40)
Self-reported sexual orientation			
Homosexual	74 (51)	361 (42)	437 (43)
Bisexual	12 (8)	58 (7)	71 (7)
Heterosexual	58 (41)	430 (50)	495 (49)
Other	0	4 (0.5)	4 (0.5)
Has sex with			

	Had chemsex (n = 144)	Has not had chemsex (n = 857)	Total (N = 1001)
Men	74 (51)	353 (41)	429 (42)
Men and women	13 (9)	76 (9)	89 (9)
Women	57 (40)	422 (49)	488 (48)

Compared with non-chemsex users, chemsex users reported a higher proportion of mental health problems, HIV and hepatitis C, sexually transmitted bacterial infections, participation in group sex and organised sex parties as well as eleven or more sexual partners during the previous 12 months (Table 3). There was a statistically significant association between chemsex and HIV infection, reported syphilis in the previous year, more than ten sexual partners and participation in sex parties in the previous year, and also mental health problems in the previous two weeks (Table 4). Of those who had had chemsex, only men who had sex with men reported having HIV infection and syphilis in the previous year. This group also reported having more sexual partners and participating more often in group sex and organised sex parties than men who had sex with women. Of those who had had chemsex, men who have sex with women more often reported mental health problems, less frequent use of condoms and less frequent HIV testing compared with men who have sex with men (Table 3).

Table 3

Self-reported mental health problems, sexually transmitted infections and sexual habits in the previous 12 months, in total and in relation to the use of chemsex and sexual partners, n (%). MSM = men who have sex with men and men who have sex with men and women, MSW = men who have sex with women only

Variables	Chemsex (n = 144)		Non chemsex (n = 857)	Total (N = 1001)
	MSM (n = 87)	MSW (n = 57)		
Mental health problems: Yes	18 (21)	21 (37)	156 (18)	195 (19)
Condom use with casual partners				
Almost always/always	39 (45)	8 (14)	399 (47)	450 (44)
Sometimes	24 (28)	11 (19)	134 (16)	171 (17)
Almost never/never	21 (24)	32 (56)	247 (29)	308 (30)
Number of sexual partners				
1–10	35 (40)	40 (70)	683 (80)	767 (76)
≥ 11	51 (59)	17 (28)	166 (19)	236 (23)
HIV:				
Has HIV	18 (21)	0	26 (3)	44 (4)
Does not have HIV	66 (76)	40 (70)	647 (76)	761 (75)
Not HIV tested/Don't know	1 (1)	16 (28)	156 (18)	188 (19)
Hepatitis C				
Yes	8 (9)	2 (4)	14 (2)	24 (2)
No	75 (86)	52 (91)	797 (93)	934 (92)
Not tested/Don't know	1 (1)	0	29 (3)	31 (3)
Gonorrhoea: Yes	22 (25)	0	75 (9)	98 (10)
Syphilis: Yes	13 (15)	0	16 (2)	29 (3)
Chlamydia: Yes	23 (26)	18 (32)	107 (13)	151 (15)
Participated in group sex				
Yes	72 (83)	16 (28)	219 (26)	308 (30)
No	13 (15)	40 (70)	627 (73)	690 (68)

Variables	Chemsex (n = 144)		Non chemsex (n = 857)	Total (N = 1001)
	MSM (n = 87)	MSW (n = 57)		
Don't remember	1 (1)	1 (2)	3 (0.5)	5 (0.5)
Participated in organised sex party				
Yes	40 (46)	2 (4)	49 (6)	93 (9)
No	46 (53)	55 (97)	802 (94)	912 (90)
Don't remember	0	0	2 (0.5)	2 (0.5)

Table 4

Comparison of chemsex users and non-chemsex users, unadjusted and adjusted[1] odds ratio (OR) with 95 % confidence interval (95 % CI). All data on sexual behaviour and sexually transmitted infections are reported for the previous 12 months

Variables	Unadjusted analyses			Adjusted analyses		
	OR	95 % CI	P-value	OR	95 CI	P-value
Mental health problems	1.9	1.2–2.8	0.005	1.9	1.2–3.0	0.012
Has HIV	4.6	2.4–8.6	< 0.001	3.1	1.3–7.6	0.014
Has/has had hepatitis C	4.5	1.9–10.3	< 0.001	1.3	0.4–4.4	0.664
Has had gonorrhoea	1.9	1.1–3.1	0.016	0.6	0.3–1.3	0.236
Has had syphilis	5.2	2.5–11.1	< 0.001	4.9	1.7–14.0	0.003
Has had chlamydia	2.8	1.8–4.2	< 0.001	1.6	0.9–2.8	0.083
Has had > 10 sexual partners	3.7	2.6–5.4	< 0.001	2.6	1.6–4.3	< 0.001
Has used post-exposure prophylaxis	2.2	1.1–4.4	0.022	1.9	0.8–4.5	0.139
Participated in organised sex parties	6.8	4.3–10.8	0.001	5.3	2.9–9.6	< 0.001
Has sex with women only	0.7	0.5–1.0	0.027	1.5	0.9–2.4	0.163
Age	1.0	1.0–1.0	0.818	1.0	1.0–1.0	0.279

[1]Adjusted for all variables in the table (dichotomised as Yes/No, apart from age which we entered as a continuous variable).

