



REVIEW

## Psychological and Social Factors Associated with Condom Use in MSM

### Factores Psicológicos y Sociales Asociados al Uso del Condón en HSH

Juan Carlos Plascencia-De la Torre<sup>1</sup>  , Kalina Isela Martínez-Martínez<sup>2</sup> , Fredi Everardo Correa-Romero<sup>3</sup> ,  
Ricardo Sánchez-Medina<sup>4</sup> , Oscar Ulises Reynoso-González<sup>5</sup>  

<sup>1</sup>Universidad de Guadalajara. Guadalajara, México.

<sup>2</sup>Universidad Autónoma de Aguascalientes, Departamento de psicología. Aguas calientes, México.

<sup>3</sup>Universidad de Guanajuato, México.

<sup>4</sup>Universidad Nacional Autónoma de México, México.

**Cite as:** Plascencia-De la Torre JC, Martínez-Martínez KI, Correa-Romero FE, Sánchez-Medina R, Reynoso-González OU. Psychological and Social Factors Associated with Condom Use in MSM. *Seminars in Medical Writing and Education*. 2024; 3:475. <https://doi.org/10.56294/mw2024475>

**Submitted:** 06-10-2023

**Revised:** 08-01-2024

**Accepted:** 11-05-2024

**Published:** 12-05-2024

**Editor:** PhD. Prof. Estela Morales Peralta 

**Corresponding author:** Juan Carlos Plascencia-De la Torre 

#### ABSTRACT

**Introduction:** condom use has been recognized as one of the most effective strategies to prevent HIV and other sexually transmitted infections (STIs). However, its inconsistent use in key populations, such as Men who have Sex with Men (MSM), has posed a significant public health challenge. Several studies have indicated that psychological, social and behavioral factors influence the adoption of this protective measure.

**Development:** it has been identified that HIV risk perception played a crucial role in condom use. Many MSM underestimated their vulnerability, which led them to engage in unprotected sex, especially with casual partners. Also, lack of sexual assertiveness prevented some individuals from negotiating condom use with their partners. In addition, sexual sensation seeking influenced decision making, as certain MSM prioritized immediate arousal over STI prevention. Another determining factor was the use of psychoactive substances, such as alcohol and other recreational drugs, which affected judgment and decision-making in sexual contexts. Chemsex, a practice that combined drug use with sexual activity, was particularly associated with an increased risk of HIV transmission.

**Conclusion:** the evidence demonstrated that inconsistent condom use in MSM was influenced by multiple factors. To improve HIV prevention strategies, it was necessary to implement interventions that promoted risk perception, sexual assertiveness, and reduction of psychoactive substance use. Only through a comprehensive approach could HIV incidence be reduced and safer sexual practices promoted in this population.

**Keywords:** HIV; STI; Condom Use; Risk Perception; MSM.

#### RESUMEN

**Introducción:** el uso del condón ha sido reconocido como una de las estrategias más eficaces para prevenir el VIH y otras infecciones de transmisión sexual (ITS). Sin embargo, su uso inconsistente en poblaciones clave, como los Hombres que tienen Sexo con Hombres (HSH), ha representado un desafío significativo en la salud pública. Diversos estudios han señalado que factores psicológicos, sociales y conductuales influyen en la adopción de esta medida de protección.

**Desarrollo:** se ha identificado que la percepción de riesgo al VIH desempeñó un papel crucial en el uso del condón. Muchos HSH subestimaron su vulnerabilidad, lo que los llevó a involucrarse en relaciones sexuales sin protección, especialmente con parejas ocasionales. Asimismo, la falta de asertividad sexual impidió que algunos individuos negociaran el uso del preservativo con sus parejas. Además, la búsqueda de sensaciones

sexuales influyó en la toma de decisiones, ya que ciertos HSH priorizaron la excitación inmediata sobre la prevención de ITS. Otro factor determinante fue el consumo de sustancias psicoactivas, como el alcohol y otras drogas recreativas, las cuales afectaron el juicio y la toma de decisiones en contextos sexuales. El chemsex, práctica que combinó el consumo de drogas con la actividad sexual, estuvo particularmente asociado con un mayor riesgo de transmisión del VIH.

**Conclusión:** la evidencia demostró que el uso inconsistente del condón en HSH estuvo influenciado por múltiples factores. Para mejorar las estrategias de prevención del VIH, fue necesario implementar intervenciones que fomentaran la percepción de riesgo, la asertividad sexual y la reducción del consumo de sustancias psicoactivas. Solo a través de un enfoque integral se podría reducir la incidencia del VIH y promover prácticas sexuales más seguras en esta población.

**Palabras clave:** VIH; ITS; Uso Del Condón; Percepción De Riesgo; HSH.

## INTRODUCTION

The use of condoms has been recognized as one of the most effective strategies in the prevention of sexually transmitted infections (STIs), including the Human Immunodeficiency Virus (HIV). Their proper and constant use significantly reduces the risk of infection, making them a fundamental resource within public health policies. However, despite its effectiveness, several studies have pointed out that its use in key populations, such as Men who have Sex with Men (MSM), continues to be inconsistent due to multiple psychological, social, and structural factors.

In this sense, it has been observed that the perception of risk towards HIV, sexual assertiveness, and sensation seeking play a decisive role in the sexual behavior of MSM. Factors such as a low perception of vulnerability, trust in casual partners, and the influence of cultural norms can discourage the use of condoms. Likewise, the consumption of psychoactive substances, such as alcohol and other recreational drugs, has been identified as a risk factor, as it affects decision-making and can encourage unprotected sex.

Given the above, it is essential to understand the psychological factors associated with condom use in the MSM population to design more effective intervention strategies. Exploring both protective factors and those that increase risk will enable the development of prevention campaigns that promote safe sex and reduce the incidence of HIV in this key population.

## DEVELOPMENT

### Condom use and associated psychological factors

Condom use refers to the practice of using a condom, which is a barrier contraceptive device designed to cover the penis during sexual intercourse in order to prevent the transmission of STIs, including HIV, and to prevent pregnancy by avoiding direct contact between the penis and the vagina, mouth or anus of the sexual partner. The condom is one of the most effective forms of protection against STIs when used correctly and consistently during sexual activity. It is also known as “condom use” or “male condom use” (Waugh, 2010).

Although it has been pointed out that men consider the condom to be one of the safest and most comfortable methods, especially when they have multiple sexual partners (Fernández & Morales, 2014), it is also true that the inconsistency of this method is conditioned by stigmas associated with a lack of trust in the partner and limited sexual communication, becoming a risk factor for HIV infection (Ali et al., 2019; Sánchez, Enríquez, et al., 2021). This situation could be because the condom, to a certain extent, is promoted as a barrier method for the prevention of pregnancy. Hence, MSM likely perceives it as something unnecessary at the time of sexual intercourse, particularly those involving anal intercourse.

Unprotected anal sex among MSM is the type of sex that carries the most significant risk, as it can cause cuts or lacerations in the rectum, and the virus can enter more easily (Valdez, Castillo, et al., 2015). The literature shows that, unlike men with heterosexual practices, MSM are more likely to have anal sex without a condom with casual partners (López et al., 2021), and in some cases, intentionally seek out anal sex without a condom, which leads to a higher risk of acquiring HIV (McCree et al., 2017; Scanavino et al., 2018).

According to several studies carried out on men, 80 % do not consistently use condoms, and around 20 % have stated that they never use them, adding to this is the high percentage of recreational drug use when having sexual encounters, which may explain at least to some extent, the increase in new cases of HIV and, in an explosive way, the latest instances of other STIs such as syphilis and gonorrhea (Milans et al., 2023; Yañez, 2018).

Recently, Hentges et al. (2023) revealed that various factors beyond individual behavior influence condom use among MSM in Brazil. In their study with a sample of 4,176 adult MSM, they found that more than half (50,8 %) of MSM in the respective country had not consistently used condoms with their occasional sexual partners

in the previous six months. Similarly, they revealed that inconsistent condom use was significantly associated with factors such as low educational level, lack of STI counseling, and a moderate to high perceived risk of HIV. The authors refer to the need for public HIV prevention policies to target younger and less educated MSM and to provide them with qualified information on condom use in their sex lives.

Along the same lines, Gredig et al. (2020) studied 238 MSM in Costa Rica and reported that only 13,4 % of those evaluated had consistently used condoms in their sexual relations over the previous six months. The authors found that condom use is influenced by personal strategies and the perceived severity of the infection, emphasizing the importance of personal protection strategies, situational inhibitors, and partner-related factors in HIV prevention among MSM. Similarly, they argue that interventions should focus on addressing inhibitors to condom use, such as trust in casual partners and the availability of condoms while promoting self-efficacy in condom use.

For their part, Morell et al. (2021) conducted a study with 405 MSM between the ages of 18 and 60 to carry out a descriptive analysis of sexual practices and frequency of condom use and identify the variables that explain inconsistent condom use during anal intercourse, incorporating cognitive-affective and behavioral variables into the model, including the perception of HIV risk, sexual assertiveness and the search for sexual sensations. The study found that inconsistent condom use during anal sex among MSM is influenced by various factors such as a lack of perception of risk, high self-esteem, a more excellent search for sensation, low sexual assertiveness, and low self-efficacy, explaining between 33,8 % and 49,2 % of the variance in condom use.

In addition, in research carried out in Latin America with individuals living with HIV in couples where one member is HIV-positive and the other HIV-negative, factors linked to the lack of condom use were identified as sexual behavior that leads to greater exposure to risky situations. These factors included lower educational levels, sexual relations with casual partners, alcohol consumption during sexual relations, and the lack of guidance on the prevention of the sexual transmission of HIV (Reis et al., 2019).

In short, condoms play a crucial role in preventing the spread of HIV when used correctly. However, despite their effectiveness, inconsistent use by some men contributes to an increased risk of infection. According to the literature, there is a worrying lack of use among men, especially in casual sexual encounters, which has contributed to the increase in new cases of HIV and other STIs. Furthermore, it is essential to emphasize that inconsistent condom use is influenced by factors that transcend individual behavior, including socio-cognitive aspects; some are considered protective factors for condom use, and others are risk factors.

### **Protective factors in condom use**

The health psychology approach highlights the importance of protective and risk factors in well-being and preventing pathogenic behaviors. These factors are those behaviors that have a positive impact on the integral development of people and that have the potential to reduce the probability of engaging in risky behaviors. Protective factors can influence the level of risk in individual experiences or modulate the relationship between risk and the impact of certain behaviors. Several studies have addressed the importance of these protective factors in health promotion and disease prevention, including HIV prevention (Amar et al., 2003; Milanés et al., 2023; Sánchez et al., 2022).

Studies conducted to understand the behavioral processes of HIV infection have been approached from the analysis of risk factors, which is why it is necessary to take into account the positive or protective determinants that lead to the adoption of safe behaviors, such as consistency in the use of condoms. In this sense, few studies have analyzed these variables, especially in the MSM population. Some of them are detailed below.

### *Perception of HIV risk*

The risk perception variable has been linked to salutogenic behaviors, such as the systematic use of condoms during sexual intercourse. This variable was initially incorporated into the Health Belief Model and later added to other models explaining human behavior in preventing HIV infection.

