TECHNICAL DOCUMENT

APPROACH TO THE PHENOMENON OF CHEMSEX

APPENDIX

Risk reduction in chemsex

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Coordinator

Raúl Soriano Ocón
Consultant in Sexual Health and Chemsex

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Drafting team *(in alphabetical order)*

Elena Adán Ibáñez.
Subdirección General de Drogodependencias del Departamento de Salud de la Generalitat de Catalunya (General Subdirectorate for Drug Dependence, Department of Health, Government of Catalonia). Barcelona.

Jordi Blanch Andreu.
Consultor. Servicio de Psiquiatría y Psicología. Hospital Clínic de Barcelona. Profesor Asociado. Universitat de Barcelona (Consultant, Psychiatry and Psychology Department, Hospital Clinic; Lecturer, University of Barcelona). Barcelona

Olivia Castillo.
Jefe de Área de Relaciones con la Unión Europea. Subdirección General de Relaciones Institucionales. Delegación del Gobierno para el Plan Nacional sobre Drogas. MS. (Head of Area, Relations with the European Union, General Subdirectorate for Institutional Relations, Government Delegation for the National Drugs Plan. Madrid.

Fernando Caudevilla.
Energy Control. Asociación Bienestar y Desarrollo. (Well-being and Development Association). Madrid.

Víctor Galán Amador.
Subdirección General de Drogodependencias del Departamento de Salud de la Generalitat de Catalunya. (General Subdirectorate for Drug Dependence, Department of Health, Government of Catalonia). Barcelona.

Jorge Néstor García Pérez.
Unidad de ITS y VIH Drassanes - Vall d'Hebron (Hospital Universitari Vall d'Hebron STI and HIV Unit Drassanes). Barcelona.

Juanse Hernández.
Grupo de Trabajo sobre Tratamientos del VIH (gTt-VIH) (HIV Treatment Working Group (gTt-VIH). Barcelona.

Rubén Mora.
Asociación Stop Sida (Stop Sida Association). Barcelona.

Laura Moreno Rozas.
Coordinación del Área de Drogas de la Asociación Bienestar y Desarrollo en Madrid (Coordination of the Drugs Area of the Well-being and Development Association). Madrid.

Raúl Soriano Ocón.
Consultor en salud sexual y chemsex (Consultant in Sexual health and chemsex). Valencia.

Jorge Valencia La Rosa.
Unidad de reducción del daño SMASD; Oficina de Salud Mental y Adicciones. Comunidad de Madrid (SMASD Harm Reduction Unit, Office for Mental Health and Addictions, Autonomous Community of Madrid).

Luis Villegas.
Asociación Stop Sida (Stop Sida Association). Barcelona.

Reviewers *(in alphabetic order)*

Julia del Amo Valero
Directora del Plan Nacional sobre el Sida. MS (Director, National AIDS Plan, Ministry of Health). Madrid.

Olivia del Castillo
Jefe de Área de Relaciones con la Unión Europea. Subdirección General de Relaciones Institucionales. Delegación del Gobierno para el Plan Nacional sobre Drogas. MS (Head of Relations With the European Union, General Subdirectorate of Institutional Relations, Government Delegation for the National Drugs Plan, Ministry of Health). Madrid.

Asunción Diaz
Unidad de Vigilancia de VIH y comportamientos de riesgo. Centro Nacional de Epidemiología. Ministerio de Ciencia e Innovación (HIV Surveillance and Risk Behaviors Unit, National Epidemiology Center). Madrid.

Javier Gómez Castellá
Plan Nacional sobre el Sida. MS (National AIDS Plan, Ministry of Health). Madrid.

Ana Koerting de Castro
Técnica Superior Externa TRAGSATEC. Plan Nacional sobre el Sida. MS (External Senior Technician [TRAGSATEC] National AIDS Plan, Ministry of Health). Madrid.

Héctor López-Mendoza
Médico Interno Residente de Medicina Preventiva y Salud Pública (Intern in Preventive Medicine and Public Health. Madrid.

Rosa Polo Rodríguez.
Jefa del Área Asistencial y de Investigación. Plan Nacional sobre el Sida. MS (Head of Care and Research, National AIDS Plan, Ministry of Health). Madrid.

María Vázquez Torres
Jefa de Área de Prevención y Coordinación. Plan Nacional sobre el Sida. MS (Head of Prevention and Coordination, National AIDS Plan, Ministry of Health). Madrid.

