

# Knowledge and Perception of Reproductive Health Among Men who have Sex with Men

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**Abstract—** The Men Who Have Sex with Men (MSM) lives in irrational stigma of sexual behavior where the community does not have a complete knowledge about MSM sexual behavior. This study aimed to describe MSM's sexual behavior, knowledge, and perception of reproduction health. This study was designed as systematic review among studies from 2015-2018. This study revealed that there growing trends concerning unprotected anal sex and unprotected anal sex with an HIV-discordant partner, exacerbated by a decreasing trend of medication compliance among MSM with HIV. Although MSM has a good level of knowledge, they have a low level of discipline in applying their knowledge about safety sex and medications compliance. This implies that actions are needed to raise awareness about reproductive health and safer sex among MSM, along with awareness for medication compliance among MSM with HIV .

**Keywords—**MSM; sexual behavior; knowledge;compliance.

## I. INTRODUCTION

Health is one of the indicators to categorize the level of welfare of a society or nation. Healthy paradigm nowadays that is promoted requires a change in the perception of the community from treating disease to maintaining or also increasing health to wellness. It means that it does not only reaching out for curing diseases but also understanding the pathomechanism of disease and how to prevent it. It needs to be disseminated to the public [1].

One of the major health problems at the end of the 20th century is the emergence of infections caused by a sexually transmitted virus, namely Human Immunodeficiency Virus (HIV), which can lead the infected patient to have Acquired Immunodeficiency Syndrome (AIDS) [2]. In 2003, WHO estimated that 37.8 million people were infected with HIV and AIDS (UNAIDS. AIDS Epidemic Update: 2003). At the end of 2005, the estimation reached 53.6 million, and in 2007 there were 33 million people infected, but those who had died were 23 million [3].

The documentation of HIV/AIDS cases in the world has been reported. Data of 2017 stated that there were 36.7 million people in the world living with HIV/AIDS [3]. Based on the results of the mathematical modeling of AIDS Epidemic Modeling (AEM), it is estimated that in 2012, there were 591,823 people living with HIV/AIDS (PLWHA) in Indonesia. The highest number of PLWHA is in Jakarta, Java, and Papua [4]. The number of HIV infections reported to the Ministry of Health of Republic Indonesia in 2012 reached 21,511 adults. Whereas in 2013, the number of new HIV infections reported to the Ministry of Health reached 29,037 people. This increase in numbers is a result of the addition of a large number of HIV testing services, in 2013 compared to previous years. Estimation of HIV prevalence in the general population throughout Indonesia were 0.4% in 2012, while in Papua was 2.3%. The following is a map of the HIV epidemic in adult populations in each province, where prevalence ranges from 0.1% to 3.5% The reported cases of HIV/AIDS in 2016 reached 13,774 people. This case has moved dramatically in 2017 which recorded 17,090 HIV/AIDS cases [4].

Cases of HIV/AIDS in Indonesia have been steadily increasing, placing Indonesia as the country with the fastest spread of HIV and AIDS in Asia (as shown on data that the past ten years). The number of AIDS patients has continued to increase. Cumulatively, people with HIV infection and AIDS cases from 1987 to March 2014 consist of 134,042 people with HIV infection and 54,231 AIDS cases that caused 9.615 people died. This increase is very prominent in the age group of 20-29 years. There were 8,187 people in 2008, while in March 2014 there were 17,941 people. In addition, the number of HIV and AIDS recorded among homosexuals also increased, namely 609 cases in 2008. It increased to 1,291 people in March 2014 [5].

Bali is the province where HIV/AIDS cases were first diagnosed in Indonesia. The prevalence of HIV/AIDS in Bali until 2017 was relatively high (compared to other regions in

Indonesia). This is indicated by data that Bali is included in the top five of HIV/AIDS regions in Indonesia after Papua, East Java, DKI Jakarta, and West Java [5]. The incident of HIV/AIDS cases in Bali is seen as a case caused by various factors. One of the factors is that Bali as an icon of Indonesian tourism.

The island of Bali, which is known as God's Island is a famous tourist destination. It has made Bali as a certainty of national and international tourist destinations. In addition to tourism foreign exchange guests, another thing that proceeds towards Bali was a change in behavior including the sexual behavior of the community. The tourists use their financial influences for the tourism destination community and some communities serve some commodities that are acceptable for tourist's needs. One of the biological needs is sexual need. Balinese people should be aware of the negative effects of that paradigm as a high risk of sexually transmitted diseases [6]. With this, comes the paradigm of men having sex with other men (MSM).

