

## FACTORS ASSOCIATED WITH SAFE SEXUAL BEHAVIOR AMONG MSM LIVING WITH HIV: A SCOPING REVIEW

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### ABSTRACT

*Background: Human Immunodeficiency Virus (HIV) is a virus that attacks lymphocytes, leading to a gradual decline in the body's immune system and increasing susceptibility to various diseases, including Acquired Immunodeficiency Syndrome (AIDS). Men who have sex with men (MSM) are at a higher risk of contracting HIV/AIDS due to unsafe sexual behavior. Objective: This scoping review aims to explore the factors associated with safe sexual behavior in MSM Living with HIV. Method: The scoping review is based on the framework by Arksey and O'Malley. A literature search involved various databases, such as EBSCO, PubMed, Science Direct, and CINAHL I, with the keywords: "Factors Associated" AND "Safe Sex Behavior" AND "Men Who Have Sex With Men OR MSM OR LSL". The selection process for research articles involved the use of inclusion criteria. The results were analyzed by extracting data into a data mapping table (PRISMA Flow Diagram). Results: 20 articles discussed factors related to safe sexual behavior among men with HIV/AIDS. These factors include individual perception, knowledge, and values. Discussion: It can be concluded that individual perception strongly influences safe sexual behavior among men, as individual perceptions can guide and motivate behavior.*

**KEYWORDS** HIV, AIDS, Safe Sexual Behavior, Men Who Have Sex With Men



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### INTRODUCTION

Human Immunodeficiency Virus (HIV) is a virus that infects T cells (T-Helper cells), which play a role in macrophage activation. CD4 is present on T-helper cells and works to activate innate immune system cells, B lymphocytes, cytotoxic T cells, and non-immune cells. It also plays a crucial role in suppressing immune responses. Therefore, when HIV attacks CD4, it can lead to immune system disorders (Putri, Sinta Armadi, Hariyanto Hariyanto, 2019). If HIV

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continuously attacks CD4, the number of CD4 can decrease to below 200 cells/mm<sup>3</sup>, which results in sufferers being very susceptible to various opportunistic diseases called Acquired Immunodeficiency Syndrome (AIDS) (Daili, 2018).

The incidence of HIV and AIDS in the world is uneven. Their prevalence in ASEAN countries is 0.3% in Cambodia, 0.4% in Malaysia, 0.3% in Indonesia, 0.9% in Papua New Guinea, 1% in Thailand, 0.3% in Vietnam, 0.2% in the Philippines, 0.7% in Myanmar, and 0.3% in Laos (AIDSDATAHUB, 2023). MSM is one of the high-risk groups for HIV/AIDS. MSM have sexual intercourse with many partners, both men and women (P. A. Chandra, Z. Shaluhayah, 2018). Anal intercourse, often practiced by men who have sex with men (MSM), poses the highest risk of transmitting HIV and AIDS due to the thin anal tissue, which is prone to tearing. These tears can create entry points for bacteria and viruses (Brugman, S. G., SUHARTO, S., & NUGRAHENI, 2019).

Safe sex behavior is a safe action when having sex, such as using condoms, asking about your partner's sexual history, and doing voluntary counseling and testing (VCT) (Brugman, S. G., SUHARTO, S., & NUGRAHENI, 2019). Health Belief Model is a theoretical model that aims to determine one's perception of accepting or not accepting an individual's health condition. This model consists of perceived susceptibility, perceived severity, perceived barriers, perceived benefits, cues to action, and self-efficacy (Rosenstock, 1974) It can analyze factors associated with safe sexual behavior in MSM Living with HIV.

The results showed that 67% of respondents admitted to using condoms inconsistently, and 78% had anal sex without condoms in the last three (3) months (Ezomoh, 2012). This is in line with the results of studies which show that many respondents are still inconsistent in using condoms; respondents in the case and control groups who were inconsistent in using condoms were respectively 63.0% and 33.3%, while respondents in the case and control groups who were consistent in using condoms were respectively 37.0% and 66.7% (Sidjabat, et al., 2017).

Other studies have shown that many MSM still perceive that the confidentiality of their privacy may not be maintained, as well as informants' fear of the positive results of their VCT tests. Informants are worried that it will negatively affect their mental and physical health since most informants are sexually active MSM, and they are well aware of the risks of having anal sex. This is an obstacle for informants to do VCT as it makes informants reluctant to do VCT. The fear of needles also makes informants reluctant to do VCT voluntarily (Fatmala, 2016).