Autonomous Communities that participated in the review of the document

Andalusia
Catalonia
Community of Valencia
Extremadura
Murcia
Basque Country

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RISK REDUCTION IN CHEMSEX

1. RISK REDUCTION ACCORDING TO THE SUBSTANCE USED

People who engage in chemsex must have objective information on the substances they use, as well as their characteristics, dose, and effects (and duration of effect). In terms of risk reduction, it is important to consider a series of factors:

- **Potency:** Some drugs are active within a range of micrograms (eg, LSD), others at a few milligrams (eg methamphetamine, ketamine), and others with a range of 50-100 mg (eg, cocaine, mephedrone). Calculating the dose by eye may be complicated, depending on the case.

- **Type of effect:** Depending on their effects on the central nervous system, the drugs may be classified as depressants/stimulants/psychedelic. Some drugs exert a stimulant effect at low doses (alcohol, ketamine), although depressants (alcohol) and psychedelic agents (ketamine) exert an effect at higher doses. Combining substances from different groups counters the effects of both and may mask intoxication and undesired effects. The combination of GHB with other depressants (including moderate doses of alcohol) is particularly dangerous and multiplies the risk of loss of consciousness, which may lead to coma or death [(1)].

- **Duration of effect:** The duration of the effects of each substance varies; therefore, it is important to know the duration in order to calculate the dosing intervals. For example, the effects of intranasal mephedrone persist for 30-60 minutes, whereas those of methamphetamine can last for up to 6-8 hours.

- **Foreseeable adverse effects:** As with any substance, each drug has its own adverse effect profile, for example, stimulants (amphetamines, cocaine,

mephedrone) can produce tachycardia, anxiety, and insomnia; these are foreseeable, dose-dependent adverse effects, although people may be more or less susceptible to them.

- **Toxicity:** Intoxication by a substance (or group of substances) is characterized by various factors. To avoid greater risks, those engaging in chemsex should have a basic knowledge of the substances they are using, as well as minimal information on initial use, and be able to identify signs that point to the need for help.

- **Risk of abuse and dependence:** Owing to their pharmacologic characteristics, the properties of the substances used may differ, with a greater potential for repeated dosing when the amount or frequency increases. This entails specific risks. For example, continued use of GHB can lead to specific withdrawal symptoms that appear after discontinuation. The possibility that drug use itself or continued use over time can have problematic consequences depends on multiple personal, community, and contextual factors.

- **Route of administration:** Using an inappropriate route could lead to very serious problems. For example, intranasal use of poppers rarely leads to complications, although accidental ingestion can be fatal. Various aspects concerning the route of administration and dosing are addressed in Section 2 of this Appendix.

- **Legal situation:** The use of illicit drugs carries specific legal risks (eg, sanctions for possession or use in public areas) and may involve criminal offences (sale or possession with intent to sell). Additional risks are associated with variations in purity or adulteration. Substances sold as powder or crystals (cocaine, MDMA, ketamine, methamphetamine) are more likely to be adulterated than other formats, such as tablets. When consuming a substance

whose composition is unknown, it is better to begin with a very small amount to determine the effects. In Spain, some laboratories have a special department to analyze substances aimed at users, such as the service offered by the Energy Control project of the ABD organization.

All these elements vary individually depending on multiple factors such as physical constitution, sex, experience of use, and time since previous use.

It is also important to consider specific information with respect to the substances used, as follows:

- Methamphetamine is a very potent substance, and small amounts can have significant effects. Pure methamphetamine is active at doses of 5-15 mg, and its effects can last 6-8 hours. Therefore, the dose must be calculated very carefully. The probability of behavior-related mental disorders (problematic use, addiction, dependency) is higher than with other substances. Of particular importance is the need to stress messages such as the importance of placing limits on time and money and of continuous self-observation.
- The prohibition of mephedrone and other synthetic cathinones has led to the emergence of a series of noncontrolled derivatives with indeterminate legal status, such as 4-methyl-N-ethylcathinone (4-MEC), buphedrone, flephedrone (4-FMC). These substances are very similar to mephedrone, although their effects and risks in humans remain unknown. Today, it is not uncommon for crystals sold as mephedrone to contain varying amounts or mixes of these substances. As for risk reduction with intranasal use, the recommendations in Section 2 of this Appendix are valid.
- The safety margin of GHB is lower than with other substances. Small increases in dose can lead to disproportionately severe effects, and the difference between a recreational dose and a toxic dose is small. Intoxication by GHB is characterized by reduced consciousness (sleep), which can progress to deep coma (passing out). Simultaneous use of other depressants such as alcohol—even at small doses—and sleeping pills facilitates the appearance of these

problems. Intoxications are more frequent if the user does not know the exact concentration and amount of the product used.

The most important thing to do is to calculate the dose and not mix GHB with alcohol or other depressants (sleeping pills, ketamine). Mixing even small doses can lead to overdose.