Table 5 shows the characteristics of chemsex jointly and separately for men who have sex with men and men who have sex with women. Altogether 75 % of the 144 people having chemsex, had had this more than once. More men who had sex with men reported using GHB/GBL (43 %) and methamphetamine (23 %), while men who had sex with women mainly reported using cocaine (79 %). Almost half of the men in the sample reported never or almost never using a condom during chemsex. Some 13 % wanted to stop having chemsex.

Table 5

Details regarding use of chemsex, in total and in relation to sexual partners, n (%). The respondents could leave out questions, so the total is not always 100 %. MSM = men who have sex with men and men who have sex with men and women, MSW = men who have sex with women only.

	MSM n = 87 (%)	MSW n = 57 (%)	Total N = 144 (%)
Number of times having had chemsex			
Once	19 (22)	17 (30)	36 (25)
≥ 2 times	68 (78)	40 (70)	108 (75)

	MSM n = 87 (%)	MSW n = 57 (%)	Total N = 144 (%)
Drugs used during chemsex[1]			
Cocaine	45 (52)	45 (79)	90 (63)
GHB/GBL	37 (43)	4 (7)	41 (29)
Methamphetamine	20 (23)	4 (7)	24 (17)
Ketamine	9 (10)	7 (12)	16 (11)
Mephedrone	8 (9)	1 (2)	9 (6)
Reasons for having chemsex[1]			
Increased pleasure	57 (66)	25 (44)	82 (57)
Increased arousal	46 (53)	21 (37)	67 (47)
Enhanced performance	22 (25)	12 (21)	34 (24)
Low self-esteem	5 (6)	3 (5)	8 (6)
Pressure from partner	4 (5)	1 (2)	5 (3)
Other	9 (10)	19 (33)	28 (19)
Where chemsex partners were found[1]			
Via internet/app	49 (56)	3 (5)	52 (36)
Sauna	6 (7)	0	6 (4)
Sex club	5 (6)	2 (4)	7 (5)
Cruising site	2 (2)	2 (4)	4 (3)
Other	26 (30)	32 (56)	68 (47)
Where chemsex took place[1]			
Private home	68 (78)	37 (65)	105 (73)
Sex party in private home	28 (32)	1 (2)	29 (20)
Hotel	21 (24)	9 (16)	30 (21)
Sauna	9 (10)	0	9 (6)
Sex club	8 (9)	0	8 (6)
Cruising site	2 (2)	1 (2)	3 (2)
Other	1 (1)	6 (11)	7 (5)
Physical problems because of chemsex			
Almost never/never	67 (77)	36 (63)	103 (72)
Sometimes	9 (10)	4 (7)	13 (9)
Almost always/always	4 (5)	1 (2)	5 (3)
Experienced mental stress because of chemsex			
Almost never/never	66 (76)	34 (60)	100 (7)
Sometimes	11 (13)	4 (7)	15 (10)
Almost always/always	3 (3)	2 (4)	5 (3)
Used condom during chemsex			
Almost never/never	37 (43)	30 (53)	67 (47)
Sometimes	11 (13)	5 (9)	16 (11)
Almost always/always	31 (36)	7 (12)	38 (26)
Had sexual activity during chemsex that was later regretted			
Yes	19 (22)	8 (14)	27 (19)
No	45 (52)	25 (44)	70 (49)
Uncertain	14 (16)	8 (14)	22 (15)
Wanted to stop having chemsex			
Yes	13 (15)	5 (9)	18 (13)
No	37 (43)	16 (28)	53 (37)
Uncertain	28 (32)	21 (37)	49 (34)

[1]Multiple responses possible.

Discussion

Altogether 14 % in our sample reported having chemsex in the previous year, and there was

little difference between the proportion of men who have sex with men (17 %) and men who have sex with women (12 %). We found a significant association between chemsex and mental health problems, HIV infection and syphilis, more than ten sexual partners and participation in sex parties.

THE STUDY'S STRENGTHS AND WEAKNESSES

The strength of the study is the high response rate (96 %). The reason may be that the questionnaire is anonymous and that there is a long waiting time in the outpatient clinic (often more than an hour). The staff in reception who distributed the forms informed the patients about the study and that participation was voluntary.