The low rate of safe sex behavior among MSM can increase the prevalence of HIV and AIDS, as well as increase the prevalence of sexually transmitted diseases. Therefore, researchers are interested in researching the analysis of factors associated with safe sex behavior among men who have sex with men living with HIV.

## RESEARCH METHOD

This scoping review follows the framework developed by Arksey and O'Malley. The process involves several key steps (Aromataris & Munn, 2020), including :

### Identifying Research Questions

The research question was identified using the PICO formulation. The following is the PICO table.

**Tabel 1. PICO Format**

Format	Keywords
P : (Patient/Population/Problem)	Men Who Sex With Men OR MSM OR LSL
I : (Intervention,/Prognostic Factor/Exposure)	Safe sex behavior factors
C : (Comparison/Control)	-
O: (Outcome)	Factors associated with safe sex behavior

Based on the PICO table above, the research question for this scoping review is: What factors are associated with safe sexual behavior among men who have sex with men living with HIV?

### Identifying Relevant Studies

The relevant studies were identified using the following keywords in the article search: "Factors Related" AND "Safe Sex Behavior" AND "Men Who Have Sex With Men" OR "MSM" OR "MSL". The article search involved several databases, including EBSCO, PubMed, ScienceDirect, and Scopus.

### Selecting Research Articles

In selecting research articles to be used for preparing this scoping review, the researchers used article inclusion and exclusion criteria that followed the topic discussed. This scoping review includes the following criteria:

- a. Primary research articles
- b. Articles discussing factors associated with safe sexual behavior among MSM
- c. Research articles involving respondents who are MSM
- d. Articles published between 2014 and 2024
- e. Articles written in English
- f. Articles with full text and open access
- g. Types of research including Randomized Controlled Trials (RCT) and Cross-sectional Studies.

Exclusion criteria for articles include articles originating from blogspots (1), opinion/discussion articles, articles in Indonesian, and articles with a publication year <2014.

### Charting the Data

In the data charting stage, the researcher used the steps from the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) with the keywords: "Factors Related" AND "Safe Sex Behavior" AND "Men Who Have Sex With Men OR MSM OR LSL". The following is a PRISMA Flow Diagram for charting article data.