According to the UNAIDS definition (1999), risk perception refers to the probability of an individual experiencing negative consequences as a result of their behavior, and this perception is associated with a lack of awareness of their vulnerability or an illusion of control. According to Lameiras et al. (2002), this way of understanding risk perception reflects a feeling of “perceived invulnerability” or “illusion of control,” which implies a constant underestimation of the risk linked to certain behaviors. This phenomenon is observed more frequently in young people when they face risky situations, such as possible HIV infection, which leads to a tendency to underestimate their own risk while overestimating the risk faced by other people.

Sánchez, Lozano, et al. (2021) consider that the perception of risk is a complex process that is constructed based on the subjective experience of the subject in the context of daily life and understand it as the vulnerability perceived by an individual when considering whether or not they are at risk of contracting a disease. For its part, the perception of HIV risk refers to the subjective evaluation that a person makes about the probability of contracting HIV and the associated consequences. This evaluation is not always based on objective data but

can be influenced by beliefs, knowledge, previous experiences, and psychosocial factors (Llanes et al., 2020).

Yañez (2018) argues that young people of the current generation, born after the second half of the 1990s, have grown up in an era in which advances in antiretroviral therapy have transformed HIV from a deadly disease into a chronic and manageable condition. This transformation has contributed to the emergence of a certain optimism and decreased risk perception about the virus. In this context, the perception of risk becomes a possible factor associated with risky sexual behavior in MSM, and this relationship could be mediated by age. Young people tend not to perceive themselves as vulnerable to HIV infection, which leads them to engage in risky sexual behavior repeatedly. However, these behaviors are influenced by factors such as the search for immediate gratification, the lack of consideration for the long-term adverse effects, the availability of pharmacological options to treat some diseases, and specific cultural beliefs related to certain situations.

When people have a piece of more excellent knowledge about HIV infection, they tend to recognize their own risk by relating their unprotected behaviors to the possible negative consequences that these can bring. In this sense, the perception of the risk of HIV is closely related to the use of condoms; when a person perceives a high risk of contracting HIV, they are more likely to adopt preventive measures, such as the consistent and correct use of condoms during sexual intercourse. The perception of risk can influence a person's motivation to protect themselves and make informed decisions about their sexual health. However, risk is situational and relative; that is to say, it can vary over time and in the situations to which an individual is exposed (Pérez et al., 2016).

Taking into account some research on the perception of HIV risk in young people, it has been found that three-quarters of the subjects perceive some degree of invulnerability to HIV, regardless of the actual behaviors performed, influenced by factors such as low vulnerability, unrealistic optimism and the undervaluation of personal risk while overvaluing the risk of others, concluding that there is a gender balance in levels of sexual activity and greater systematic use of condoms in more recent generations (Lameiras et al., 2002; Pastor & Rojas, 2019; Saura et al., 2019). This challenges the traditional conceptualization and measurement of risk perception, a situation that is considered a psychological and structural barrier to achieving other self-care behaviors, such as taking the HIV test (Acosta, 2021).

On the other hand, several studies have been identified in MSM concerning risk perception, such as the case of Torres et al. (2018), who found that 66,3 % of men who have sex with men in a city in Mexico reported low perceived risk of HIV, with a correlation towards decisional balance towards HIV testing. In the same vein, a correlational study of Mexican men with an average age of 33 found that nearly 90 % of them had a low perception of HIV risk, which had a predictive effect on condom use (Guerra et al., 2022). Similarly, it has been shown that MSM with a low perception of HIV risk are less likely to go to a health center for early detection and more likely to engage in unprotected anal sex (Sanabria et al., 2020; Sullivan & Stephenson, 2018).

Despite the high rate of HIV infection among young MSM and their participation in high-risk behaviors, a significant number of men in this group manage to avoid infection by adopting systematic risk reduction strategies, even when they do not always use condoms or abstain from substance use. To this end, Ober et al. (2018) conducted qualitative interviews with HIV-negative MSM to identify behaviors that allow them to remain free of HIV infection. The results revealed that these men, despite engaging in high-risk behaviors, employed adaptive risk reduction behaviors through decisions planned before sexual encounters, putting into practice a greater use of condoms, the avoidance or delay of risky sexual relations, or the reduction of partners with HIV-positive serology.

It is important to emphasize that the perception of HIV risk varies from one person to another and can influence the decisions made about prevention and sexual protection due to different factors, such as the information available, the sexual education received, personal experiences, and the individual belief system (Llanes et al., 2020; Marcus et al., 2016). For example, a person who perceives a high risk of infection may be more motivated to adopt protective measures, such as consistent condom use and regular HIV testing. On the other hand, a person who underestimates the risk may have a less preventive attitude and be less willing to take precautions. Therefore, it is essential to promote adequate education about HIV, to foster an accurate understanding of risk factors, and to provide information about the effectiveness of condoms as a method of prevention to help improve the perception of risk and promote their proper use.

More research is needed to explore both the conceptualization and measurement of risk perception about HIV prevention behaviors. This represents a challenge to the traditional understanding of risk perception. Future studies should focus on evaluating the effectiveness of interventions designed to increase risk perception and promote safer sexual behaviors, especially among university students. In addition, it is essential to analyze the role of other factors, such as knowledge, attitudes, and social norms, in shaping risk perception and sexual behaviors in young adults.

Likewise, the impact of educational programs and strategies that address gender differences and promote a more comprehensive understanding of risk perception and sexual health could be investigated. The carrying out of longitudinal studies would provide valuable information on how the perception of risk and sexual behavior



evolves, allowing for a deeper understanding of the dynamics and factors that influence these behaviors. In addition, carrying out comparative studies between different populations and cultural contexts is beneficial for identifying contextual factors that influence the perception of risk and inform the development of personalized and culturally sensitive interventions.

### *Sexual Assertiveness*

The concept of assertiveness has been defined in many ways, all relating to stating something with certainty. Several authors agree that assertiveness is the social skill that allows an individual to communicate their feelings, preferences, needs, and opinions to others without these being disregarded or forced with a certain degree of aggression (Bach, 2012; Terroni, 2009). Being assertive is not just about the ability to express emotions but also the capacity to communicate and defend one's rights correctly and to respect the rights of others (Bach, 2012).

Assertiveness is also involved in the human sexuality process, thus generating sexual assertiveness. In this sense, assertiveness and sexual assertiveness share certain similarities related to decision-making and the accurate communication of these decisions. However, sexual assertiveness is closely related to sexual activity, which involves the development of skills to relate appropriately to one's sexual partner (Gutiérrez, 2019; Zamboni et al., 2000).

Going back a little, sexual assertiveness is defined as the ability of subjects to initiate sexual activity, the ability to refuse unwanted sexual activity, and the ability to use contraceptive methods to prevent various sexually transmitted infections or unwanted pregnancies, which is reflected in the performance of healthy sexual behaviors (Makoroff et al., 1997; Corral et al., 2022). Uribe et al. (2013), for their part, define it as the ability to communicate clearly and promptly to one's partner the needs, desires, and feelings related to the sexual act, including the need to use a condom during intercourse. Some studies have shown that sexual assertiveness is a central component of human sexuality, relating to some aspects of the sexual response, such as desire, the search for sexual satisfaction, and sexual coercion, as well as the prevention of risky sexual behavior, so it is essential to know how people, in this case MSM, resolve their questions about sexual behavior, as this is a reflection of the sociocultural context in which they interact and of the interpretation of their psycho-affective well-being (Santos & Sierra, 2010; Uribe et al., 2017).

On the other hand, it has been found that sexual assertiveness acts as a protective factor when associated with condom use in sexual relations, as well as serving to counteract hegemonic masculine norms that promote sexual risk-taking (Leddy et al., 2015; Morell et al., 2021); Similarly, a correlation has been found between sexual assertiveness and the perception of self-efficacy and condom use in the MSM population. In this sense, sexual assertiveness is considered a key support factor for initiating sexual activity, rejecting unwanted sexual activity, and negotiating desired sexual practices, as well as for successfully and safely negotiating condom use.

However, not all individuals have sufficient interpersonal communication skills to handle the negotiation processes linked to sexual relations, such as the use of condoms, in addition to the fact that assertiveness is associated with specific structural and cultural barriers (Uribe et al., 2012; Sánchez et al., 2015). In this sense, Uribe et al. (2017) conducted a study on young Latinos to determine to what extent the perception of self-efficacy and sexual assertiveness predict the use of condoms in sexual relations, concluding that the variables of self-efficacy and sexual assertiveness are not only associated with the use of condoms in sexual relations but they are also linked to each other, that is to say, they are the result of a series of cognitive processes and emotional expression. The same processes result in a specific behavioral intention. Likewise, they report that sociocognitive models that address condom use and other safe sex practices offer a more solid explanation as to whether young people use them or resist their use since even though the population tends to have extensive knowledge about the consequences of risky sexual behavior, they continue to engage in it.

Consequently, consistent condom use is closely related to the ability to be assertive in sexual situations. If a person lacks sexual assertiveness, they may find it challenging to communicate their desire to use a condom or may feel pressured by their partner to have unprotected sex. A lack of assertiveness can lead to situations in which condoms are not used consistently or at all.

### **Risk factors for condom use**

A risk factor is considered any environmental characteristic that precedes the onset of the disease or is associated with the deterioration of health without specifying its causal nature (García, 1998). On the other hand, Senado (1999) defines it as any trait or condition of a person or group linked to the probability of experiencing or developing a disease since its characteristics are related to a specific type of deterioration of health. In this sense, a risk factor is any condition, behavior, lifestyle, or environmental situation that puts an individual at greater risk of acquiring and developing a disease.

Among the risk factors most associated with HIV are early sexual debut, anal, vaginal, or oral sex without using a condom, having multiple sexual partners, and the use of mobile applications to find intimate encounters (Duncan et al., 2018; Jiménez, 2018; Kritsanavarin et al., 2020; Sanabria et al., 2020; Sánchez, Lozano, et

al., 2021). Similarly, it has been identified that the consumption of psychoactive substances and the search for sexual sensations have been classified as risk factors for HIV infection in MSM associated with inconsistency in the use of condoms at the time of having sexual intercourse. The same variables for the present research project will be detailed below.

### *The search for sexual sensations*

In several studies on the behavioral factors that increase the risk of HIV infection, the search for sexual sensations has been considered a crucial variable in the evaluation of the risk of contracting the virus. The search for sexual sensations is defined as a personality trait in which there is a predisposition of the person to experience new sensory stimulations, even when there are certain risks involved (Kalichman et al., 1994). It is essential to consider that sensation-seeking is a personality trait that can predict an individual's behavior. It directs how individuals interpret their experiences and environments (Xu et al., 2016; Zuckerman, 2009).

In this order, Kalichman et al. (1994) propose two aspects of the process in the search for sexual sensations, one oriented towards the search for new sexual sensations, which refers to the contents of sensations without explicit reference to the external, for example, being interested in experiencing new and exciting sexual sensations; while on the other hand, there is the search for new sexual experiences, which refers to the tendency of some people to seek out and experiment with different sexual activities, practices or situations that provide them with novelty, excitement or arousal. The latter refers to content about situations with explicit reference to or dependence on other people or external stimuli (Moral de la Rubia, 2018).