The consumer should first familiarize himself with the effects of GHB in a controlled environment (at home, for example) and consume low doses. Increases in doses should be small to avoid risks. If possible, it is important not to take the drug alone, but rather with other people who know what substance has been taken so that this information can be made available should problems arise.

Managing GHB by calculating and measuring the dose with a syringe facilitates appropriate dosing and reduces risks. The user should be extremely careful with the dose; therefore, he should not accept GHB simply because someone offers it to him, nor should he drink from GHB prepared for others.

In the case of intoxication by GHB, the first step is always to ensure that the person lies down in the recovery position in order to maintain the airways open and prevent aspiration of vomit. If the person is unconscious and unresponsive to stimuli (after speaking to or pinching him), urgent medical care should be sought.

- The anesthetic effect of ketamine can facilitate painful sexual practices such as anal penetration, fisting, and use of large dildos, which can cause tears or lesions that go unnoticed. Excessively high or successive doses can significantly affect body movement (loss of balance, reflexes), potentially leading to falls and accidents. In order to avoid this problem, dosing should be managed with care, and sufficient time should be left between doses.
- Poppers should be handled with care, and the bottle should be closed after each use. Contact with skin can lead to burns; therefore, accidental spills should be washed carefully with water. If the eyes or mucous membranes come into

contact with poppers, they should be washed for several minutes. In the case of intense pain or altered vision, urgent medical attention should be sought.

When breathing in, it is usually easier if another person opens the bottle, holds it, and closes it before placing it in a safe place. The use of masks or other devices during use can lead to respiratory problems or asphyxia.

Poppers are inflammable and should be kept well away from heat sources (heaters, radiators, lighters, cigarettes) owing to the risk of explosion.

The effect of poppers lasts a few minutes. However, repeated use favors adverse effects, such as headache.

Poppers may be particularly dangerous for persons with cardiovascular problems, high blood pressure, or glaucoma.

Poppers act quickly and may lead to difficulties getting or maintaining an erection. Therefore, condoms should be put on before using this substance.

While relaxation of the sphincter facilitates penetration and fisting, care should be taken, especially in persons who are not accustomed to these practices, in order to reduce the risk of bleeding or lesions.

Some studies have associated the use of poppers with a higher risk of transmission of HIV [2,3]. While the cause-effect relationship is not clear, the risk may be associated with the increased likelihood of bleeding owing to dilatation of the anal veins or the association with high-risk sexual practices.

2. RISK REDUCTION ACCORDING TO ROUTE OF ADMINISTRATION

One of the most important determinants of the risks associated with drugs (and, therefore, ways to reduce these risks) is the route of administration. Not all substances can be admitted via all routes of administration, and errors in this sense may prove fatal.

Severe toxic effects are unlikely with poppers. However, oral ingestion can produce severe burns (mouth and esophagus) and methemoglobinemia (medical emergency involving deoxygenation of blood) [4].

Below, we describe the characteristics of each route, the substances most frequently administered via the route, and measures to reduce risks.

2.1. Oral route

Substances: GHB/GBL, prescription drugs (hypnosedatives, erectile dysfunction drugs), MDMA (in tablet or crystal form).

Oral administration involves a series of filters (gastric acids, liver) that metabolize the drug before it reaches the brain.

It is important to ensure that the user knows that if he takes drugs orally, the effects take some time to manifest, ie, between 30 and 60 minutes, although this can vary depending on stomach contents and other factors.

Thus, it is worth leaving sufficient time before taking the following dose, since, if the previous one has not had an effect, there is a major risk of overdose, especially with drugs such as GHB.

GBL, the immediate precursor of GHB, is caustic for the skin and mucous membranes. It should always be diluted in water or another nonalcoholic drink and taken at a moderate rate (ie, similar to that of having a drink) in order to minimize the effects.

2.2. Intranasal route

Substances: cocaine, ketamine, mephedrone, amphetamine (*speed*), methamphetamine.

Substances administered intranasally reach the central nervous system without passing through the liver. As the drug acts rapidly via this route, the user feels the

effects quickly. However, intranasal administration facilitates compulsive use and dependency.

It is not uncommon to confuse substances that take the form of powder (eg, cocaine or mephedrone with ketamine), although this difference will be noticed clearly by the user after taking the drug.

Local problems may emerge, and nasal congestion, rhinitis, and bleeding episodes, especially after blowing one's nose, are common. Other, more serious problems include sinusitis and infection. Their frequency and intensity usually depend on the dose and frequency of use and on whether the substance has a vasoconstrictor effect, as is the case with cocaine.

The persistence of a seemingly mild problem over time, purulent rhinorrhea, intense local pain, or fever point to the need for a medical examination. Many symptoms resolve with pharmacologic treatment, although complications can develop if they are not diagnosed and treated on time.