Although laymen man perceives this sex orientation as abnormality brought by the tourists coming to Bali, a more objective viewpoint needs to be applied when considering the source of this paradigm. However, what is more crucial than trying to point fingers at who would be attributed as the bad influence, is the understanding of sexual behaviors of MSM, especially considering their knowledge and perception about their reproduction health. This was the concern of the present paper, which was aimed at exploring the knowledge and perception among MSM across different countries.

## II. METHOD

This study was conducted as a systematic review and meta-analyses. Between July and September 2018, a search was conducted in PubMed, and Google Scholar to identify relevant peer-reviewed articles related to knowledge and awareness of reproductive health among MSM in low-and middle-income countries, which could be in the form of research reports both in qualitative and quantitative designs.

## III. RESULTS AND DISCUSSION

Based on the data, around 77% of HIV and AIDS transmission occurs through sex. Sexual relations, both heterosexual and homosexual are the main models of HIV transmission [7]. It is undeniable that sexual behavior is a high-risk group. Homosexual communities contribute significantly to HIV and AIDS. HIV transmission through anal sex is reported to have 10 times higher risk compared to that of vaginal sex as according to the American AIDS Research Foundation (AMFAR), homosexual groups were 19 times more likely to contract HIV disease than the general public [8].

Although condoms could become an important prevention tool in America, Australia and Europe also in the South African context, surveillance data that assess knowledge, attitudes, and beliefs about condoms revealed a low awareness and commitment to employ condoms to add protection to their sexual activities. Those who use condoms tend to use them as

mere habit, without a deeper understanding of the benefits offered by the protection. This could pose a collateral danger as lack of awareness about the benefits of wearing condoms can lead to casual exemptions when condoms are not available. Similar case with different cause has been identified in Asia [9, 10, 11, 12, 13, 14, 15, 16,17], where those who wore condoms did so not because they were aware of the benefits the condoms provide in protecting them from sexually transmitted diseases. They did so more because they thought condoms protect them from direct skin-to-skin contact as a form of respect toward the partner or to lessen their guilt in cases where the sexual intercourse was a breach of faithfulness.

MSM in Central Asia, specifically in Almaty, Kazakhstan, have a high HIV prevalence. This is reflected in a study conducted by [9] who investigated the association between HIV and selected risk factors and unprotected anal intercourse (UAI) and selected risk factors. The result also shows that MSM population in Almaty engaged in multiple high-risk sexual behaviors such as having UAI with male partners. The reasons MSM population in Almaty conducted Men-with-men high-risk sexual behaviors were varied. Some chose to have sex with other men because they were single and did not have female partner. Some men exposed themselves to the high-risk sexual intercourse because they had very limited access to lubricant, hence the higher risks for tearing and infections. Other men exposed themselves to high risks sex with other men because they were not aware of the Sexually Transmitted Infection (STIs) symptoms exhibited by their partner(s). Some other men dealt in transactional sex where the male sexual solicitor could be intimidated to omit the protections because of the imbalanced power relations between the clients who would pay and the solicitor who would receive the payment. While another set of men exposed themselves to STDs and STIs through and non-injection drug use. Reference [9] suggested that access to HIV education and prevention interventions is necessary to limit the HIV epidemic among MSM in Kazakhstan.

Reference [10] reported the result of HIV testing among Portuguese MSM involving 5,187 participants who were enrolled in European MSM Survey (EMIS). Among the participants, 72% had been tested for HIV, with 11% of the total participant gave positive result for HIV. The study by [10] revealed that there was a high relevance between the education level of the participant and their willingness to have themselves tested for HIV. Interestingly, most of these men with higher education level and voluntarily had themselves tested were often those who identified themselves as gay/homosexual. However, the same study also revealed there was a reluctance to do HIV tests among MSM who had sex with unknown partner or with discordant HIV status partner in the previous 12 months. Reference [10] concluded that improvement on testing uptake and counseling could be an effective alternative to raise awareness about STDs and reproduction health. They also suggested that the treatment coverage for HIV positive MSM should be increased, while identification of undetectable viral load and its containment

should also be amplified. Furthermore, reference [10] insists that actual intervention of HIV/AIDS infection can be focused on efforts to raise awareness for consistent condom.