Various studies such as that of González et al. (2018) and Oshiri et al. (2013) have established that the search for sexual sensations is directly related to high-risk sexual behavior in the adult population, based on the postulates that people with a high level of sensation seeking have a high tolerance for risk, allowing themselves to be carried away by impulsivity, even when the person is under the effect of a psychoactive substance. For their part, Cross et al. (2013) have reported gender differences in the search for sexual sensations, finding higher scores in men. These sex differences are explained by evolved psychological mechanisms or culturally transmitted social norms that change over time. Another possible reason for sensation seeking in men is the levels of hormones, particularly testosterone, and the presence of certain neurotransmitters, which also affect both aggressive behavior and sexual desire (Uribe, 2005).

This line of research has been studied in more specific populations, such as homosexuals and MSM. For example, in a review by Jiménez (2018), it was found that 34,9 % of MSM with a tendency towards seeking sexual sensations practiced unprotected anal sex, which increases the probability of acquiring HIV and the risk of being diagnosed with other STIs fivefold (Matarelli, 2013). Furthermore, Gao et al. (2016) have indicated that the search for sexual sensations can influence MSM to have multiple sexual partners, promote negative attitudes toward the use of condoms, and lead to other actions that can negatively affect the preservation of sexual health. For their part, Jiang et al. (2022) revealed that just over 50 % of MSM present traits of sexual sensation seeking, this being associated with risky sexual behaviors, such as not using condoms and engaging in sexual relations with strangers, registering high scores in this area and a correlation between these variables. Furthermore, it has been established that sensation-seeking also influences participation in sexual relations under the influence of drugs (Tomkins et al., 2018; Valencia et al., 2018).

In a study by Wang et al. (2021), they explored the relationship between sexual sensation seeking and condom use in young men who have sex with men using a moderated mediation model to analyze the data. The results revealed that attitude toward condom use plays a partial mediating role in the connection between sexual sensation seeking and condom use. This indicates that people with higher levels of sensation seeking may be less likely to use condoms because of their attitudes toward their use.

In short, sensation-seeking has a significant component of biological origin, but it is also influenced by the environment in which people operate. In various ways and contexts, sensory experiences of varying intensity can be sought, such as involvement in sports or at work. However, there are less beneficial situations, such as the consumption of psychoactive substances and indiscriminate sexual relations, that involve health risks.

### *Consumption of psychoactive substances*

The consumption of psychoactive substances refers to the use of chemical substances that alter the normal functioning of the central nervous system and can affect the mood, emotions, behavior, and perception of reality of any individual. The substances can be legal, such as alcohol and tobacco, or illegal, such as marijuana, cocaine, and heroin, among others (Lomba et al., 2009; Doggui et al., 2021). Similarly, the authors, as mentioned above, agree that the consumption of these substances can have various determinants, such as social pressure, curiosity, support for the reduction of anxiety, or the search for pleasure in all its aspects. However, prolonged consumption can lead to dependence, as well as physical and mental health problems.

Among the most commonly consumed substances is alcohol, which has become a global public health problem, causing multiple adverse health consequences, such as cognitive impairment, road accidents, internal physical

issues, and risky sexual behavior (Ahumada et al., 2017). It has been reported that 90 % of young people and adults have consumed alcohol at least once in their lives, leaving them vulnerable to the development of addictive behaviors (Ahumada et al., 2017; Bravo et al., 2019; Pilatti et al., 2017; Skidmore et al., 2016). Along the same lines, according to data from the National Survey on Drug, Alcohol and Tobacco Consumption ([ENCODAT], 2017a) in Mexico, 71 % of the surveyed population reported having consumed alcohol at some point in their lives, and 33.6 % reported excessive consumption in the last year at the time of the study; now, in terms of gender, men reported higher levels of excessive alcohol consumption in the previous year at the time of the survey (45,5 %) compared to women (22,6 %), with beer being the preferred drink of the population, followed by spirits and table wines. In terms of the states with the highest percentage of alcohol consumption, the state of Jalisco stands out with 80 %, which is significantly higher than the national average (71,7 %). These data emphasize that men living in the state of Jalisco are more likely to consume alcohol compared to the rest of the population, which is characterized as a risk factor for health.

According to Neal and Fromme (2007), alcohol consumption increases the likelihood of engaging in risky sexual behavior, which can lead to consequences such as unwanted pregnancy or the acquisition of a sexually transmitted infection such as HIV. In this regard, one study indicated that around 80 % of men had consumed alcohol at least once before having sex (Fisher, 2012). In addition to this, another study reported that 20 % of young male university students reported not having used a condom during sex after having consumed alcohol (Enstad et al., 2019).

Along the same lines, it has been shown that the age of alcohol consumption is a factor associated with a higher risk of developing future addiction problems and early onset of sexual relations (Buttmann et al., 2019). In this sense, men over 25 years of age, with a high school education level, and who use harmful substances in their sexual relations are the most exposed to a sexually transmitted infection (Ntombela et al., 2021). In a recent study (by Leonangeli et al., 2021), it was found that the onset of alcohol consumption at a young age is related to the onset of sexual relations at a young age and is similarly associated with other risk factors such as sexual impulsivity and the search for new sensations.

In particular, it has been reported that risky practices in MSM are associated with the consumption of alcohol and other drugs (Delgado et al., 2017; Xu, 2014) and recurrent sexual relations with multiple partners (Martínez et al., 2017). This is also pointed out by Jiang et al. (2022) in their study of 500 MSM, who found that 33,80 % reported drinking alcohol before sex, 33,40 % reported using poppers before sex, and 60,40 % reported having had multiple sexual partners in the last six months. For their part, Hernández et al. (2017) carried out a correlational study with Mexican MSM to examine the effect of alcohol consumption on sexual behavior. They reported that just over 60 % consumed alcohol and had sex at the same time, concluding that alcohol consumption is a risk factor that influences decision-making at the time of sexual intercourse, which in turn could be associated with inconsistency in the use of preventive methods.

Regarding drug use, this situation has represented one of the greatest challenges for the health sector in the sense that it is a variable process, both in terms of the magnitude of use, the type of substance consumed, and the age groups that use them. According to data from ENCODAT (2017b), around 10 % of the Mexican population has consumed a drug at some time in their life, with marijuana and cocaine being the most commonly used substances among both men and women; however, higher consumption is reported among men.

The consumption of any drug is related to the adoption of risky sexual behavior, because in the opinion of Antón & Espada (2009):

Sexual behavior under the influence of these substances is considered to be a higher risk, given that the assessment of the risk of contracting an STI or unwanted pregnancy is affected, the feeling of invulnerability increases, and self-control decreases (p.345).

In the same vein, Lomba et al. (2009) point out that some drugs act as sexual stimulants, increasing sexual desire and decreasing inhibition. They also indicate that the words “sex” and “drugs” are related to risky sexual behavior, which means that for many people, the consumption of some drugs leads to sexual intercourse, as they start from the idea that the pleasure of the sexual act increases with consumption. The effect of various substances on desire and risky sexual behavior has been studied in depth, taking into consideration the classification of each of these drugs: marijuana (Patel et al., 2020), cocaine (Dallelucci et al., 2019), methamphetamines or also known as crystal (Schecke et al., 2019) and inhalants, or better known as poppers, especially in the MSM population (Chu et al., 2018; Li et al., 2019). Many of these substances are consumed for their effects on sexual practices. However, their consumption is mainly associated with ephemeral sexual experiences and risky sexual behaviors such as inconsistent condom use, which leads to the risk of acquiring an STI, such as the most recent case of the monkeypox virus (Vallée, 2023).

Taking into account the MSM study population, it has been shown that recreational substance use is a risk factor for the development of some diseases, including pharyngeal, rectal, and genital infections, as well as for acquiring HIV (Ottaway et al., 2017). In recent years, the consumption of substances such as alcohol and drugs has followed an upward trend. Some studies have reported higher recreational drug use in MSM with a positive

HIV diagnosis compared to those without a diagnosis or who do not know their serological status (Escrivá et al., 2017; Fernández, 2016; Guerras et al., 2022; Valencia et al., 2018).

Among MSM, there has been the sexualized use of drugs, better known as Chemsex, which can be defined as sexual experiences under the influence of some psychoactive substance for hours or days to increase trust with the sexual partner, increase sexual desire, strengthen the bond between people, achieving greater sexual longevity, experiencing new sexual sensations and improving satisfaction in sexual relations (Guerras et al., 2022; Tomkins et al., 2018; Valencia et al., 2018). Chemsex is associated with anal sex without a condom, multiple sexual partners, erotic practices and games such as fisting, the sharing of sex toys, and group sex parties (Carvalho et al., 2020). The rise of chemsex as a public health issue may be due to increased participation in this behavior and the associated sexual risk-taking facilitated by geospatial networking applications and online sites for meeting sexual partners. MSM who participate in chemsex are more likely to be living with HIV, while those who do not have HIV but who participate in these behavioral patterns are more likely to have accessed some form of preventive treatment (Hibbert et al., 2017).

Furthermore, it has been pointed out that recreational drug use, such as marijuana, cocaine, and methamphetamines, is also linked to inconsistent condom use in the MSM population, which can increase the risk of acquiring HIV. The MSM community is especially vulnerable to the negative effects of substance use and risky sexual behavior, which underlines the importance of implementing prevention and education programs that are specific and sensitive to their needs.

In summary, the consumption of psychoactive substances, including alcohol and drugs, poses a series of significant challenges in today's society, with a particular emphasis on its impact on the MSM population. It emphasizes how the abuse of these substances can hurt health, as well as risky sexual behavior. In particular, it has been observed that alcohol consumption is associated with risky sexual behavior, which can lead to consequences such as the acquisition of HIV and other STIs.

Although only some of the cognitive-behavioral determinants that are considered protective and risky for HIV infection in MSM are presented, a range of psychosocial factors associated with HIV infection have also been identified, some of which have been incorporated into theoretical models that explain risk behavior and have therefore been frequently studied. In contrast, others, such as prophylactic treatment (PrEP and PEP), Chemex, and barebacking, have been addressed mainly in the US context.

**Table 1.** Psychosocial factors associated with HIV infection in MSM

| Dimension     | Factors                                                                                                                                                                                                          | References                                                                                                                                                                                                       |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Psychological | Knowledge about HIV<br>Attitudes towards HIV<br>Attitudes towards condoms<br>Self-efficacy and condom use<br>Social skills<br>Emotional states<br>Chemsex<br>Barebacking<br>Use of prophylactic treatment (PrEP) | Gredig et al. 2020; Hernández et al. 2017; Jose et al. 2020; Kritsanavarin et al. 2020; Ntombela et al. 2021; Resnick et al. 2021; Sánchez, Enríquez et al. 2021; Sánchez, Lozano, et al. 2021; Tan et al. 2020. |
| Sociocultural | Age<br>Geographical area (rural/urban)<br>Socioeconomic level<br>Education<br>Marital status<br>Number of sexual partners<br>Inequality<br>Social support<br>Violence in the couple                              | Duncan et al. 2018; Hernández et al. 2017; Martinez et al. 2017; McKenney et al. 2018; Ntombela et al. 2021.                                                                                                     |

## CONCLUSIONS

The use of condoms continues to be one of the most effective strategies for the prevention of HIV and other sexually transmitted infections (STIs). However, their inconsistent use in key populations, such as men who have sex with men (MSM), represents a significant challenge for public health. Despite the availability and accessibility of condoms, psychological, social, and behavioral factors have been identified as barriers that prevent their systematic use in this population.