The various measures that can be taken to reduce the risk of intranasal administration include the following:

- Grinding or crushing the substance before administration.
- Alternating nostrils, as opposed to always using the same side.
- Using a clean surface (never on a toilet surface, for example).
- Irrigating the nostrils with saline solution (or tepid water with a little salt).
- Using a tube to inhale: this should be one's own, clean, disposable, and flexible (so as not to damage the nostrils). A cut-up straw or clean paper (never a banknote) should be sufficient.

With respect to using tubes to inhale, hepatitis C virus can live outside the body for some time. Detection of hepatitis C virus on banknotes and other materials used for inhaling has generated controversy over whether "sharing straws" could be a route of transmission. There is no clear evidence concerning a problem that, if it does exist, would be of very limited magnitude.

2.3. Respiratory route

Substances: methamphetamine, cannabis, tobacco, freebase cocaine.

These substances are usually smoked through a pipe, cigarette, or other device (bong, aluminum foil), which is lit or heated. The smoke generated is then inhaled. Smoking (high-temperature combustion, usually mixed with tobacco) involves consumption of residues, toxins, and heat released by combustion, which entails extra risks. Such is the case of cannabis, for example.

Substances can also enter the lungs as vapor. Given the large surface area of the lungs, absorption through this route can facilitate problematic use.

Of the various substances used in the context of chemsex, methamphetamine cannot be smoked with tobacco and requires other devices that enable vaporization at lower temperatures. The most common is a glass pipe in the form of a bulb, although some persons use aluminum foil (as with heroin and freebase cocaine). Adaptors for e-cigarettes that enable vaporization of crystals (CBD or methamphetamine) have recently come onto the market.

The use of blowtorches or large lighters can cause serious accidents; therefore, using a standard lighter is safer, since this goes out if the button is not pressed. Very hot smoke and contact with the skin by a recently used pipe can cause severe burns. Methamphetamine or cocaine rock should not come close to the face. The tubes to be used should be sufficiently long for the smoke to cool before entering the mouth.

Sharing the pipe with other people can make it hard to control the dose being taken, thus facilitating transmission of infections, such as hepatitis C in the case of intranasal administration when using homemade pipes that may contain sharp edges or points. Health warning: Devices should never be shared and, if a bottle is used, each person should take his own tube and wash it after each use. Hydration and care of the lips (eg, with Vaseline) can help to prevent cracks and lesions, which are a potential portal of entry for pathogens.

Persons using aluminum foil sometimes believe that it is first necessary to remove a “strange” residue by burning it. This is not the case. The foil does not contain varnish or a layer of plastic. The reason why one side is shiny and the other matt is that one is polished with rollers during the production process. Burning aluminum foil only makes it more fragile [5].

2.4. Intravenous route

Substances: methamphetamine, mephedrone

Intravenous administration is clearly the riskiest route. On the one hand, the substances come into direct contact with blood and reach the heart, then the lungs, and finally the brain, almost instantaneously. On the other, problems of dependence are more common with this route than with any other route.

The easiest veins to find are in the arms and forearms. The substance is always injected in the direction of the heart, thus respecting blood flow. People who have difficulty finding their veins can place their arms downward below the level of the heart and use a rubber tourniquet, knotting it in such a way that it is easy to release. If it is not possible to inject through the veins on the arms, then the veins of the legs can be used. However, given that the legs are not as clean as the arms and blood flow is affected by various factors in this area, the risk of infection is greater. Optimal hygiene measures should be taken.

Injection should be avoided in high-risk areas such as the neck and groin owing to risk of damage to central vessels and other structures (eg, nerves). Furthermore, any infection at these sites could become complicated, potentially resulting in endocarditis or septicemia.

Materials should be sterile and for personal use only. At each administration, it is recommended to always have the following: 2 syringes and needles (in case one breaks or becomes dirty), alcohol wipes (or alcohol and tissue paper), a clean or sterile recipient for dissolving, and a filter. The hands should be washed, and the injection site disinfected. The syringe should be of the appropriate size and should be disposed of immediately after use.

The most appropriate type of needle for drug use are those designed for subcutaneous or intradermal administration of medications, since they are very thin and short, cause less damage to the skin, and, therefore, leave fewer marks. They are usually combined with 1-cc syringes, since the solutions are low in volume and, therefore, do not hamper intravenous administration. In some contexts, or with certain types of substance, it may be necessary to reach higher dilutions, which will require 2-mL, 5-mL, or 10-mL syringes [6].

Further information on damage reduction and prevention strategies for drug injection in this setting and health messages aimed at users can be found in *"Slamming. Guía para la reducción de daños asociados al uso de drogas inyectables en las sesiones de sexo",* published by gTt [6].