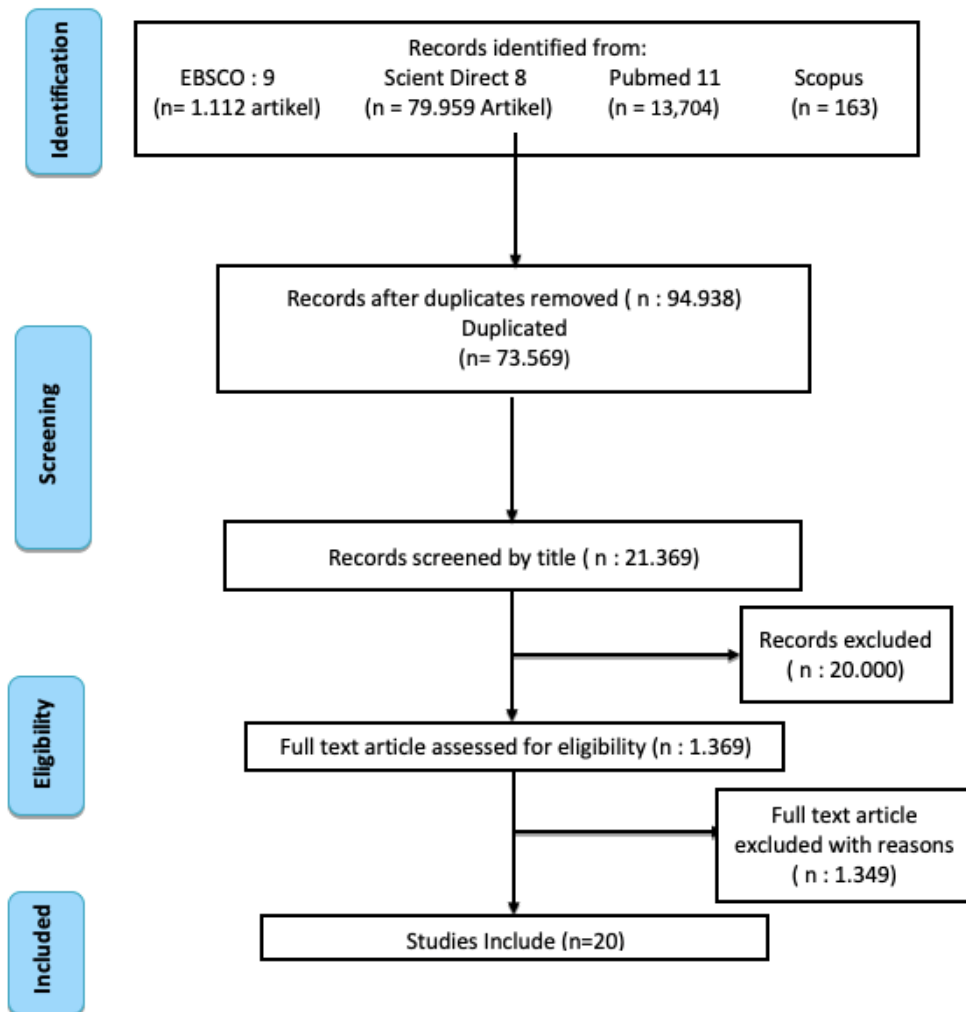


Figure 1. PRISMA Flow Diagram For Scoping Review

Table 2. Journal articles related to previous studies using data extraction tables, we independently mapped article data contained by all authors, titles, articles, methods, and findings

No	Authors	Research Title	Country	Design/Method	Objective	Results
1	(Huang et al., 2020)	Association between Psychological Factors and Condom Use with Regular and Nonregular Male Sexual Partners among Chinese	China	Design: Randomized Controlled Trial (RCT) Sampling Technique:	To analyze the factors related to individual beliefs regarding condom use among MSM.	The factors associated with safe sexual behavior, that is condom use, among men who have sex with men in China with regular partners include perceived

No	Authors	Research Title	Country	Design/Method	Objective	Results
		MSM: A Quantitative Study Based on the Health Belief Model		Snowball sampling; Number of samples: 817 respondents		severity, perceived barriers, self-efficacy, and cues to action. The factors for consistent condom use with non-regular partners include perceived barriers, self-efficacy, and cues to action.
	(Marcus et al., 2016)	HIV risk perception and testing behaviors among men having sex with men (MSM) reporting potential transmission risks in the previous 12 months from a large online sample of MSM living in Germany	Germany	Design: Randomized Controlled Trial (RCT) Sampling Technique : Total sampling Number of samples: 1,171 respondents	To identify the barriers associated with HIV testing behavior among MSM.	The factors that hinder the use of HIV testing among MSM include age, ineffective accessibility of HIV testing services, and lack of interest in available health services. Other factors influencing MSM in undergoing HIV testing are perceived susceptibility and severity and feelings of shame associated with HIV testing.
3	(Khumsaen & Stephenson, 2017)	Beliefs and Perception About HIV/AIDS, Self-Efficacy, and HIV Sexual Risk Behaviors Among Young Thai Men Who Have Sex With Men	Thailand	Design: Descriptive Cross-Sectional Sampling Technique : Purposive sampling Number of samples: 1,349 respondents	To examine the relationship between individual beliefs regarding HIV/AIDS, self-efficacy in AIDS preventive behavior, perceptions of HIV as a chronic disease, and HIV risky behavior among men who have sex with men in Thailand.	There is a relationship between beliefs about HIV, self-efficacy in HIV prevention, individual perceptions of HIV severity, and risky sexual behavior among men who have sex with men in Thailand.
4	(Abebe & Mitikie, 2009)	Perception of high school students towards voluntary HIV counseling and testing, using health belief model in Butajira, SNNPR	Ethiopia	Design: Cross-Sectional Sampling Technique : Multi-stage sampling Number of samples: 1,349 respondents	To assess the relationship between the perceptions and attitudes of male students who have sex with men towards VCT services using the Health Belief Model.	There is a relationship between perceived susceptibility, perceived barriers, perceived benefits, age, and previous sexual experience with the use of VCT among MSM students.
5	(Zhang et al., 2023)	Low behavioral intention to use any type of HIV testing and HIV self-testing among migrant male factory workers who are at high risk of HIV infection in China: A secondary data analysis	China	Design: Cross-Sectional Sampling Technique : Stratified multi-stage sampling Number of samples: 363 respondents	To analyze the prevalence and factors associated with the willingness to undergo HIV testing in the next six months among migrant male factory workers who have sex with men and are at high risk of HIV infection in China.	There was an increase in HIV prevalence among migrant male factory workers who have sex with men. Factors associated with the willingness to undergo HIV testing were perceived benefits, perceived cues to action, perceived self-efficacy, and health education through video presentations.
6	(McGarrity et al., 2018)	Longitudinal predictors of behavioral intentions and HIV service use among men who have sex with men	China	Design: Cross-Sectional Sampling Technique : Snowball sampling Number of samples: 613 respondents	To analyze the factors associated with the use of HIV healthcare services among MSM.	The factors associated with the use of HIV testing services among MSM Living with HIV are cues to action. This is because of the awareness of the individuals, particularly MSM, and the encouragement from the surrounding environment, such as partners and community peers. However, perceived barriers and perceived susceptibility are not associated.
7	(Wang et al., 2018)	Condom use social norms and self-efficacy with different kinds of male partners among Chinese men who have sex with men: results from an online survey	China	Design: Cross-Sectional Sampling Technique : Total sampling Number of samples: 1.057 respondents	To analyze the relationship between social norms and self-efficacy on consistent condom use among MSM in China.	Most MSM typically choose to engage in sexual activity with a regular partner. There is a relationship between social norms and confidence in using condoms among MSM. When