One of the main factors associated with inconsistent condom use is the perception of HIV risk. Several studies have shown that MSM tend to underestimate their vulnerability, which leads them to engage in unprotected sex, especially in casual encounters. The low perception of risk, influenced by erroneous beliefs and unrealistic optimism regarding the disease, contributes to the spread of the virus. Furthermore, the lack of adequate



information on HIV prevention and the influence of cultural norms also impact decision-making related to sexual protection.

Likewise, sexual assertiveness has proven to be a key factor in HIV prevention. The ability to negotiate and communicate the need to use condoms is related to higher levels of self-efficacy and perceived control over one's sexual health. However, many people in the MSM community lack these skills, which makes it challenging to adopt preventive behaviors. Social pressure and partner expectations can influence the refusal to use condoms, creating situations in which individuals feel unable to insist on their use.

Another relevant risk factor is the search for sexual sensations, which has been identified as a variable that influences decision-making during sexual encounters. The need to experience new sensations or to have sex without physical barriers leads some MSM to reject the use of condoms. This tendency is widespread in contexts where pleasure and immediate excitement are prioritized over the prevention of STIs, which increases the likelihood of exposure to HIV.

The use of psychoactive substances has also been linked to inconsistent condom use. Alcohol and other drugs affect judgment and decision-making, reducing the perception of risk and increasing the likelihood of unprotected sex. In addition, practices such as Chemex, which involves the use of drugs to enhance the sexual experience, have been associated with high-risk sexual behaviors, including condomless sex with multiple partners.

Given this scenario, it is essential to design and implement prevention strategies considering these psychological and behavioral factors. Interventions should focus on increasing the perception of risk among MSM, promoting sexual assertiveness, and reducing the influence of factors such as psychoactive substance use on sexual decision-making. Comprehensive sex education programs and awareness campaigns can play a crucial role in promoting condom use and HIV prevention.

In conclusion, the fight against HIV in the MSM population requires a multidimensional approach that addresses both the psychological barriers and the social factors that influence sexual behavior. Promoting condom use must be accompanied by strategies that strengthen the perception of risk, promote self-efficacy, and reduce risk behaviors associated with substance use. Only through a comprehensive approach will it be possible to reduce the incidence of HIV and improve the sexual health of this key population.

## REFERENCES

1. Abeille Mora E, Soto Carrasco AA, Muñoz Muñoz VP, Sánchez Salinas R, Carrera Huerta S, Pérez Noriega E, et al. Características de la prueba piloto: Revisión de artículos publicados en enfermería. *Rev Enferm Neurol*. 2015;14(3):169-175. Disponible en: <https://doi.org/10.37976/enfermeria.v14i3.212>
2. Acosta Vergara TM. Riesgo percibido y decisión hacia la realización de prueba de VIH en hombres que tienen sexo con hombres en área metropolitana de Barranquilla 2020 [Tesis de grado]. Universidad del Norte, Barranquilla; 2021. Disponible en: <http://manglar.uninorte.edu.co/bitstream/handle/10584/10136/1044431836.pdf?sequence=1&isAllowed=y>
3. Agüero F, Masuet-Aumatell C, Morchon S, Ramon-Torrell J. Men who have sex with men: A group of travellers with special needs. *Travel Med Infect Dis*. 2019;28:74-80. Disponible en: <https://doi.org/10.1016/j.tmaid.2018.10.020>
4. Ahumada-Cortez JG, Gámez-Medina ME, Valdez-Montero C. El consumo de alcohol como problema de salud pública. *Rev Ra Ximhai*. 2017;13(2):13-24. Disponible en: <https://www.redalyc.org/pdf/461/46154510001.pdf>
5. Albarracín D, Johnson BT, Fishbein M, Muellerleile PA. Theories of reasoned action and planned behavior as models of condom use: a meta-analysis. *Psychol Bull*. 2001;127(1):142-161. Disponible en: <https://doi.org/10.1037/0033-2909.127.1.142>
6. Ali MS, Tesfaye Tegegne E, Kassa Tesemma M, Tesfaye Tegegne K. Consistent condom use and associated factors among HIV-Positive clients on antiretroviral therapy in North West Ethiopian Health Center. *AIDS Res Treat*. 2019;2019:1-10. Disponible en: <https://doi.org/10.1155/2019/7134908>
7. Almanza Avendaño AM. Adherirse a la vida. Manual para promover la adherencia de varones con VIH. Editorial Colofón; 2018.
8. Amar Amar J, Abello Llanos R, Acosta C. Factores protectores: un aporte investigativo desde la psicología comunitaria de la salud. *Rev Psicol Caribe*. 2003;11:107-121. Disponible en: <https://www.redalyc.org/pdf/213/21301108.pdf>

9. American Psychological Association [APA]. Society for Health Psychology [Internet]. Washington D.C.: APA; 2021. Disponible en: <https://www.apa.org/about/division/div38>
10. Andrew BJ, Mullan BA, de Wit JB, Monds LA, Todd J, Kothe EJ. Does the theory of planned behaviour explain condom use behaviour among men who have sex with men? A meta-analytic review of the literature. *AIDS Behav.* 2016;20(12):2834-2844. Disponible en: <https://doi.org/10.1007/s10461-016-1314-0>
11. Antón Ruíz JA. Análisis de factores de riesgo para la transmisión del VIH/SIDA en adolescentes. Desarrollo de un modelo predictivo [Tesis doctoral]. Universidad Miguel Hernández; 2013.
12. Ato García M, Vallejo Seco G. Diseños de investigación en Psicología. Pirámide Ed; 2018.
13. Arias Duque R. Reacciones fisiológicas y neuroquímicas del alcoholismo. *Diversitas Perspect Psicol.* 2005;1(2):138-147. Disponible en: <https://www.redalyc.org/articulo.oa?id=67910203>
14. Bach Cabocho E, Forés Miravalles A. La asertividad. Para gente extraordinaria. Plataforma Editorial; 2010.
15. Baltar F, Gorjup M. Muestreo mixto online: Una aplicación en poblaciones ocultas. *Intangible Capital.* 2012;8(1):123-149. Disponible en: <https://www.redalyc.org/pdf/549/54924517006.pdf>
16. Bandura A. Self-efficacy. In: Ramachaudran VS, editor. *Encyclopedia of human behavior.* Vol. 4. New York: Academic Press; 1994. p. 71-81. Disponible en: <https://www.uky.edu/~eushe2/Bandura/Bandura1994EHB.pdf>
17. Bandura A. A social cognitive theory of personality. In: Pervin L, John O, editors. *Handbook of personality.* New York: Guilford Publications; 1999. p. 154-196. Disponible en: <https://www.uky.edu/~eushe2/Bandura/Bandura1999HP.pdf>
18. Bandura A. The evolution of social cognitive theory. In: Smith KG, Hitt MA, editors. *Great Minds in Management.* Oxford: Oxford University Press; 2005. Disponible en: <https://www.uky.edu/~eushe2/Bandura/Bandura2005.pdf>
19. Bautista Arredondo S, Colchero A, Sosa Rubí SG, Romero Martínez M, Conde C. Resultados principales de la encuesta de seroprevalencia en sitios de encuentro de hombres que tienen sexo con hombres. México, D.F.: Funsalud; 2013. Disponible en: <https://funsalud.org.mx/wp-content/uploads/2019/11/Encuesta-seroprevalencia.pdf>
20. Becker MH, Maiman L. Sociobehavioral determinants of compliance with health and medical recommendations. *Med Care.* 1975;13:10-24.
21. Betancourt Llody YA, Pérez Chacón D, Castañeda Abascal IE, Díaz Bernal Z. Riesgo de infección por VIH en hombres que tienen relaciones sexuales con hombres en Cuba. *Rev Cubana Hig Epidemiol.* 2021;58(1097). Disponible en: <http://www.revepidemiologia.sld.cu/index.php/hie/article/view/1097/1072>
22. Boza Cordero R. Orígenes del VIH/sida. *Rev Clínica Esc Med UCR-HSJD.* 2016;6(4):48-60. Disponible en: <https://www.medigraphic.com/pdfs/revcliescmed/ucr-2016/ucr164g.pdf>
23. Boza Cordero R. Patogénesis del VIH. *Rev Clínica Esc Med UCR-HSJD.* 2017;5(1):28-46. Disponible en: <https://www.medigraphic.com/pdfs/revcliescmed/ucr-2017/ucr175a.pdf>
24. Bravo AJ, Pilatti A, Pearson MR, Read JP, Mezquita L, Ibáñez MI. Cross-cultural examination of negative alcohol-related consequences: Measurement invariance of the young adult alcohol consequences questionnaire in Spain, Argentina, and USA. *Psychol Assess.* 2019;31(5):631-42. Disponible en: <https://doi.org/10.1037/pas0000689>
25. Buttmann N, Nielsen A, Munk C, Frederiksen K, Liaw K, Kjaer SK. Young age at first intercourse and subsequent risk-taking behaviour: An epidemiological study of more than 20,000 Danish men from the general population. *Scand J Public Health.* 2014;42(6):511-7. Disponible en: <https://doi.org/10.1177/1403494814538123>