2.5. Rectal route (enemas)

Substances: mephedrone, methamphetamine.

Some persons use anal administration for specific drugs dissolved in liquid using a syringe. Absorption varies with the volume administered, rectal content, and the user's ability to retain it. This approach is generally not sufficient to achieve rapid and reproducible effects, although it does achieve more or less consistent plasma levels.

Risk can be reduced by using a small, well-lubricated syringe that is introduced carefully to avoid injury. Needles should never be used, and material should not be shared. Only small volumes should be used (1-2 mL).

3. REDUCTION OF RISKS ASSOCIATED WITH THE SETTING FOR USE

The previous sections addressed reduction of risks and damage from the perspective of risks stemming from use of substances (or combinations of substances) and their routes of administration. With the same perspective, this section addresses various

aspects on which we can generate health messages that specifically refer to settings for chemsex.

3.1. Sessions, chillouts, private parties

The owners of saunas, sex clubs, and cruising spots set out their conditions for access, timetables, drug policy, and drinks prices; however, most rules for private parties are unwritten. The types of interaction and situation that can occur during a session or chillout vary considerably. The host may have invited a few friends or acquaintances, although new guests can also be invited via apps.

The tone of the encounter can vary considerably over the few days that people enter and leave a private residence, and there may be a high rotation of the participants in a session. This means that some will use different substances or prefer different types of sex practice. Once under the effects of the substances used, participants may find themselves in situations that can get out of hand, become very uncomfortable, or get completely out of control.

Some materials offering specific health messages in this setting [7] recommend thinking about one's own limits before agreeing to become involved in situations that could prove more serious than the participant expected. They also propose finding out certain details before going to a party or chillout, for example, the number of participants at the time, how long the session has been going, the substances being used and the route of administration (whether participants are slamming), and if condoms are being used. Thus, it is easier to understand what is happening and to think about possible risks before finding oneself in the situation.

Other messages proposed [7] refer to realistic limits about when it is best to leave, since once a person is in a session, it can be hard to decide when to stop. It is important to think about the need for at least 1 night's sleep to recover for work. It is also important to have one's phone charged and to carry a charger, since this can help to inform the appropriate persons if it necessary to call the emergency services.

Similarly [7], it is a good idea to carry a bag with personal protective items (condoms, lubricant, and, if injecting, disposable material), since it cannot be assumed that these items will be available at the location. It is better not to carry valuables, which may be lost, and to ensure the bag or belongings remain visible in the same place. Leaving home with too much money could lead to continued buying of substances and extension of the activity beyond the duration that was originally planned. Consequently, it is best to avoid carrying too much money.

Other sources [8] propose that the host should look for persons he can trust so that rules can be set on, for example, the maximum number of participants, who can invite more participants, who can throw people out, whether the bell or elevator should be used, and potential annoyance for neighbors. The rules should also be made clear to the participants in order to define which spaces can be accessed and which are out of bounds.

3.2. Saunas and sex clubs

The facilities and equipment in most saunas and sex clubs represent an added risk for the health and physical integrity of a person who is under the effects of psychoactive substances. Such places are often subject to major architectural barriers: steam rooms and saunas at very high temperatures, areas with little or no lighting, narrow corridors and mazes, booths with interior locking, and wet or slippery floors. In addition, dark rooms carry a potential risk of theft, physical pressure due to overcrowding, and sexual assault.

For decades, heroin users have been advised not to consume in a closed space such as a toilet, because this makes it difficult to provide rapid help to someone who has overdosed. Similar messages have now been adapted to chemsex, by informing users of the risks of taking GHB in a booth at a sauna or sex club. Drug use should be specifically advised against in these spaces.

If a person is intoxicated in a space of these characteristics, potential risk reduction measures include maintaining appropriate hydration and avoiding or reducing the

stay in overcrowded dark rooms and stuffy, hot, and humid areas, since this increases the risk of heat stroke or a fall in blood pressure (9). It is a good idea not to carry too much money. Valuables should be left at reception (not in a locker) and the user's mobile phone should be charged. Going with a friend could act as support in the case of an adverse reaction or overdose: if a person faints or falls asleep alone in a booth, he is potentially vulnerable (reports of theft of locker keys and sexual assault) [10].

The owners of the premises can also adopt measures and policies to reduce the possibility of harm. For example, staff should be trained to react to an overdose by placing the person in the recovery position and calling the emergency services if necessary. Staff should make hourly rounds to ensure that no-one has fainted in the darker areas and corners of the sauna/steam room. In dark spaces with no natural light or clocks where they can be seen, using some substances makes it easy to lose track of time (9) and of the right times for eating and resting. Therefore, each location should set a maximum number of hours' stay in the facilities.