No	Authors	Research Title	Country	Design/Method	Objective	Results
8	(Darmawansyah et al., 2014)	The analysis of factors affecting the use of VCT service for high-risk groups infected with HIV/AIDS in Makassar	Indonesia	Design: Cross-Sectional Sampling Technique: Stratified random sampling Number of samples: 133 respondents	To analyze the factors influencing the use of VCT services among high-risk groups infected with HIV/AIDS in Makassar.	social norms are viewed as guidelines in the lives of MSM, they tend to adhere to these prevailing norms, which aligns with their self-efficacy. High self-efficacy influences the use of condoms among MSM when engaging in sexual activity with their partners.  The factors associated with the use of VCT services among high-risk HIV groups include knowledge, perceived threat, perceived benefits, perceived barriers, family support, and support from healthcare workers such as doctors, nurses, and counselors. The most influential variable in the VCT use is perceived benefit.
9	(Rahim et al., 2021)	The Relationship between Self-Efficacy and Spirituality in Condom Use Behaviour among Msm-Plwha in Bandung, Indonesia	Indonesia	Design: Cross-Sectional Sampling Technique: Consecutive sampling techniques. Number of samples: 251 respondents	To determine the relationship between self-efficacy and spirituality on condom use behavior among MSM.	The relationship between self-efficacy and condom use behavior is significant. There is also a relationship between spirituality and condom use behavior. A multivariate analysis using multiple logistic regression found that condom use self-efficacy is the most dominant factor influencing condom use behavior. Therefore, having high self-efficacy and positive spiritual factors will increase awareness and ability to use condoms among MSM.
10	(Zucoloto et al., 2023)	Knowledge and perceptions on the existence of Voluntary Counseling and Testing (VCT) Centers and associated factors among Brazilian LGBT+ individuals	Brazil	Design: Cross-Sectional Sampling Technique: Purposive sampling Number of samples: 1,630 respondents	To investigate the knowledge and perceptions of LGBT individuals in Brazil regarding the existence of VCT centers and their relation to risky behavior.	Most MSM are familiar with VCT services. They have reported the presence of VCT facilities in their city, and most have already used these services. However, a significant number have not visited a VCT due to a lack of understanding about the benefits. When asked about their satisfaction with VCT, most participants expressed contentment, while others were dissatisfied. Among those who were dissatisfied, the main reasons cited were excessive waiting times, lack of trust in the counselor, and insufficient privacy. It's worth noting that most MSM perceive themselves as highly susceptible to and severely affected by HIV.
11	(Suryani, A. I., & San Sao, 2021)	The Determinants Perception Of Male Sex With Man (Msm) Concerning The Utilization Of VCT (Voluntary Counselling And Testing) HIV / AIDS In Dili Municipality, Timor-Leste	Timor Leste	Design: Cross-Sectional Sampling Technique: Convenient sampling Number of samples: 150 respondents	To identify the determinants of MSM perceptions regarding VCT use.	The factors associated with VCT use are knowledge, discrimination, perceived susceptibility, perceived severity, perceived barriers, and information from community