26. Cantu C, Surita K, Buendia J. Factors that increase risk of an HIV diagnosis following a diagnosis of syphilis: A population-based analysis of Texas men. *AIDS Behav.* 2022;1-7. Disponible en: <https://doi.org/10.1007/s10461-022-03593-w>
27. Carvalho Gomes I, Gámez Medina M, Valdez Montero C. Chemsex y conductas sexuales de riesgo en hombres que tienen sexo con hombres: Una revisión sistemática. *HealthAddict Salud Drogas.* 2020;20(1):158-165. Disponible en: <https://ojs.haaj.org/?journal=haaj&page=article&op=view&path%5B%5D=495&path%5B%5D=pdf>
28. Centro Nacional para la Prevención y Control del VIH/SIDA. Guía de manejo antirretroviral de las personas que viven con el VIH/SIDA. México; 2021. Disponible en: [https://www.gob.mx/cms/uploads/attachment/file/670762/Guia\\_ARV\\_2021.pdf](https://www.gob.mx/cms/uploads/attachment/file/670762/Guia_ARV_2021.pdf)
29. Chaves Dallelucci C, Carneiro Bragiato E, Nema Areco KC, Fidalgo F, Da Silveira DX. Sexual risky behavior, cocaine and alcohol use among substance users in an outpatient facility: a cross-section study. *Subst Abuse Treat Prev Policy.* 2019;14(1):46-46. Disponible en: <http://dx.doi.org/10.1186/S13011-019-0238-X>
30. Chávez Rodríguez E, Castillo Moreno RC. Revisión bibliográfica sobre VIH/SIDA. *Multimed.* 2013;17(4):189-213. Disponible en: <https://www.medigraphic.com/pdfs/multimed/mul-2013/mul134r.pdf>
31. Chu Z, Xu J, Zhang Y, Zhang J, Hu Q, Yun K, et al. Poppers use and sexual partner concurrency increase the HIV incidence of MSM: a 24-month prospective cohort survey in Shenyang, China. *Sci Rep.* 2019;8(24). Disponible en: <https://doi.org/10.1038/s41598-017-18127-x>
32. Collins S, Walker C. HIV testing and risk of sexual transmission. *I-Base;* 2016. Disponible en: <https://www.hivbirmingham.nhs.uk/wp-content/uploads/Test-trans-Jun2016e.pdf>
33. Corral Gil GJ, García Campos ML, Herrera Paredes JM. Asertividad sexual, autoeficacia y conductas sexuales de riesgo en adolescentes: una revisión de la literatura. *ACC CIETNA Rev Esc Enferm.* 2022;9(2):167-177. Disponible en: <https://revistas.usat.edu.pe/index.php/cietna/article/view/851/1579?download=pdf>
34. Cross CP, Cyrenne DLM, Brown GR. Sex differences in sensation-seeking: A meta-analysis. *Sci Rep.* 2013;3(2486). Disponible en: <http://dx.doi.org/10.1038/srep02486>
35. Dacus J, Sandfort T. Perceived HIV risk among black MSM who maintain HIV-Negativity in New York City. *AIDS Behav.* 2020;24:3044-3055. Disponible en: <https://doi.org/10.1007/s10461-020-02852-y>
36. Dallelucci CC, Bragiato EC, Areco K, Fidalgo T, Da Silveira D. Sexual risky behavior, cocaine and alcohol use among substance users in an outpatient facility: a cross-section study. *Sust Abuse Treat Prev Policy.* 2019;14(46). Disponible en: <https://doi.org/10.1186/s13011-019-0238-x>
37. Del Amo Valero J, Coiras López MT, Díaz Franco A, Pérez Olmeda MT. VIH: La investigación contra la gran epidemia del siglo XX. Editorial Catarata; 2017.
38. Delgado JR, Segura ER, Lake JE, Sanchez J, Lama JR, Clark JL. Event-level analysis of alcohol consumption and condom use in partnership contexts among men who have sex with men and transgender women in Lima, Peru. *Drug Alcohol Depend.* 2017;170(2):17-24. Disponible en: <https://doi.org/10.1016/j.drugalcdep.2016.10.033>
39. DiClemente R, Wingood G. A randomized controlled trial of an HIV sexual risk reduction intervention for young African-American women. *J Am Med Assoc.* 1995;274(16):1271-1276. Disponible en: <https://doi.org/10.1001/jama.1995.03530160023028>
40. Doggui R, Wafaa E, Conti A, Baldacchino A. Association between chronic psychoactive substances use and systemic inflammation: A systematic review and meta-analysis. *Neurosci Biobehav Rev.* 2021;125:208-220. Disponible en: <https://doi.org/10.1016/j.neubiorev.2021.02.031>
41. Dos Santos W, Freitas E, da Silva A, Marinho C, Freitas MI. Barreiras e aspectos facilitadores da adesão à terapia antirretroviral em Belo Horizonte-MG. *Rev Bras Enferm.* 2011;64(6):1028-1037. Disponible en: <http://www.redalyc.org/articulo.oa?id=267022538007>

42. Duncan DT, Goedel WC, Stults CB, Brady WJ, Brooks FA, Blakely JS, Hagen D. A study of intimate partner violence, substance abuse, and sexual risk behaviors among gay, bisexual, and other men who have sex with men in a sample of geosocial-networking smartphone application users. *Am J Mens Health.* 2018;12(2):292-301. Disponible en: <https://doi.org/10.1177/1557988316631964>

43. Enstad F, Evans-Whipp T, Kjeldsen A, Toubourou JW, Von Soest T. Predicting hazardous drinking in late adolescence/young adulthood from early and excessive adolescent drinking: A longitudinal cross-national study of Norwegian and Australian adolescents. *BMC Public Health.* 2019;19(1). Disponible en: <http://dx.doi.org/10.1186/s12889-019-7099-0>

44. Encuesta Nacional de Consumo de Drogas, Alcohol y Tabaco. ENCODAT. Encuesta Nacional de Consumo de Drogas, Alcohol y Tabaco 2017-2017. Reporte de Alcohol. Secretaría de Salud; 2017. Disponible en: [https://encuestas.insp.mx/repositorio/encuestas/ENCODAT2016/doctos/informes/reporte\\_encodat\\_alcohol\\_2016\\_2017.pdf](https://encuestas.insp.mx/repositorio/encuestas/ENCODAT2016/doctos/informes/reporte_encodat_alcohol_2016_2017.pdf)

45. Espada JP, Lloret D, García del Castillo JA, Gázquez Pertusa M, Méndez Carrillo X. Psicología y sida: estrategias de prevención y tratamiento. En: Oblitas Guadalupe LA, editor. *Psicología de la Salud y Calidad de vida.* 3° ed. Cengage Ed; 2017.

46. Estrada-Montoya JH. Hombres que tienen sexo con hombres (HSH): Reflexiones para la prevención y promoción de la salud. *Rev Gerenc Políticas Salud.* 2014;13(26):44-57. Disponible en: <http://dx.doi.org/10.11144/Javeriana.RGYPS13-26.htsh>

47. Fisher CM. Are information, motivation, and behavioral skills linked with HIV-related sexual risk among young men who have sex with men? *J HIV AIDS Soc Serv.* 2011;10(1):5-21. Disponible en: <https://doi.org/10.1080/15381501.2011.549064>

48. Fisher JD, Fisher WA. Changing AIDS-risk behavior. *Psychol Bull.* 1992;111:455-474. Disponible en: <https://doi.org/10.1037/0033-2909.111.3.455>

49. Fisher JD, Fisher WA, Amico KR, Harman JJ. An information-motivation-behavioral skills model of adherence to antiretroviral therapy. *Health Psychol.* 2006;25(4):462-73. Disponible en: <https://doi.org/10.1037/0278-6133.25.4.462>

50. Fisher JD, Fisher WA, Bryan AD, Mishovich SJ. Information-Motivation-Behavioral Skills Model-Based HIV Risk Behavior Change Intervention for Inner-City High School Youth. *Health Psychol.* 2002;21(2):177-86.

51. Gao M, Xiao C, Cao Y, Yu B, Li S, Yan H. Associations between sexual sensation seeking and AIDS-related knowledge, attitudes and behaviors among young men who have sex with men in China. *Psychol Health Med.* 2016;22(5):596-603.

52. García M. Factores de riesgo: una nada inocente ambigüedad en el corazón de la medicina conductual. *Rev Aten Primaria.* 1998;22(9):585-95. Disponible en: <https://www.elsevier.es/es-revista-atencion-primaria-27-articulo-factores-riesgo-una-nada-inocente-14974>

53. Guerras JM, Hoyos J, Agustí C, Casabona J, Sordo L, Pulido J, et al. Consumo sexualizado de drogas entre hombres que tienen sexo con hombres residentes en España. *Adicciones.* 2022;34(1):37-50. Disponible en: <https://doi.org/10.20882/adicciones.1371>

54. González G. VIH: 30 años después... *Salus.* 2014;18(2):3-4. Disponible en: <http://ve.scielo.org/pdf/s/v18n2/art01.pdf>

55. González-Rivera J, Aquino-Serrano F, Ruiz-Quinonez B, Matos-Acevedo J, Vélez-De la Rosa I, Burgos-Apunte-K, et al. Relación entre espiritualidad, búsqueda de sensaciones y conductas sexuales de alto riesgo. *Rev Psicol.* 2018;27(1):1-11. Disponible en: <http://dx.doi.org/10.5354/0719-0581.2018.50739>

56. Gredig D, Le Breton M, Granados Valverde I, Solís Lara V. Predictores del uso del condón en hombres que tienen relaciones sexuales con hombres en Costa Rica: comprobación del modelo de información, motivación y habilidades conductuales. *Rev Iberoam Cienc Salud.* 2020;9(17):1-30. Disponible en: <https://doi.org/10.23913/>



57. Guerra-Ordoñez JA, Benavides-Torres RA, Zapata-Garibay R, Ruiz-Cerino JM, Avila-Alpirez H, Salazar-Barajas ME. Percepción de riesgo para VIH y sexo seguro en migrantes de la frontera norte de México. *Rev Int Androl.* 2022;20(2). Disponible en: <https://doi.org/10.10b16/j.androl.2020.10.010>

58. Guerras JM, Hoyos J, Agustí C, Casabona J, Sordo L, Pulido J, et al. Consumo sexualizado de drogas entre hombres que tienen sexo con hombres residentes en España. *Adicciones.* 2022;34(1):37-50. Disponible en: <https://www.adicciones.es/index.php/adicciones/article/viewFile/1371/1307>

59. Gutiérrez S. Patrones de personalidad y asertividad sexual en agresores sexuales recluidos en cuatro centros penitenciarios de Perú. *Cultura: Revista de la Asociación de Docentes de la USMP.* 2019;(33). Disponible en: <https://doi.org/10.24265/cultura.2019.v33.15>

60. Hentges B, Riva Knauth D, Vigo A, Barcellos Teixeira L, Fachel Leal A, Kendall C, et al. Inconsistent condom use with casual partners among men who have sex with men in Brazil: a cross-sectional study. *Rev Bras Epidemiol.* 2023. Disponible en: <https://doi.org/10.1590/1980-549720230019>

61. Hernández Ávila CE, Carpio N. Introducción a los tipos de muestreo. *ALERTA Rev Cienc Inst Nac Salud.* 2019;2(1):75-9. Disponible en: <https://doi.org/10.5377/alerta.v2i1.7535>

62. Hernández García R, Caudillo Ortega L, Flores Arias ML. Efecto del consumo de alcohol y homofobia internalizada en la conducta sexual en hombres que tienen sexo con hombres. *Jóvenes en la Ciencia. Rev Divulg.* 2017;3(2). Disponible en: <http://www.sidastudi.org/resources/inmagic-img/DD47227.pdf>

63. Hernández Sampieri R, Mendoza Torres CP. Metodología de la Investigación. Las rutas cuantitativa, cualitativa y mixta. México: McGraw Hill; 2018.

64. Herrera C, Kendall T, Campero L. Vivir con VIH en México. Experiencias de mujeres y hombres desde un enfoque de género. México: El Colegio de México; 2014.

65. Hibbert MP, Brett CE, Porcellato LA, Hope VD. Psychosocial and sexual characteristics associated with sexualised drug use and chemsex among men who have sex with men (MSM) in the UK. *Sex Transm Infect.* 2019;95(5):342-50. Disponible en: <http://dx.doi.org/10.1136/sextrans-2018-053933>

66. Jiang H, Chen X, Li J, Tan Z, Cheng W, Yang Y. Predictors of condom use behavior among men who have sex with men in China using a modified information-motivation-behavioral skills (IMB) model. *BMC Public Health.* 2019;19:261. Disponible en: <https://doi.org/10.1186/s12889-019-6593-8>

67. Jiang H, Li J, Tan Z, Cheng W, Yang Y. The moderating effect of sexual sensation seeking on the association between alcohol and popper use and multiple sexual partners among men who have sex with men in Guangzhou, China. *Subst Use Misuse.* 2022;57(10):1497-503. Disponible en: <https://doi.org/10.1080/10826084.2022.2079134>

68. Jiménez Vázquez V. Modelo de sexo seguro para hombres que tienen sexo con hombres [Tesis de doctorado]. Universidad Autónoma de Nuevo León; 2018.