Any preventive intervention in this area should be based, first, on understanding the sociocultural aspects that have led to the emergence of this phenomenon, and second, and taking on board the needs of the population who engage in it [11].

3.3. Playrooms in discos and gay festivals

Some festivals have specific spaces, such as a chillout zone or a playroom (euphemism for a place where it is possible to have sex). The illumination in this area generally differs from that in the rest of the disco or premises; therefore, the area could be a dark or shady room surrounded by structures such as camouflage mesh, worksite fencing, and paneling. At this type of event, participants may alternate between settings and spend several hours dancing or having sex.

If the ventilation is not appropriate, temperatures can rise, and physical activity can worsen the lack of hydration and increase the risk of heatstroke. This risk can be reduced by leaving the building at regular intervals to get some air, take a break, and monitor hydration. In the case of persons who use GHB/GBL, monitoring the interval

between doses or finding a well-lit place to accurately measure the dose could prove complicated in this setting, thus increasing the risk of overdose. Some sources [12] recommend premixing doses of GHB (measured using a syringe) in small containers as a way of reducing the risks associated with dosing in clubs.

Occasionally, persons who sell drugs offer better prices if a higher amount is bought for several persons. Carrying a large amount for various persons can have serious legal implications in the case of a police search, since the carrier could be accused of supplying drugs to third parties.

3.4. Cruising spots

Engaging in chemsex in cruising spots entails additional specific risks. Since some involve personal safety (eg, theft or assault), it is important to be as vigilant as possible [13].

Many cruising spots lack drinking water and water to wash or rinse one's mouth; therefore, it is a good idea to bring food and bottled water to ensure appropriate hydration and hygiene. Cruising usually takes place at night in areas of uneven terrain, rocks, or abundant vegetation, thus increasing the likelihood that an intoxicated person can fall, be injured, or even get lost. Under such circumstances, it is essential to carry a fully charged cellphone and be able to use the geolocation function and torch to find one's way and ask for help.

An element that is common to all the spaces described in this section is the change in resting or eating times. The associated risks are multiplied in areas where temperatures are high (eg, saunas or premises with poor ventilation and overcrowding). Messages have been drafted to cover self-care in these situations [14], with emphasis on the importance of appropriate amounts of food, water, and rest to minimize the damage caused by the cruising and recover better once the activity has finished. It is even recommended to eat when one is not hungry, both before starting and during the activity. Protein- and nutrient-rich foods (not sweet foods) that can be

eaten as snacks are particularly useful. It is a good idea to carry one's own food in a backpack (especially if these are tasty or favorite foods) so that it is close to hand. Hydration is essential before, during, and after the activity. Water and isotonic drinks are best, and alcohol and high-sugar drinks should be avoided. A dry mouth and dark-colored urine indicate that it is necessary to take more liquids. If the user is taking medication, then he should carry enough for several days, since it is not always possible to predict when one will return home.

When it is necessary to travel to a place to take drugs, then the user should ensure that he can return home and verify available public transport options, since he should never drive under the effects of a psychoactive drug [(15)], owing to the risks to himself and to other people.

4. REDUCTION OF RISKS ASSOCIATED WITH CONTACT APPS AND OTHER TECHNOLOGIES

Some risks or problematic situations in chemsex are associated with the use of technology and personal safety. British organizations such as the Terrence Higgins Trust [(16)] and London Friend [(17)] have drafted health messages aimed at reducing potential problems in this setting.

Compulsive use of contact apps. The effects of some substances can favor compulsive use of contact apps, thus leading the user to spend longer periods on them without realizing how much time has passed. Constantly sliding one's finger across the screen can lead to stress and anxiety. Potential strategies for reducing risk include the following:

- Setting a time limit for use or deleting the app.
- Trying to avoid using the app after a session and dedicating this time to other activities, such as organizing an alternative activity with another person, cooking or eating, and watching television.

- If the person is trying to stop using drugs for a period or is under treatment, removing the app could be a good way to avoid temptation. Some app blockers come with an access code that can be given to a friend or health professional.

Harassment. Harassment can refer to dissemination of personal information or private photos and videos that the victim has shared. Most apps have a function to block transmission and report the incident. However, harassers use strategies such as creating a new account and profile to continue threatening their victims. If naked photos or videos are shared, blocking out the face and tattoos will make it difficult to identify the person.

Personal safety. Arranging to meet strangers is very common in chemsex. This practice carries a certain degree of risk, with reports of assault, hate crimes, and muggings. Safety measures to minimize these risks include providing users with specific advice such as meeting in a public place and not providing sensitive personal information. Apps make it possible to meet without providing a telephone number. In private residences, it is wise not to leave valuables visible when there are unknown guests or when participating in a chillout session.