A weakness of the study is that only patients from one venereological outpatient clinic in Oslo were included. The results are therefore not directly transferable to the general male population. Our formulation of questions could have been more specific in terms of how often patients had taken recreational drugs in connection with sex (chemsex). We could have asked if they used the drug primarily to enhance sexual pleasure, and stressed that the questions were not about having casual sex after taking drugs. Another weakness is the self-reporting of infections. We did not ask when they had last been tested for sexually transmitted infections other than HIV, nor do we know how many received a diagnosis during their visit to the clinic. The real incidence of sexually transmitted bacterial infections in the previous year may therefore be higher in the sample than the self-reported data indicate.

We found a significant association between chemsex and HIV infection and syphilis for men who have sex with men, while none of the men who have sex with women reported such infections. Earlier studies have found a correlation between the use of chemsex and sexually transmitted infections, but it is uncertain whether chemsex leads to an increase in sexually transmitted infections or if those with increased occurrence of infections have more chemsex (2–4, 12, 16, 17). The incidence of HIV and syphilis in Norway is considerably higher among men who have sex with men than among men who have sex with women (18). The risk of meeting sexual partners with syphilis or undiagnosed, untreated and therefore infectious HIV is thus probably greater for men who have sex with men. Those who had had chemsex in this group more often stated that they had had more than ten partners and had participated in organised sex parties in the previous 12 months than men who had sex with women. Increased sexual appetite and diminished impulse control due to some recreational drugs can lower one's threshold for accepting invitations to sex parties. It is also possible that sex parties entail participating in a sexualised 'recreational drugs culture' where drugs are more frequently offered. Using chemsex-related drugs can also make it easier to have sex with several partners over the course of a few days (5, 6, 9). This can lead to rectal and penile erosion, which in turn increases the risk of sexually transmitted infections, including HIV, when having sex without a condom (3, 6, 9).

Men who have sex with women mainly used cocaine and more infrequently methamphetamine, mephedrone and GHB compared with men who have sex with men. Cocaine does not give a corresponding increase in energy for prolonged sexual activity as is the case for methamphetamine, and does not diminish impulse control to the same degree as GHB/GBL and mephedrone. In addition, the risk of traumas is less with vaginal sex. In Norway in general, there is a lower incidence of HIV, syphilis and gonorrhoea among men who have sex with women than among men who have sex with men (18, 19). These factors may help to explain why men who have sex with women and have had chemsex do not report HIV, syphilis or gonorrhoea.

Of those who have had chemsex, men who have sex with women reported a higher incidence of mental health problems in the previous two weeks than men who have sex with men. We do not know if these men had a higher incidence of mental health problems before they started using chemsex or whether chemsex resulted in mental health problems. Chemsex users have increased risk of overdose, psychosis, memory loss, depression and

dependence (6, 9). We found that men who had sex with men used GHB/GBL to a greater degree, which can more easily lead to overdose than other drugs and potentially to coma and death (6, 9). Only one person in our sample had been admitted to a medical ward (no one had been admitted to a psychiatric ward) on account of chemsex, but from a harm reduction perspective, chemsex users should be informed of the danger of overdose, particularly when using GHB/GBL.

Altogether 13 % of the chemsex users wanted to stop. As of today, patients in Norway can be referred to therapists in psychiatry and drug addiction, or can be informed about programmes offered by organisations such as Gay and Lesbian Health Norway or HivNorway. The health authorities should devise guidelines for how best to help patients who find the use of chemsex a problem, particularly keeping harm reduction in mind (20). Recreational drug use is stigmatised, and the drugs encompassed by our definition of chemsex are illegal. To encourage patients to dare to give information about their drug use, healthcare workers at the Olafia Clinic and other similar treatment centres must have an unbiased attitude to the phenomenon of chemsex. This can be achieved by having a poster on the wall about chemsex, and also by asking patients about their use in a neutral manner (21).

Conclusion

Chemsex users among men who have sex with men should be informed about possible increased risk of sexually transmitted infections, including HIV, and should be offered regular testing for these infections. The health services should refrain from moralising and focus on giving information about harm reduction measures.

MAIN MESSAGE

In a sample of male patients at the Olafia Clinic, 14 % had used recreational drugs during sex (chemsex) in the course of the previous year – 17 % were men who had sex with men and 12 % were men who had sex with women.

Of those who had chemsex, more men who had sex with men reported HIV and syphilis infections, more than ten sexual partners and participation in sex parties, than men who had sex with women.

Chemsex users among men who have sex with women reported having mental health problems.