69. Jose J, Sakboonyarat B, Kana K, Chuenchitra T, Sunantarod A, Meesiri S, et al. Prevalence of HIV infection and related risk factors among young Thai men between 2010 and 2011. *PLoS One.* 2020;15(8). Disponible en: <https://doi.org/10.1371/journal.pone.0237649>

70. Kalichman SC, Johnson JR, Adair V, Rompa D, Multhauf K, Kelly JA. Sexual Sensation Seeking: Scale development and predicting AIDS-Risk behavior among homosexually active men. *J Pers Assess.* 1994;62(3):385-97.

71. Kritsanavarin U, Bloss E, Manopaiboon C, Khawcharoenporn T, Harnlakon P, Vasanti-Uppapokakorn M, et al. HIV incidence among men who have sex with men and transgender women in four provinces in Thailand. *Int J STD AIDS.* 2020;31(12):1154-60. Disponible en: <https://doi.org/10.1177/0956462420921068>

72.Lameiras Fernández M, Rodriguez Castro Y, Dafonte Pérez S. Evolución de la percepción de riesgo de la transmisión heterosexual del VIH en universitarios/as españoles/as. *Psicothema*. 2002;14(2):255-61. Disponible en: <https://www.psicothema.com/pdf/717.pdf>

73.Leddy A, Chakravarty D, Dladla S, de Bruyn G, Darbes L. Sexual communication self-efficacy, hegemonic masculine norms and condom use among heterosexual couples in South Africa. *AIDS Care*. 2016;28(2):228-33. Disponible en: <https://doi.org/10.1080/09540121.2015.1080792>

74.Leonangeli S, Rivarola Montejano G, Michelini Y. Impulsividad, consumo de alcohol y conductas sexuales riesgosas en estudiantes universitarios. *Rev Fac Cienc Med Córdoba*. 2021;78(2):153-7. Disponible en: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8741313/pdf/1853-0605-78-2-153.pdf>

75.Jiménez Vázquez V. Modelo de sexo seguro para hombres que tienen sexo con hombres [Tesis de doctorado]. Universidad Autónoma de Nuevo León; 2018.

76.Jose J, Sakboonyarat B, Kana K, Chuenchitra T, Sunantarod A, Meesiri S, et al. Prevalence of HIV infection and related risk factors among young Thai men between 2010 and 2011. *PLoS One*. 2020;15(8). Disponible en: <https://doi.org/10.1371/journal.pone.0237649>

77.Kalichman SC, Johnson JR, Adair V, Rompa D, Multhauf K, Kelly JA. Sexual Sensation Seeking: Scale development and predicting AIDS-Risk behavior among homosexually active men. *J Pers Assess*. 1994;62(3):385-97.

78.Kritsanavarin U, Bloss E, Manopaiboon C, Khawcharoenporn T, Harnlakon P, Vasanti-Uppapokakorn M, et al. HIV incidence among men who have sex with men and transgender women in four provinces in Thailand. *Int J STD AIDS*. 2020;31(12):1154-60. Disponible en: <https://doi.org/10.1177/0956462420921068>

79.Lameiras Fernández M, Rodriguez Castro Y, Dafonte Pérez S. Evolución de la percepción de riesgo de la transmisión heterosexual del VIH en universitarios/as españoles/as. *Psicothema*. 2002;14(2):255-61. Disponible en: <https://www.psicothema.com/pdf/717.pdf>

80.Leddy A, Chakravarty D, Dladla S, de Bruyn G, Darbes L. Sexual communication self-efficacy, hegemonic masculine norms and condom use among heterosexual couples in South Africa. *AIDS Care*. 2016;28(2):228-33. Disponible en: <https://doi.org/10.1080/09540121.2015.1080792>

81.Leonangeli S, Rivarola Montejano G, Michelini Y. Impulsividad, consumo de alcohol y conductas sexuales riesgosas en estudiantes universitarios. *Rev Fac Cienc Med Córdoba*. 2021;78(2):153-7. Disponible en: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8741313/pdf/1853-0605-78-2-153.pdf>

82.Li D, Yang X, Zhang Z, Qi X, Ruan Y, Jia Y, et al. Nitrite inhalants use and HIV infection among men who have sex with men in China. *Biomed Res Int*. 2014;365261. Disponible en: <https://doi.org/10.1155/2014/365261>

83.Llanes García L, Peñate Gaspar A, Medina Pérez J. Percepción de riesgo sobre VIH-SIDA en estudiantes becarios de primer año de Medicina. *Medicent Electrón*. 2020;24(1):185-91. Disponible en: <http://scielo.sld.cu/pdf/mdc/v24n1/1029-3043-mdc-24-01-185.pdf>

84.Lomba L, Apóstolo J, Mendes F. Consumo de drogas, alcohol y conductas sexuales en los ambientes recreativos nocturnos de Portugal. *Adicciones*. 2009;21(4):309-26.

85.López-Sánchez U, Onofre-Rodríguez DJ, Torres-Obregon R, Benavides-Torres RA, Garza-Elizondo ME. Hipermasculinidad y uso de condón en hombres que tienen sexo con hombres y mujeres. *Health Addict Salud Drogas*. 2021;21(1):63-75. Disponible en: <https://doi.org/10.21134/haaj.v21i1.510>

86.Marcus U, Gassowski M, Drewes J. HIV risk perception and testing behaviours among men having sex with men (MSM) reporting potential transmission risk in the previous 12 months from a large online sample of MSM living in Germany. *Public Health*. 2016;16. Disponible en: <https://doi.org/10.1186/s12889-016-3759-5>

87.Martinez O, Muñoz-Laboy M, Levine TS, Dolezal C, Dodge B, Icard L, et al. Relationship factors associated with sexual risk behavior and high-risk alcohol consumption among Latino men who have sex with men:

Challenges and opportunities to intervene on HIV risk. *Arch Sex Behav.* 2017;46(4):987-99. Disponible en: <https://doi.org/10.1007/s10508-016-0835-y>

88. Matarelli S. Sexual Sensation Seeking and Internet Sex-Seeking of Middle Eastern Men Who Have Sex with Men. *Arch Sex Behav.* 2013;42(7):1285-97.

89. Medrano L, Pérez E. *Manual de Psicometría y Evaluación Psicológica.* Ed. Brujas; 2019.

90. Mendoza-Pérez JC, Ortiz-Hernández L. Factores asociados con el uso inconsistente de condón en hombres que tienen sexo con hombres de Ciudad Juárez. *Rev Salud Pública.* 2009.

91. McCree DH, Oster AM, Jeffries WL IV, Denson DJ, Lima AC, Whitman H, et al. HIV acquisition and transmission among men who have sex with men and women: what we know and how to prevent it. *Prev Med.* 2017;100:132-4. Disponible en: <https://doi.org/10.1016/j.ypmed.2017.04.024>

92. McKenney J, Sullivan PS, Bowles KE, Oraka E, Sanchez TH, DiNenno E. HIV risk behaviors and utilization of prevention services, urban and rural men who have sex with men in the United States: Results from a National Online Survey. *AIDS Behav.* 2018;22(7):2127-36. Disponible en: <https://doi.org/10.1007/s10461-017-1912-5>

93. Milanes Sousa L, Ciabotti Elias, De Sousa Caliaría J, Cunha de Oliveira A, Gir E, Reis RK. Inconsistent use of male condoms among HIV-negative men who have sex with other men. *Rev Latino-Am Enfermagem.* 2023;31. Disponible en: <https://doi.org/10.1590/1518-8345.6327.3891>

94. Moral de la Rubia J. Validación de la Escala de Búsqueda de Sensaciones Sexuales en mexicanos casados o cohabitantes. *Rev Evaluar.* 2018;18(3):49-72. Disponible en: <https://revistas.unc.edu.ar/index.php/revaluar>

95. Moral de la Rubia J, Valdez Montero C, Onofre Rodríguez DJ. Propiedades psicométricas del Cuestionario de Influencias Situacionales para Conducta Sexual en Hombres que tienen Sexo con Hombres. *Rev Mex Invest Psicol.* 2016;8(1):1-19. Disponible en: <https://www.revistamexicanadeinvestigacionenpsicologia.com/index.php/RMIP/article/view/209/122>

96. Morell Mengual V, Gil Llarío MD, Fernández García O, Balleste Arnal R. Factors associated with condom use in anal intercourse among Spanish men who have sex with men: Proposal for an explanatory model. *AIDS Behav.* 2021;25(11):3836-45. Disponible en: <http://doi.org/10.1007/s10461-021-03282-0>

97. Morosini E. Estudio de seroprevalencia de VIH/SIDA y sífilis, factores socio comportamentales y estimación del tamaño de la población de hombres que tienen sexo con hombres en 6 regiones del Paraguay. 2011. Disponible en: <https://acortar.link/tNdtqE>

98. Morokoff PJ, Quina K, Harlow LL, Whitmire L, Grimley DM, Gibson PR, et al. Sexual Assertiveness Scale (SAS) for women: development and validation. *J Pers Soc Psychol.* 1997;73(4):790. Disponible en: [https://web.archive.org/web/20170808030614id\\_/http://www.psychwiki.com/dms/other/labgroup/Measufsdbsdbger345resWeek1/Marliyn/Morokoff1997.pdf](https://web.archive.org/web/20170808030614id_/http://www.psychwiki.com/dms/other/labgroup/Measufsdbsdbger345resWeek1/Marliyn/Morokoff1997.pdf)

99. Neal DJ, Fromme K. Event-level covariation of alcohol intoxication and behavioral risks during the first year of college. *J Consult Clin Psychol.* 2007;75(2):294-306. Disponible en: <https://doi.org/10.1037/0022-006X.75.2.294>

100. Nesoff ED, Dunkle K, Lang D. The impact of condom use negotiation self-efficacy and partnership patterns on consistent condom use among college-educated women. *Health Educ Behav.* 2016;43(1):61-7. Disponible en: <https://doi.org/10.1177/1090198115596168>

101. Ntombela NP, Kharsany A, Nonhlanhla YZ, Kohler HP, McKinnon LR. Prevalence and risk factors for HIV infection among heterosexual men recruited from socializing venues in rural KwaZulu-Natal, South Africa. *AIDS Behav.* 2021;25:3528-37. Disponible en: <https://doi.org/10.1007/s10461-021-03182-3>

102. Ober A, Dangerfield D, Shoptaw S, Ryan G, Stucky B, Friedman S. Using a “positive deviance” framework to discover adaptive risk reduction behaviors among high-risk HIV-negative Black men who have sex with men. *AIDS Behav.* 2018;22:1699-712. Disponible en: <https://doi.org/10.1007/s10461-017-1790-x>