5. REDUCTION OF RISKS ASSOCIATED WITH SEXUAL PRACTICES

5.1. Strategies associated with behavior modification

Acquiring the skills necessary to manage high-risk situations for transmission of HIV, viral hepatitis, and other STIs can help to minimize associated risks. This section describes the skills and strategies for reducing risks in chemsex [(18)].

Anal intercourse: Condomless anal intercourse is a high-risk practice for both the active and the passive partner. However, this risk is minimized with appropriate condom use [(19)]. In long sex sessions, it is safer to use a new condom every 30 minutes. A systematic review of 5 cohort studies (n = 8,825) revealed that using a condom reduced transmission of HIV (relative risk [RR], 0.36; 95% confidence interval [CI], 0.20-

0.67) [20]. However, even if a condom is not used during intercourse, other strategies can be applied to reduce the risk of transmitting HIV, hepatitis, and other STIs, as follows [21]:

- Reducing the number of sexual partners in general, or the number of partners with whom intercourse is unprotected.
- Using abundant lubricant (water-, polyurethane-, or silicone-based) to reduce the possibility of injuries to the penis and anus. Piercings should be removed from the genitals.
- Avoiding receptive intercourse, or, if this is practiced, avoid ejaculation in the anus.
- Avoiding practices that involve lesions in the anus before intercourse, for example, fisting, which could be reserved for after intercourse.
- Avoiding laxatives before intercourse and frequent use of laxatives, since this weakens the anal mucosa, thus leaving it more vulnerable to injury.
- Not sharing sex toys. If sex toys are used, they should be covered with a condom for each change of partner. In order to prevent the transmission of hepatitis C, any toys used should not come into contact with each other or be touched by other persons. Hands should be washed and disinfected before touching other people's sex toys.
- Not shaving the pubic area and genitals, since this can produce small skin injuries. If the pubic area and genitals are shaved, then contact between them and fluids that are capable of transmitting infection (blood, semen) should be avoided. Exchanging razors is a risk practice for HIV infection, hepatitis, and other STIs.
- Engaging in practices other than intercourse: safer sex includes switching anal sex for alternatives that are subject to less risk of transmission of HIV, such as oral sex, thigh sex, and mutual masturbation [22].

Oral sex/fellatio: The risk of contracting HIV infection through oral sex is very low or nonexistent [23]. However, while extremely unlikely, it is theoretically possible to

transmit HIV infection during oral sex if an HIV-positive man ejaculates in his partner's mouth [24]. The risk of transmitting other STIs during oral sex is high. Nevertheless, the use of a physical barrier can reduce the risk of transmission of HIV infection, hepatitis, and other STIs. Potential risks during ejaculation can be reduced as follows [25].

- By spitting semen out and rinsing with water (avoiding alcohol and other liquids, which can damage the oral mucosa).
- By drinking water to facilitate rapid passage from the throat to the stomach, where semen is inactivated by stomach acids. However, retching and vomiting can cause injuries in the throat and increase the risk of infection.

Oral sex entails a risk of infection if a partner has an STI, open wounds or sores on the genitals or in the mouth, or bleeding gums (after brushing or flossing).

Rimming: Rimming is not considered a risk practice for transmission of HIV infection, although it can facilitate transmission of hepatitis A and B, intestinal parasites (eg, *Gardia*), and bacteria (eg, *E. coli*) [25]. There may be some risk if blood is present in the anus (eg, after intercourse or fisting); in this case, plastic wrap may be used as a barrier to prevent contact between the mouth and the blood.

Fist fucking: Using latex gloves and abundant lubricant helps to dilate, thus preventing tears and bleeding. Silicone- or water-based lubricant can be used to prevent the latex gloves from breaking. Nitrile gloves can be used in the case of fat-based lubricants. It is best to rest if the lubricant turns pink, as this indicates bleeding. In order to prevent the transmission of hepatitis C, the arms and forearms must be washed immediately after fisting. If intercourse has also taken place, both the genitals and the pubic hair must be washed with a smooth soap or appropriate gel.

Group sex: Transmission of HIV can be prevented by changing the condom with each partner. Sharing of material that causes bleeding is a risk practice for transmission of HIV infection and hepatitis B and C. Strategies for reducing the risk of group sex include the following [18].

- Avoiding lying or sitting down on residual lubricant or a partner's body fluids.
- Washing hands correctly after stimulating a partner's anus with one's fingers.
- Avoiding sharing materials for anal douches. Write the owner's initials on each bottle of lubricant to avoid sharing.
- Having clean towels (washed at 60°C) in different colors to avoid using each other's. Using disposable paper towels and a wastebin. Lighting should be sufficiently bright to detect traces of blood (do not use red lights). If these materials are not going to be available at a session, participants should bring their own disinfectant, soap, and lubricant, as well as towels to place over the surfaces they are going to lie on.