Reference [11] studied community collectivization in Andhra Pradesh, India with participants who followed several years of HIV prevention. The participants consisted of 3,557 female sex workers (FSWs) and 2,399 high-risk men who have sex with men and transgender (HR-MSM). The connection was drawn between the community collectivization with two outcome indicators, namely the use of condom with different partners and the effort to seek treatment from government health facilities for Sexually Transmitted Infection (STI) [11]. They found that there was a high correlation between collectivization among HR-MSM, participation in public event and collective efficacy with the use of condoms with paying partners. These indicators of collectivization deliberately display positive association of the FSWs' and HR-MSM's awareness and self-efficacy for condom use and the utilization of services provided government health facilities regarding STIs. It was then suggested that improving the effectiveness and sustainability of HIV prevention can be conducted through the association of high levels collectivization of consistent condom use (CCU), utilization of government health facilities for STI treatment, the ability in negotiating condom use among sex workers,

In the same year, reference [12] studied associated factors of CCU with regular, paying, and casual male partners among MSM. This research was composed from the findings from an assessment of a large-scale HIV prevention program. This research was motivated by the marginalization faced by MSM who are at high risk for HIV infection in Tamil Nadu, India. It was argued that there was an urgent need for effective information on HIV prevention. Therefore, the researchers conducted a large-scale behavioral survey involving 1,618 MSM. The participants were selected through time-location cluster sampling at cruising sites in four districts of Tamil Nadu. The analysis was conducted through binary logistic regression to assess the association between CCU with certain social and demographic characteristics. The study found that there was an increase in consistent use of condoms among MSM who had sex with regular partners, paying partners or casual male partners. This increase was associated with 4 factors namely frequent receptive anal sex with regular partners, confidence interval, fewer number of casual partners, and membership in MSM community. Meanwhile, for MSM with regular partners, CCU was associated with membership in MSM community. In addition, there was a strong correlation between CCU among MSM with paying and casual male partners was associated with significantly higher risk of being infected by HIV. Thus, they were also associated with higher exposure to HIV prevention intervention. Furthermore, the researcher found that inconsistent condom use across partner types was associated with age, with MSM older than 26 having higher inconsistency, the presence of debt, and substance abuse, especially alcohol. The findings imply the needs to promote CCU within all types and across all age group in HIV interventions. The researcher also

highlights the importance of promoting social acceptance of same-sex sexuality and addressing contextual barriers to condom use besides the importance of undertaking structural intervention [12].

The urgency for effective intervention strategies is also highlighted by [13]. The HIV epidemic among MSM and men who have UAI in China led to the study to examine the trend of UAI and to explore the factors correlated with UAI among MSM in Guangzhou, China. The researchers collected data from demographic that had HIV related sexual behavior with men and women related to their access to HIV prevention services when symptoms of sexually transmitted infections were also inspected. The result revealed that engagement in UAI among the MSM during the study period was consistently high. Therefore, they highly recommend the campaign to raise awareness about HIV preventions through risk reduction counseling combined with testing services to bring down the risk behaviors of the MSM in Guangzhou, in order to control HIV/STIs epidemic among MSM [13].

Meanwhile, [14] conducted a research about HIV test that was administered to get insight about MSM's HIV tests to raise an awareness to their HIV status. They identified the determining factors of never having tested for HIV among MSM in the Netherlands which are the outsider of Amsterdam, having low education, and limited knowledge of HIV-testing. MSM committing to fewer partners and avoiding anal intercourse also never take HIV-testing meaning that MSM committing lower sexual risks were more likely to have not tested for HIV. Reference [14] suggested that the awareness to do HIV-testing for MSM should be raised by building a community among MSM with role models and social support. This community acted as social ties that should inspire MSM especially the young one or the individualistic MSM where they can share knowledge and encourage HIV-testing.