103. Oblitas Guadalupe LA. *Psicología de la salud y calidad de vida*. Cengage Editorial; 2017.
104. Oshri A, Tubman JG, Morgan-López AA, Saavedra LM, Csizmadia A. Sexual sensation seeking, co-occurring sex and alcohol use, and sexual risk behavior among adolescents in treatment for substance use problems. *Am J Addict*. 2013;22(3):197-205. Disponible en: <https://doi.org/10.1111/j.1521-0391.2012.12027.x>
105. Osorio Leyva A, Álvarez Aguirre A, Hernández Rodríguez VM, Sánchez Perales M, Muñoz Alonso LR. Relación entre asertividad sexual y autoeficacia para prevenir el VIH/SIDA en jóvenes universitarios del área de la salud. *RIDE*. 2017. Iberoamericana para la Investigación y el Desarrollo Educativo, 7(14), 1-14. <https://doi.org/10.23913/ride.v7i14.264>
106. Ottaway Z, Finnerty F, Amlani A, Pinto-Sander N, Szanyi J, Richardson D. 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(1):91-3. Disponible en: <https://doi.org/10.1177/0956462416666753>
107. Pastor Y, Rojas-Murcia C. A comparative research of sexual behaviour and risk perception in two cohorts of Spanish university students. *Univ Psychol*. 2019;18(3):1-14. Disponible en: <https://doi.org/10.11144/Javeriana.upsy18-3.crsb>
108. Patel EU, White JL, Gaydos CA, Quinn TC, Mehta SH, Tobian AAR. Marijuana use, sexual behaviors, and prevalent sexually transmitted infections among sexually experienced males and females in the United States: findings from the National Health and Nutrition Examination Surveys. *Sex Transm Dis*. 2020;47(10):672-8. Disponible en: <https://doi.org/10.1097/OLQ.0000000000001229>
109. Pérez Ortiz R. Información, motivación y habilidades conductuales en el comportamiento de riesgo para VIH-SIDA en hombres y mujeres en edad productiva adscritos a la Unidad de Medicina Familiar #1, Delegación Aguascalientes [Tesis doctoral]. Aguascalientes: Universidad Autónoma de Aguascalientes; 2021. Disponible en: <http://bdigital.dgse.uaa.mx:8080/xmlui/bitstream/handle/11317/2022/452424.pdf?sequence=1&isAllowed=y>
110. Pérez Rosabal E, Soler Sánchez YM, Pérez Rosabal R, López Arias E, Leyva Rodríguez VV. Conocimientos sobre VIH/sida, percepción de riesgo y comportamiento sexual en estudiantes universitarios. *Multimed*. 2016;20(1):1-14. Disponible en: <https://www.medigraphic.com/pdfs/multimed/mul-2016/mul161b.pdf>
111. Pilatti A, Read JP, Pautassi RM. ELSA 2016 cohort: Alcohol, tobacco, and marijuana use and their association with age of drug use onset, risk perception, and social norms in Argentinean college freshmen. *Front Psychol*. 2017;8:1452. Disponible en: <https://doi.org/10.3389/fpsyg.2017.01452>
112. Plascencia-De la Torre JC, Chan-Gamboa EC, Salcedo-Alfaro JM. Variables psicosociales predictoras de la no adherencia a los antirretrovirales en personas con VIH-SIDA. *Rev CES Psicol*. 2019;12(3):67-79. Disponible en: <http://dx.doi.org/10.21615/cesp.12.3.5>
113. Ponce de León RS. Inicio de la pandemia. En: Centro de Investigación en Enfermedades Infecciosas [CIENI]. 30 años del VIH-SIDA. Perspectiva desde México. 2011.
114. Posada Zapata IC, Yepes Delgado CE, Patiño Olarte LM. Amor, riesgo y Sida: hombres que tienen sexo con hombres. *Rev Estud Fem*. 2020;28(1):1-13. Disponible en: <https://www.scielo.br/j/ref/a/RB4hw7z6sNvzz9BRtVwh3Jf>
115. Prabhu S, Harwell J, Kumarasamy N. Advanced HIV: diagnosis, treatment, and prevention. *Lancet HIV*. 2019;6. Disponible en: [https://doi.org/10.1016/S2352-3018\(19\)30189-4](https://doi.org/10.1016/S2352-3018(19)30189-4)
116. Programa Conjunto de las Naciones Unidas sobre el VIH SIDA (ONUSIDA). Aprovechando el momento. La respuesta al VIH en América Latina. 2020. Disponible en: [https://www.unaids.org/sites/default/files/media\\_asset/2020\\_global-aids-report-latin-america\\_es.pdf](https://www.unaids.org/sites/default/files/media_asset/2020_global-aids-report-latin-america_es.pdf)
117. Programa Conjunto de las Naciones Unidas sobre el VIH SIDA (ONUSIDA). Hoja Informativa. Estadísticas mundiales sobre el VIH. 2023. Disponible en: [https://www.unaids.org/sites/default/files/media\\_asset/UNAIDS\\_FactSheet\\_es.pdf](https://www.unaids.org/sites/default/files/media_asset/UNAIDS_FactSheet_es.pdf)



118. Ramchandani MS, Golden MR. Confronting rising STIs in the era of PrEP and treatment as prevention. *Curr HIV/AIDS Rep.* 2019;16:244-56. Disponible en: <https://doi.org/10.1007/s11904-019-00446-5>
119. Reidl Martínez LM, Guillén Riebeling RS. Diseños multivariados de investigación en ciencias sociales. UNAM; 2019.
120. Reis RK, Melo ES, Fernandes NM, Antonini M, Neves LAS, Gir E. Inconsistent condom use between serodifferent sexual partnerships to the human immunodeficiency virus. *Rev Latinoam Enferm.* 2019;27:e3222. Disponible en: <https://doi.org/10.1590/1518-8345.3059.3222>
121. Resnick D, Morales K, Gross R, Petsis D, Fiore D, Davis-Vogel A, Metzger D, Frank I, Wood S. Prior sexually transmitted infection and human immunodeficiency virus risk perception in a diverse at-risk population of men who have sex with men and transgender individuals. *AIDS Patient Care STDS.* 2021;35(1):15-22. Disponible en: <https://doi.org/10.1089/apc.2020.0179>
122. Restrepo Pineda JE, Villegas Rojas S. Factores asociados con el uso del condón en trabajadoras y trabajadores sexuales de origen venezolano en Colombia. *Rev Panam Salud Pública.* 2023;47:1-7. Disponible en: <https://doi.org/10.26633/RPSP.2023.2>
123. Rodríguez Vázquez N, López García K, Rodríguez Aguilar L, Guzmán Facundo F. Inhibición de respuesta y su relación con el consumo de alcohol en estudiantes de bachillerato. XVI Coloquio Panamericano de Investigación en Enfermería, Cuba; 2018. Disponible en: <https://coloquioenfermeria2018.sld.cu/index.php/coloquio/2018/paper/viewFile/463/355>
124. Rojas Concepción AA. 40 años de una pandemia aún presente: el VIH-SIDA. *Rev Cienc Méd Pinar Río.* 2021;25(4). Disponible en: <http://scielo.sld.cu/pdf/rpr/v25n4/1561-3194-rpr-25-04-e5225.pdf>
125. Rosenstock IM. The health belief model and preventive health behavior. *Health Educ Monogr.* 1966;2:354-86. Disponible en: <https://journals.sagepub.com/doi/10.1177/109019817400200405>
126. Sanabria-Mazo JP, Hoyos-Hernández PA, Bravo F. Psychosocial factors associated with HIV testing in Colombian university students. *Acta Colomb Psicol.* 2020;23(1):158-68. Disponible en: <http://www.doi.org/10.14718/ACP.2020.23.1.8>
127. Sánchez Medina R, Enríquez Negrete DJ, Rosales Piña CR. Modelo de apoyo y resiliencia sexual sobre el uso del condón en hombres que viven con VIH. En: Castillo Arcos LC, Maas Góngora L, Telumbre Terrero JY, editores. *Psicología Social en México.* Universidad Autónoma del Carmen; 2022.
128. Sánchez Medina R, Enríquez Negrete DJ, Rosales Piña CR, Pérez Martínez PU. Diseño y validación de dos escalas de comunicación sexual con la pareja en hombres que tienen sexo con hombres. *Pensando Psicol.* 2021;17(2):1-31. Disponible en: <https://doi.org/10.16925/2382-3984.2021.02.01>
129. Sánchez Medina R, Lozano Quiroz MF, Negrete Rodríguez OI, Enríquez Negrete DJ, Estrada Martínez MA. Validación de la escala de percepción de riesgo ante el VIH (EPR-VIH) en hombres. *Rev Psicol.* 2021;20(2):34-54. Disponible en: <http://doi.org/10.24215/2422572Xe110>
130. Santillán Torres Torija C. Adherencia terapéutica en personas que viven con VIH-SIDA [Tesis de Grado]. Universidad Nacional Autónoma de México; 2014. Disponible en: <http://132.248.10.225:8080/bitstream/handle/123456789/76/62.pdf?sequence=1>
131. Santos-Iglesias P, Sierra JC. El papel de la asertividad sexual en la sexualidad humana: una revisión sistemática. *Int J Clin Health Psychol.* 2010;10(3):553-77. Disponible en: <https://www.redalyc.org/pdf/337/33714079010.pdf>
132. Saura S, Jorquera V, Rodríguez D, Mascort C, Castella I, García J. Percepción del riesgo de infecciones de transmisión sexual/VIH en jóvenes desde una perspectiva de género. *Aten Primaria.* 2019;51(2):61-70. Disponible en: <https://doi.org/10.1016/j.aprim.2017.08.005>
133. Secretaría de Salud. Reglamento de la Ley General de Salud en Materia de Investigación para la Salud