REFERENCES:

1. Ahmed AK, Weatherburn P, Reid D et al. Social norms related to combining drugs and sex ("chemsex") among gay men in South London. Int J Drug Policy 2016; 38: 29 - 35. [PubMed][CrossRef]

2. Daskalopoulou M, Rodger A, Phillips AN et al. Recreational drug use, polydrug use, and sexual behaviour in HIV-diagnosed men who have sex with men in the UK: results from the cross-sectional ASTRA study. Lancet HIV 2014; 1: e22 - 31. [PubMed][CrossRef]

3. Hegazi A, Lee MJ, Whittaker W et al. Chemsex and the city: sexualised substance use in gay bisexual and other men who have sex with men attending sexual health clinics. Int J STD AIDS 2017; 28: 362 - 6. [PubMed][CrossRef]

4. Attitudes to and Understanding of Risk of Acquisition of HIV (AURAH) Study Group. Poly drug use, chemsex drug use, and associations with sexual risk behaviour in HIV-negative men who have sex with men attending sexual health clinics. Int J Drug Policy 2017; 43: 33 - 43. [PubMed][CrossRef]

5. Stuart D. Sexualised drug use by MSM: background, current status and response. HIV Nursing 2013; 13: 6 - 10.

6. Bourne A, Reid D, Hickson F et al. The Chemsex Study: drug use in sexual settings among gay and bisexual men in Lambeth, Soutwark & Lewisham. London: Sigma Research, London School of Hygiene & Topical Medicine, 2014.
https://www.lambeth.gov.uk/sites/default/files/ssh-chemsex-study-final-main-report.pdf (15.5.2018).

7. Bourne A, Reid D, Hickson F et al. "Chemsex" and harm reduction need among gay men in South London. Int J Drug Policy 2015; 26: 1171 - 6. [PubMed][CrossRef]

8. EMIS Network. Illicit drug use among gay and bisexual men in 44 cities: Findings from the European MSM Internet Survey (EMIS). Int J Drug Policy 2016; 38: 4 - 12. [PubMed][CrossRef]

9. Macfarlane A. Sex, drugs and self-control: why chemsex is fast becoming a public health concern. J Fam Plann Reprod Health Care 2016; 42: 291 - 4. [PubMed][CrossRef]

10. Folkehelseinstituttet. Fakta om kokain.
https://www.fhi.no/historisk-arkiv/faktaark/fakta-om-kokain/(15.5.2018).

11. Øye I. Ketamin–medienes nye motedop? Tidsskr Nor Lægeforen 2000; 120: 1464 - 6. [PubMed]

12. Heiligenberg M, Wermeling PR, van Rooijen MS et al. Recreational drug use during sex and sexually transmitted infections among clients of a city sexually transmitted infections clinic in Amsterdam, the Netherlands. Sex Transm Dis 2012; 39: 518 - 27. [PubMed][CrossRef]

13. Strand BH, Dalgard OS, Tambs K et al. Measuring the mental health status of the Norwegian population: a comparison of the instruments SCL-25, SCL-10, SCL-5 and MHI-5 (SF-36). Nord J Psychiatry 2003; 57: 113 - 8. [PubMed][CrossRef]

14. The European men-who-have-sex-with-men Internet survey. Findings from 38 countries. Stockholm: European Centre for Disease Prevention and Control, 2013.
https://www.ecdc.europa.eu/sites/portal/files/media/en/publications/Publications/EMIS-2010-european-men-who-have-sex-with-men-survey.pdf (15.5.2018).

15. Altman DG. Practical statistics for medical research. London: Chapman & Hall/CRC, 1991.

16. Ottaway Z, Finnerty F, Amlani A et al. Men who have sex with men diagnosed with a sexually transmitted infection are significantly more likely to engage in sexualised drug use. Int J STD AIDS 2017; 28: 91 - 3. [PubMed][CrossRef]

17. Glynn RW, Byrne N, O'Dea S et al. Chemsex, risk behaviours and sexually transmitted infections among men who have sex with men in Dublin, Ireland. Int J Drug Policy 2018; 52: 9 - 15. [PubMed][CrossRef]

18. Folkehelseinstituttet. Smittevernveilederen. Menn som har sex med menn og smittevern – veileder for helsepersonell.
https://www.fhi.no/nettpub/smittevernveilederen/temakapitler/14.-menn-som-har-sex-med-menn-og-sm/ (11.1.2016).

19. Folkehelseinstituttet. Smitteveilederen. Gonore – veileder for helsepersonell.
https://www.fhi.no/nettpub/smittevernveilederen/sykdommer-a-a/gonore–veileder-for-helsepersonel/ (6.1.2016).

20. Petersson FJ, Tikkanen R, Schmidt AJ. Party and play in the closet? Exploring club drug use among Swedish men who have sex with men. Subst Use Misuse 2016; 51: 1093 - 103. [PubMed][CrossRef]

21. Frankis J, Clutterbuck D. What does the latest research evidence mean for practitioners who work with gay and bisexual men engaging in chemsex? Sex Transm Infect 2017; 93: 153 - 4. [PubMed][CrossRef]

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