No	Authors	Research Title	Country	Design/Method	Objective	Results
12	(Stephenson et al., 2015)	HIV Testing Behaviors and Perceptions of Risk of HIV Infection Among MSM with Main Partners	America	Design: Cross-Sectional Sampling Technique: Random sampling Number of samples: 906 respondents	To assess HIV testing behavior and perceptions among MSM Living with HIV.	peers, partners, and social media. Most MSM reported having routine HIV tests at least once a year. MSM who only have sex with one partner believes that they are not at personal risk of HIV infection. MSM are also confident that they will remain HIV-negative throughout their lives. Other factors such as age, race, education, and occupation, as well as having a primary partner, are also related to the perception of HIV risk among MSM.
13	(Appenroth et al., 2022)	Sexual happiness and satisfaction with sexual safety among German trans men who have sex with men: results from EMIS-2017	German	Design: Cross-Sectional Sampling Technique: Random sampling Number of samples: 23.001 respondents	To identify the current state of sexual happiness and safety among German trans men who have sex with men.	MSM in Germany are unhappy with their partners and their current sex lives due to their lack of stable finances to live together. According to them, they often practice safe sexual behaviors, such as using condoms with their partners. However, some have not yet dared to undergo VCT.
14	(Sharma et al., 2018)	Birth Cohort Variations Across Functional Knowledge of HIV Prevention Strategies, Perceived Risk, and HIV-Associated Behaviors Among Gay, Bisexual, and Other Men Who Have Sex With Men in the United States	American	Design: Cross-Sectional Sampling Technique: Snowballing sampling Number of samples: 2,241 respondents	To describe the differences between generations regarding functional knowledge of HIV prevention strategies, perceived risk, recent condomless anal sex (CAS), and HIV testing behavior.	The younger generation has the same concerns about contracting HIV as the older generation. The perceived susceptibility is high among non-Hispanic, non-white, and Hispanic GBMSM. Conversely, it is lower among those with higher education and those who are in a relationship. Younger GBMSM have a broader knowledge of HIV prevention strategies compared to the older generation, but both are equally worried about contracting HIV. This is because as time goes on and technology in education advances, it is easier for the younger generation to access information. Thus, knowledge and individual perceptions influence HIV testing behavior among MSM.
15	(Jiang et al., 2019)	Predictors of condom use behavior among men who have sex with men in China using a modified information-motivation-behavioral skills (IMB) model	China	Design: Cross-Sectional Sampling Technique: Convenience sampling Number of samples: 1,174 respondents	To provide a theoretical framework for safe sex behavioral interventions.	Most MSM use condoms during sexual intercourse. The final modified IMB model can explain that behavioral skills are related to condom use behavior. There is also a partial relationship between information, motivation, and condom use. Other factors not directly related include education, income, acceptance of HIV prevention services, sexual partner-seeking behavior, depression, and intimate partner violence.
16	(Mor et al., 2017)	HIV infected men who have sex with men in Israel:	Israel	Design: Cross-Sectional Sampling Technique: Total sampling	To assess the knowledge, attitudes, and sexual practices of	Most MSM know about HIV and the necessary treatments for individuals with HIV. The