Other sexual practices: Some sexual or erotic practices such as feet licking and watersports (saliva and urine) are not considered risk practices for transmission of HIV. However, practices involving oral-fecal contact may entail risks for transmission of hepatitis A virus and other STIs.

Serosorting: Serosorting is defined as a behavior in which a person chooses a sexual partner with the same HIV serological status, often with the aim of having condomless sex. Serosorting should not be promoted as a strategy for prevention of HIV infection.

5.2. Biomedical strategies for reducing risks associated with sexual practices

There are various ways of preventing HIV infection and other STIs, and users should be evaluated on an individual basis in order to provide appropriate advice and take joint decisions on the best preventive measures. A series of preventive measures are set out below.

Vaccination. Vaccines that are effective against some STIs include hepatitis A and B [(26)] and human papillomavirus (HPV). They play a key role in public health programs aimed at GBMSM [(26)].

- **Hepatitis A.** In areas of low endemicity, GBMSM are at a very high risk of acquiring hepatitis A. Outbreaks of hepatitis A were recently reported in GBMSM (2016-2017); these were associated with oral-fecal contact in clubs and saunas, thus demonstrating that the disease is transmitted throughout Europe and in high-income countries [(27).] In the case of GBMSM, those who are HIV-positive are more likely to experience symptomatic infections that last longer and have a higher viral load.

  Double vaccination is recommended (0 and 6 months). The combination vaccine can be used in the case of HBV (0, 1, and 6 months) [(28).]

- **Hepatitis B.** The risk of hepatitis B in GBMSM has been shown to be 10-20 times greater than in the general population. Viral load and the probability of chronic infection increase in the case of coinfection, as does the frequency of cirrhosis and carcinoma. This group should be vaccinated at 0, 1, and 6 months [(28)] if they did not receive the vaccine as part of their childhood vaccination calendar.
- **Human papillomavirus (HPV).** The incidence of anal cancer is greater in high-risk populations, including GBMSM. Vaccination against HPV is recommended in GBMSM up to age 26 years at 0, 1-2, and 6 months [(28).]

Early diagnosis of HIV infection. One of the main strategies for the eradication of the HIV epidemic is early diagnosis and treatment of infection [(26).] Early diagnosis makes it easier for persons living with HIV who are unaware of their serostatus to use practices that prevent transmission to their partners, thus breaking the transmission chain.

Treatment as prevention. Several clinical studies have shown that persons with HIV infection who maintain an undetectable viral load with antiretroviral therapy cannot transmit the virus through sexual relations [29–31]. Therefore, given the increase in tolerance to current treatments and greater survival among those who start treatment early (irrespective of CD4 count), it is recommended to initiate antiretroviral therapy as early as possible once the diagnosis has been confirmed [32,33]. In addition to improving the survival of HIV-infected people, this measure has led to an advance in eliminating associated stigmatization. Furthermore, reducing the population viral load (aggregate viral load of the individuals who are living with HIV in a population) reduces transmissibility and the emergence of new infections. Consequently, this measure has become a cornerstone of HIV prevention.

Postexposure prophylaxis (PEP). PEP is an emergency preventive measure involving the administration of antiretroviral treatment (3 drugs over 28 days) to a person who has had a high-risk exposure to HIV. Various aspects should be taken into account before indicating PEP. This approach can only be offered within the 72 hours following exposure, and ideally within the first 24 hours. Furthermore, it is necessary to evaluate the risk of acquiring HIV infection, considering factors such as risk practice and serostatus of the partner involved in the exposure. Access to PEP is via the emergency department or at infectious diseases departments/HIV units, where the patient can also be followed up [34].

Pre-exposure prophylaxis (PrEP). PrEP complements other, current preventive measures and involves the administration of 2 antiretroviral drugs (emtricitabine and tenofovir disoproxil) to seronegative persons with the aim of preventing HIV infection. PrEP is an integrated program. For it to function appropriately, it must be accompanied by regular screening for HIV and other STIs and by medical assessment. The 2 regimens that have proven effective in various studies are the daily regimen (1 pill per day) and on-demand medication, where 2 pills are taken simultaneously 2-24 hours before sex and 1 pill per day on the 2 days following the contact. However, on-demand PrEP has

not been approved by the European Medicines Agency. PrEP is recommended in persons belonging to population groups with a high incidence of HIV infection (mainly GBMSM and trans women) and persons who engage in risk practices such as chemsex. More information can be obtained from the recommendations of GESIDA, the British HIV Association (BHIVA/BASHH), and the National AIDS Plan [35–37].

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