- (Núm. 141). Diario Oficial de la Federación; 2014. Disponible en: [https://www.diputados.gob.mx/LeyesBiblio/regley/Reg\\_LGS\\_MIS.pdf](https://www.diputados.gob.mx/LeyesBiblio/regley/Reg_LGS_MIS.pdf)
134. Secretaría de Salud. Sistema de vigilancia epidemiológica de VIH. Informe histórico de VIH 4to trimestre 2023; 2023. Disponible en: [https://www.gob.mx/cms/uploads/attachment/file/909291/VIH\\_DVEET\\_4toTrim\\_2023.pdf](https://www.gob.mx/cms/uploads/attachment/file/909291/VIH_DVEET_4toTrim_2023.pdf)
135. Senado Dumoy J. Los factores de riesgo. *Rev Cuba Med Gen Integr.* 1999;15(4):446-52. Disponible en: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S0864-21251999000400018&lng=es&tlng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0864-21251999000400018&lng=es&tlng=es)
136. Shadaker S, Magee M, Paz-Bailey G, Hoots BE, NHBS Study Group. Characteristics and risk behaviors of men who have sex with men and women compared with men who have sex with men—20 US cities, 2011 and 2014. *J Acquir Immune Defic Syndr.* 2017;75:281-7. Disponible en: <http://10.1097/QAI.0000000000001403>
137. Sharp P, Hahn B. The evolution of HIV-1 and the origin of AIDS. *Philos Trans R Soc B Biol Sci.* 2010;365(552):2487-94.
138. Schecke H, Lea T, Bohn A, Köhler T, Sander D, Scherbaum N, Deimel D. Crystal Methamphetamine Use in Sexual Settings Among German Men Who Have Sex with Men. *Front Psychiatry.* 2019;10:886. Disponible en: <https://doi.org/10.3389/fpsy.2019.00886>
139. Sierra JC, Vallejo Medina P, Santos Iglesias P. Propiedades psicométricas de la versión española de la Sexual Assertiveness Scale (SAS). *Rev Anales Psicol.* 2011;27(1):17-26. Disponible en: <https://www.redalyc.org/pdf/167/16717018003.pdf>
140. Skidmore CR, Kaufman EA, Crowell SE. Substance use among college students. *Child Adolesc Psychiatr Clin.* 2016;25(4):735-53. Disponible en: <https://doi.org/10.1016/j.chc.2016.06.004>
141. Stover J, Teng Y. The impact of condom use on the HIV epidemic. *Gates Open Res.* 2022;5:91. Disponible en: <https://doi.org/10.12688/gatesopenres.13278.2>
142. Sullivan S, Stephenson R. Perceived HIV prevalence accuracy and sexual risk behavior among gay, bisexual, and other men who have sex with men in the United States. *AIDS Behav.* 2018;22(6):1849-57. Disponible en: <https://doi.org/10.1007/s10461-017-1789-3>
143. Supo J. Seminarios de Investigación Científica: Metodología de la Investigación para Las Ciencias de la Salud. Createspace Independent Pub; 2012.
144. Tan R, Kaur N, Chen M, Wong C. Individual, interpersonal, and situational factors influencing HIV and other STI risk perception among gay, bisexual, and other men who have sex with men: a qualitative study. *AIDS Care.* 2020;32(12):1538-43. Disponible en: <https://doi.org/10.1080/09540121.2020.1734176>
145. Terroni NN. La comunicación y la asertividad del discurso durante las interacciones grupales presenciales y por computadora. *Psico-USF.* 2009;14(1):35-46. Disponible en: <https://doi.org/10.1590/S1413-82712009000100005>
146. Tobón BA, García Peña JJ. VIH: Una mirada a la luz de lo psicosocial. *Psicol Salud.* 2022;32(2):215-25. Disponible en: <https://doi.org/10.25009/pys.v32i2.2743>
147. Tomkins A, George R, Kliner M. Sexualised drug taking among men who have sex with men: a systematic review. *Perspect Public Health.* 2018;139(1):23-33. Disponible en: <https://doi.org/10.1177/1757913918778872>
148. Torres Obregón R, Onofre Rodríguez DJ, Benavides Torres RA, Calvillo C, Garza Elizondo ME, Telumbre Terrero JY. Riesgo percibido y balance decisional hacia la prueba del VIH en hombres que tienen sexo con hombres de Monterrey, México. *Enferm Clin.* 2018;28(6):394-400. Disponible en: <https://doi.org/10.1016/j.enfcli.2018.06.008>
149. Torres Obregón R, Onofre Rodríguez D, Sierra JC, Benavides Torres RA, Garza Elizondo ME. Validación de la Sexual Assertiveness Scale en mujeres mexicanas. *Suma Psicol.* 2017;24:34-41. Disponible en: <https://www.https://doi.org/10.56294/mw2024475>

[redalyc.org/pdf/1342/134252832005.pdf](https://redalyc.org/pdf/1342/134252832005.pdf)

150. Uribe JI, Andrade PP, Zacarías SX, Betancourt OD. Predictores del uso del condón en las relaciones sexuales de adolescentes, análisis diferencial por sexo. *Rev Intercont Psicol Educ*. 2013;15(2):75-92. Disponible en: <https://salutsexual.sidastudi.org/resources/inmagic-img/DD65373.pdf>

151. Uribe-Alvarado JI, Bahamón MJ, Reyes-Ruiz L, Trejos-Herrera A, Alarcón-Vásquez Y. Percepción de autoeficacia, asertividad sexual y práctica sexual protegida en jóvenes colombianos. *Acta Colomb Psicol*. 2017;20(1):203-11. Disponible en: <https://www.redalyc.org/pdf/798/79849735010.pdf>

152. Uribe Rodríguez AF. Evaluación de factores psicosociales de riesgo para la infección por el VIH SIDA en adolescentes colombianos [Tesis de Doctorado]. Universidad de Granada; 2005.

153. Valdez Montero C. Modelo de conducta sexual en hombres que tienen sexo con hombres [Tesis de Posgrado]. Universidad Autónoma de Nuevo León, México; 2015.

154. Valdez Montero C, Benavides Torres R, González González V, Onofre Rodríguez D, Castillo Arcos L. Internet y conducta sexual de riesgo para VIH/SIDA en jóvenes. *Enferm Global*. 2015;38:151-9. Disponible en: <https://scielo.isciii.es/pdf/eg/v14n38/docencia3.pdf>

155. Valdez Montero C, Castillo Arcos L, Olvera Blanco A, Onofre Rodríguez DJ, Caudillo Ortega L. Reflexión de los determinantes sociales de la conducta sexual en hombres que tienen relaciones sexuales con hombres. *Cuid Enferm Educ Salud*. 2015;2(1):34-47. Disponible en: <http://www.sidastudi.org/es/registro/a53b7fb35964dafc0159db90274e020b>

156. Valencia J, Gutiérrez J, Troya J, González A, Dolengevich H, Cuevas G, Ryan P. Consumo de drogas recreativas y sexualizadas en varones negativos: datos desde un screening comunitario de VIH. *Rev Multidisc SIDA*. 2018;6(13):1-13. Disponible en: <https://www.sidastudi.org/resources/inmagic-img/DD49157.pdf>

157. Valencia González M, Trujillo E. VIH, la otra pandemia. *Ciencias*. 2021;28-9.

158. Vallée A. Sexual behaviors, cannabis, alcohol and monkeypox infection. *Front Public Health*. 2023;10:1054488. Disponible en: <https://doi.org/10.3389/fpubh.2022.1054488>

159. Wang W, Yan H, Duan Z, Yang H, Li X, Ding C, Li S. Relationship between sexual sensation seeking and condom use among young men who have sex with men in China: Testing a moderated mediation model. *AIDS Care*. 2021;33(7):914-9. Disponible en: <https://doi.org/10.1080/09540121.2020.1808156>

160. Waugh M. The role of condom use in sexually transmitted disease prevention: facts and controversies. *Clin Dermatol*. 2010;28(5):549-52. Disponible en: <https://doi.org/10.1016/J.CLINDERMATOL.2010.03.014>

161. Wim VB, Christiana N, Marie L. Syndemic and other risk factors for unprotected anal intercourse among an online sample of Belgian HIV negative men who have sex with men. *AIDS Behav*. 2014;18(1):50-8. Disponible en: <https://doi.org/10.1007/s10461-013-0516-y>

162. Xu JJ, Qian HZ, Chu ZX, et al. Recreational drug use among Chinese men who have sex with men: a risky combination with unprotected sex for acquiring HIV infection. *Biomed Res Int*. 2014;14:642. Disponible en: <https://doi.org/10.1155/2014/725361>

163. Xu W, Zheng L, Liu Y, Zheng Y. Sexual sensation seeking, sexual compulsivity, and high-risk sexual behaviours among gay/bisexual men in Southwest China. *AIDS Care*. 2016;28(9):1138-44. Disponible en: <https://doi.org/10.1080/09540121.2016.1153587>

164. Yañez C. Columna de Salud: La falta de percepción de riesgo explican aumentos de los casos de VIH. *La Tercera*. 2018. Disponible en: <https://www-proquest-com.wdg.biblio.udg.mx:8443/docview/2289787497/B796E7E54F4E42F9PQ/1?accountid=28915>

165. Zamboni BD, Crawford I, Williams PG. Examining communication and assertiveness as predictors of condom use: Implications for HIV prevention. *AIDS Educ Prev*. 2000;12:492-504.

166. Zuckerman M. Sensation seeking. En: Leary MR, Hoyle RH, editores. Handbook of individual differences in social behavior. New York: The Guildford Press; 2009. p. 455-65.

## FINANCING

The authors did not receive funding for the development of this research.

## CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

## CONTRIBUTION OF AUTHORSHIP

*Conceptualization:* Juan Carlos Plascencia-De la Torre, Kalina Isela Martínez-Martínez, Fredi Everardo Correa-Romero, Ricardo Sánchez-Medina, Oscar Ulises Reynoso-González.

*Data curation:* Juan Carlos Plascencia-De la Torre, Kalina Isela Martínez-Martínez, Fredi Everardo Correa-Romero, Ricardo Sánchez-Medina, Oscar Ulises Reynoso-González.

*Formal analysis:* Juan Carlos Plascencia-De la Torre, Kalina Isela Martínez-Martínez, Fredi Everardo Correa-Romero, Ricardo Sánchez-Medina, Oscar Ulises Reynoso-González.

*Research:* Juan Carlos Plascencia-De la Torre, Kalina Isela Martínez-Martínez, Fredi Everardo Correa-Romero, Ricardo Sánchez-Medina, Oscar Ulises Reynoso-González.

*Methodology:* Juan Carlos Plascencia-De la Torre, Kalina Isela Martínez-Martínez, Fredi Everardo Correa-Romero, Ricardo Sánchez-Medina, Oscar Ulises Reynoso-González.

*Project administration:* Juan Carlos Plascencia-De la Torre, Kalina Isela Martínez-Martínez, Fredi Everardo Correa-Romero, Ricardo Sánchez-Medina, Oscar Ulises Reynoso-González.

*Resources:* Juan Carlos Plascencia-De la Torre, Kalina Isela Martínez-Martínez, Fredi Everardo Correa-Romero, Ricardo Sánchez-Medina, Oscar Ulises Reynoso-González.

*Software:* Juan Carlos Plascencia-De la Torre, Kalina Isela Martínez-Martínez, Fredi Everardo Correa-Romero, Ricardo Sánchez-Medina, Oscar Ulises Reynoso-González.

*Supervision:* Juan Carlos Plascencia-De la Torre, Kalina Isela Martínez-Martínez, Fredi Everardo Correa-Romero, Ricardo Sánchez-Medina, Oscar Ulises Reynoso-González.

*Validation:* Juan Carlos Plascencia-De la Torre, Kalina Isela Martínez-Martínez, Fredi Everardo Correa-Romero, Ricardo Sánchez-Medina, Oscar Ulises Reynoso-González.

*Visualization:* Juan Carlos Plascencia-De la Torre, Kalina Isela Martínez-Martínez, Fredi Everardo Correa-Romero, Ricardo Sánchez-Medina, Oscar Ulises Reynoso-González.

*Writing - original draft:* Juan Carlos Plascencia-De la Torre, Kalina Isela Martínez-Martínez, Fredi Everardo Correa-Romero, Ricardo Sánchez-Medina, Oscar Ulises Reynoso-González.

*Writing - review & editing:* Juan Carlos Plascencia-De la Torre, Kalina Isela Martínez-Martínez, Fredi Everardo Correa-Romero, Ricardo Sánchez-Medina, Oscar Ulises Reynoso-González.