No	Authors	Research Title	Country	Design/Method	Objective	Results
		knowledge, attitudes and sexual behavior		Number of samples: 1,599 respondents	HIV-infected MSM in Israel.	majority of MSM are also capable of practicing safe sexual behavior, such as using condoms during sexual intercourse. MSM also choose to be open about their HIV status and sexual history with their partners.
17	(Li et al., 2020)	Growth Trajectories of Peer Norms, Self-efficacy and Condom Use Behavior Among Sexually Active Chinese Men Who Have Sex with Men: Latent Class Analysis and Growth Mixture Modeling	China	Design: Cross-Sectional Sampling Technique: Total sampling Number of samples: 804 respondents	To analyze the development and influence of norms, peers, and self-efficacy, as well as to identify sociodemographic factors related to condom use behavior.	Social norms, peers, and age are associated with condom use behavior among MSM, while self-efficacy and income are associated with condom use among MSM.
18	(Sheehy et al., 2014)	High levels of bisexual behavior and factors associated with bisexual behavior among men having sex with men (MSM) in Nigeria	Nigeria	Design: Cross-Sectional Sampling Technique: Respondent-driven sampling (RDS) Number of samples: 557 respondents	To analyze the factors associated with sexual behavior among MSM in Nigeria.	Most MSM have sex with multiple partners and do not use condoms. Factors associated with sexual behavior among MSM include marital status, number of partners, education, partner encouragement, religion, and accessibility of health services.
19	(Nelson et al., 2015)	Predictors of condom use among peer social networks of men who have sex with men in Ghana, West Africa	Africa	Design: Cross-Sectional Sampling Technique: snowballing sampling Number of samples: 137 respondents	To examine the influence of psychosocial factors on condom use among MSM and the extent to which peers predict condom use for anal and oral sex.	The psychosocial factors associated with condom use among MSM include peers, social norms, a sense of togetherness, knowledge, and support from health workers.
20	(Morell-Mengual et al., 2021)	Factors Associated with Condom Use in Anal Intercourse Among Spanish Men Who Have Sex with Men: Proposal for an Explanatory Model	Spanish	Design: Cross-Sectional Sampling Technique: Purposive sampling Number of samples: 405 respondents	To analyze the factors associated with condom use among MSM.	Most MSM practice anal intercourse using condoms. Factors associated with condom use include perceived susceptibility and severity of HIV, as well as self-efficacy.

## RESULTS AND DISCUSSION

The Human Immunodeficiency Virus (HIV) is a virus that attacks T-helper cells, which play a role in the immune system. These T-helper cells contain CD4, which functions as an activator of the immune system. When HIV attacks CD4 cells, it weakens the immune system, making the body more vulnerable to diseases, hindering recovery from opportunistic infections, and potentially leading to death (Dirjen, 2014). Acquired Immunodeficiency Syndrome (AIDS) represents the final stage of HIV infection (UNAIDS, 2023). In the AIDS phase, the body exhibits symptoms such as weight loss of more than 10% within a month, chronic diarrhea lasting over a month, prolonged fever for more than a month, decreased consciousness, neurological disorders, and dementia/HIV encephalopathy (Kuswiyanto, 2016).

There are three modes of HIV transmission: sexual intercourse, the use of unsterilized or HIV-contaminated needles, and mother-to-child transmission (MTCT) during pregnancy (Indonesian Ministry of Health, 2014). Groups at high risk of contracting HIV include lesbians, gays, bisexuals, men who have sex with



men (MSM), transgenders (LGBT), commercial sex workers, injecting drug users, infants born to HIV-positive mothers, and spouses infected with HIV and AIDS (Pratiwi & Basuki, 2014). MSM tend to have multiple sexual partners, both male and female (Chandra, Putri Ade, Zahroh Shaluhiah, 2018). Anal intercourse, frequently practiced by MSM, is the sexual technique with the highest risk of transmitting HIV and AIDS (Brugman, S. G., SUHARTO, S., & NUGRAHANI, 2019). This is because the anus is not designed for sexual intercourse, so it can lead to injuries during anal sex that facilitate HIV entering the body (Goldstone, S. E., & Welton, 2004).

Safe sexual behavior refers to safe practices during sexual activity, such as using condoms, inquiring about the partner's sexual history, and undergoing voluntary counseling and testing (VCT) (Brugman, S. G., SUHARTO, S., & NUGRAHANI, 2019). Several factors influence safe sexual behavior in MSM, including individual and external factors. Individual factors encompass personal perceptions, consisting of perceived susceptibility, perceived severity, perceived barriers, perceived benefits, cues to action, and self-efficacy (Rosenstock, 1974). Besides individual factors, other factors related to safe sexual behavior include demographics, social support, and healthcare services (Green, L. W., & Kreuter, 1991).

### **1. Individual Perception**

Individual perception refers to an individual's opinion or view of something seen or felt. The Health Belief Model explains why individuals engage in healthy behaviors (Janz & Becker, 1984). Several factors are associated with safe sexual behavior (condom use), including perceived susceptibility, perceived severity, perceived barriers, perceived benefits, cues to action, and self-efficacy (Rosenstock, 1974).

### **2. Perceived Susceptibility**

The first factor is perceived susceptibility, which is an individual's opinion or view of their own risk of contracting a disease, leading them to take preventive or curative measures (Glanz et al., 2008). Perceived susceptibility to HIV is one of the factors associated with safe sexual behavior among men who have sex with men (MSM) (Abebe & Mitikie, 2009; Darmawansyah et al., 2014; Marcus et al., 2016; Morell-Mengual et al., 2021; Sharma et al., 2018; Stephenson et al., 2015; Suryani, A. I., & San Sao, 2021; Zucoloto et al., 2023). Perceived susceptibility creates a sense of worry. When MSM perceive themselves as susceptible to HIV and other sexually transmitted infections (STIs) due to risky sexual behavior, they become more cautious in their sexual activities (Chandra, Putri Ade, Zahroh Shaluhiah, 2018). High perceived susceptibility to HIV is directly proportional to high self-protective behavior. Conversely, low perceived susceptibility corresponds to low self-protective behavior (Rosenstock, 1974).

### **3. Perceived Severity**

The second factor is perceived severity, which refers to an individual's opinion regarding the seriousness of a disease they have (Tarkang & Zotor, 2015). Perceived severity is one of the factors linked to safe sexual behavior among MSM (Huang et al., 2020; Stephenson et al., 2015; Suryani, A. I., & San Sao, 2021;

Zucoloto et al., 2023). When individuals understand the consequences of having HIV and are aware that it is a chronic and incurable disease, they become more aware of the need to practice safe sexual behavior, such as using condoms and seeking available VCT services. For MSM, HIV significantly impacts their daily lives and this is also influenced by their level of education and environment (Inriyana et al., 2021). High perceived severity of HIV means high self-protective behavior. Conversely, low perceived severity means self-protective behavior (Rosenstock, 1974).

#### **4. Perceived Barriers**

The third factor is perceived barriers. Perceived barriers refer to the challenges individuals face when trying to engage in healthy behaviors (Tarkang & Zotor, 2015). This is one of the factors that affect safe sexual behavior among MSM (Abebe & Mitikie, 2009; Darmawansyah et al., 2014; Huang et al., 2020; Marcus et al., 2016; Suryani, A. I., & San Sao, 2021; Zucoloto et al., 2023). Perceived barriers can influence an individual's health behavior. Whether they are internal barriers such as education and age, or external barriers like lack of support from partners or peers, or limited access to health services, these barriers can prevent MSM from practicing safe sexual behaviors. These behaviors include using condoms and Voluntary Counseling and Testing (VCT) services (Chandra, Putri Ade, Zahroh Shaluhiah, 2018). Perceived barriers can hinder the adoption of recommended behaviors. The more significant the perceived barriers, the more they can prevent individuals from adopting certain behaviors (Rosenstock, 1974).

#### **5. Perceived Benefits**

The fourth factor is perceived benefits. Perceived benefits refer to an individual's opinion or view regarding the advantages acquired by engaging in a particular health behavior (Janz & Becker, 1984). Perceived benefits are associated with safe sexual behavior among MSM (Abebe & Mitikie, 2009; Darmawansyah et al., 2014) Zhang et al., 2023; The perceived benefits of using condoms and VCT can help MSM maintain safe sexual behavior to prevent other sexually transmitted infections. When MSM understand the advantages of using condoms during anal intercourse, particularly in reducing the risk of HIV, AIDS, and other STIs, they are more likely to use condoms (Huang et al., 2020).

MSM with a strong perception of the benefits are 2.66 times more likely to use VCT than those with a weak perception. For most MSM, participating in VCT helps them monitor their health condition, especially for those who are HIV-positive (Agri, 2021). If someone perceives an activity as beneficial or advantageous, they are more likely to incorporate it into their lives. Conversely, if they feel something offers no benefit or advantage, they are unlikely to adopt it (Rosenstock, 1974). Things considered beneficial will motivate individuals to take action to obtain those benefits (Notoatmodjo, 2007).

#### **6. Cues To Action**

Cues to action are the reasons that encourage individuals to engage in health behaviors (Conner & Norman, 2015). Cues to action are associated with safe sexual behavior among MSM, both in terms of condom use and VCT use (Darmawansyah et al., 2014; Huang et al., 2020; Jiang et al., 2019; Suryani, A. I., & San Sao, 2021). When MSM receive information about condoms and lubricants from friends, partners, or close relatives, regarding both their benefits and the correct way to use them, they are encouraged to use condoms and lubricants consistently during sex (Chandra, Putri Ade, Zahroh Shaluhiah, 2018).

When MSM have low education levels, even if they receive external support, they may not have a strong understanding and may not be motivated to utilize VCT services. Similarly, MSM with low cues to action may use VCT services due to factors such as accessibility to nearby health services, high education levels, and having had exposure to individuals at high risk of HIV and AIDS. Even if MSM lack strong support, living near health services, having a high level of understanding, and having had exposure to individuals at high risk of HIV and AIDS make them more likely to use VCT services (Prawesti, 2018). In the Health Belief Model theory, the reasons or motivations for engaging in health behaviors stem from events or individual experiences that lead to behavior change (Rosenstock, 1974).

## **7. Self Efficacy**

Self-efficacy is an individual's belief in their ability to perform a health behavior (Tarkang & Zotor, 2015). Self-efficacy is a factor associated with safe sexual behavior, namely condom use and VCT use, among MSM (Huang et al., 2020) (Morell-Mengual et al., 2021). When MSM have self-efficacy regarding condom use, they are more likely to use condoms consistently, be able to obtain condoms (for example, by having the courage to buy them at health stores), and have the courage to persuade their partners to use condoms (Huang et al., 2020). Similarly, when MSM are confident in their ability to undergo VCT, they are more likely to use VCT services and encourage their partners to do the same, disregarding the stigma prevalent in their environment (Nugroho & Kusumaningrum, 2018). The higher the self-efficacy in using condoms and participating in VCT, the better the condom and VCT service use behaviors (Rosenstock, 1974).

## **8. Knowledge**

Knowledge plays a vital role in shaping our actions and behaviors. When new behavior or behavior adoption is based on knowledge, it tends to be more lasting. In contrast, behavior not based on knowledge is less likely to last long (Notoatmodjo, 2003). Knowledge is essential concerning safe sexual behavior, such as the use of condom and VCT among MSM (Darmawansyah et al., 2014; Jiang et al., 2019; Sharma et al., 2018; Stephenson et al., 2015; Suryani, A. I., & San Sao, 2021; Zucoloto et al., 2023). MSM with good knowledge about condoms and lubricants tend to use them consistently, 2.379 times more than those with less knowledge about these items. In-depth knowledge about the benefits of VCT also

influences MSM to undergo VCT (Lestari et al., 2015). Therefore, having better knowledge about HIV/AIDS leads individuals to consistently use condoms during sexual activity (Notoatmodjo, 2003).

## **9. Values**

Values are tangible things considered good or bad, beautiful or ugly, right or wrong. Kimball Young defines values as abstract and often unconscious assumptions about what is considered significant in society. Social interaction refers to how individuals engage with each other (Notoatmodjo, 2012). Culture encompasses the entirety of understanding, values, norms, knowledge, religion, and intellectual and artistic expressions that define a society (Eppink, 2013). Values are one of the factors associated with sexual behavior in MSM (Wang et al., 2018).

Socially legitimized norms regarding condom use serve as general guidelines for individual behavior and attitudes based on societal expectations. These become stronger when individuals comply with them. Individual adherence to condom norms is crucial in determining whether a norm will be followed or not (Agustang et al., 2019).

The stigma against people with HIV/AIDS is due to the lack of social and cultural influence in society. MSM experience stigma, leading to their reluctance to use VCT services since society perceives individuals with HIV/AIDS are engaged in immoral behavior and violating social and religious norms. The role of healthcare workers and NGOs in promoting the importance of VCT has a more positive influence on high-risk groups, encouraging them to continue utilizing VCT services despite the stigma they may encounter (Asrifuddin et al., 2020).

## **CONCLUSION**

Based on the results of the literature review and discussion regarding individual perception factors, which consist of perceived susceptibility, perceived severity, perceived barriers, perceived benefits, cues to action, self-efficacy, knowledge, and norms, it can be concluded that these factors are associated with safe sexual behavior, namely condom use and VCT use among MSM. Safe sexual behavior in MSM depends on their perception of HIV/AIDS, safe sexual behavior, and the environment that shapes their personality. A high level of individual perception leads to better sexual behavior. Strong environmental support for MSM, whether from partners or community peers, also contributes to improved sexual behavior.

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