Taking into account the high-risk sexual behaviors among MSM and the limited health service provided for MSM, [15] assessed the consistence of condom use in China, focusing on male migrants conducting sex with other men. Migrants usually had less privileged financial supports and thus migrant MSM have even higher risks. Therefore, [15] suggested consistent condom use as one of the options to prevent the HIV infection. Reference [15] applied an IMB (informational-motivational-behavioral) model to examine the factors of consistent condom use among the migrant MSM. They also explored the association between the three constituents of the model. They found that among the migrant MSM in Shanghai, they have low prevalence for consistent condom use. The applied model had become a good predictor for consistent condom use. In addition, this study implies that emphasis on motivation and behavioral skills among the population should accompany the intervention strategies for safer sexual behavior.

Reference [16] reviewed the HIV care continuum among MSM in China taken from the literature on progress towards UNAIDS 90-90-90. Their first finding is related to HIV testing and HIV prevention. It was revealed that Chinese

MSM had lower rates of HIV because they feared the stigma and discrimination stemmed from such action of stigma and discrimination. This fear was made worse because they were also revealed as having low self-perception about the risks of HIV. Besides, they admitted that they did not have much trust in the confidentiality in doing such test. The study also revealed that China had established HIV test facility that was completely free of charge, provided by the Chinese Centers for Disease Control and Prevention (CDC). The CDC collaborated with hospitals and community-based organizations (CBOs) to facilitate more comprehensive HIV testing services for MSM, with a HIVST feature that allow a person to perform their own HIV testing which could be an alternative for confidentiality while speeding up the process, provided by the convenience and ease of access of the test. Reference [16] also summarized the HIV prevention in China using multidimensional prevention strategies, namely peer education, community services, and condom promotion. In term of condom promotion interventions, it was associated with individual characteristics such as age, educational background, psychosocial problems, and earlier sexual experience. Partner-level characteristics such as partner types and partner numbers were also associated with condom use. In term of HIV treatment, China was proven to have improved continuously over the past three decades. The improvements were in form of linkage to care, and retention in care, with sociocultural determinants of healthcare engagement influenced the improvement of linkage, and retention in HIV care.

Another research was conducted by [17] to study the efficacy of online HIV prevention in China. This study was motivated by the high risk of Internet-facilitated sexual behaviors due to the increase of internet use among MSM. Eleven hundred participants were involved in the study with the following characteristics: age between 21 to 30 years old, had a college degree or higher, single, and self-identified as homosexual. The researchers divided the participants into two groups, where one group received online HIV intervention services. After 3 months, the estimated risk difference of unprotected sex with a male between groups was 9.3% (95% confidence interval (CI): 1.1, 17.5%). The researchers concluded that online HIV prevention holds the potential to be a promising approach to circulate HIV prevention among MSM. In addition to that, the MSM found that online intervention is appealing compared to other HIV prevention strategies [11].

At the global level, based on the relevant studies, it shows that there is no official data on the number of Men who have Sex with Men (MSM) in the world. However, it is estimated that an average of 1-3% of the adult population aged 15-59 years practice fellow MSM. At the regional level, the prevalence of HIV in MSM also varies. In Africa, the range is between 15-42%. In the United States HIV prevalence among MSM in 2008 reached 19%. In Asia, the rate of HIV prevalence among men who have sex with men has reached 18% [18].

Based on data from *Komisi Penanggulangan AIDS Nasional*, in 2015, there were 766,390 MSM estimated in Indonesia. The data from *Surveilans Terpadu Biologis dan Perilaku (STBP)* shows an increase in HIV prevalence in significant MSM. In 2007 and 2011, HIV prevalence in MSM raised from 5.3% to 12%, and in 2009 and 2013 raised from 7% to 12.8%. This situation is very likely related to the low consistency of condom use during the last anal sex significantly from 27.5% to 16.2% in transgender.

There is no exact statistical data about the number of surveys in Indonesia. The national estimation shows that there were 81,338 MSM and 10,027 MSM with AIDS (called *ODHA*). 15% percent of them lived with HIV (Kemenkes, 2014). The Kinsey statistics in 1,948 showed that 37 percent of men have experienced unsafe sexual intercourse at puberty and 4-6 percent lived in exclusive sexualities. Global males age 15- 49 years have had sex with men regularly, and nearly 15 percent of them have lived together as homosexual partners [19].

Reference [20, 21] found a higher risk of HIV infection among MSM and *waria* transgender. Reference [20] reported that the risk in MSM was resulted from having anal intercourse which might lead to the injury of the end part of the digestive system which has increased the transmission of HIV. Seventy three percent MSM have anal sex once a week in the past year, and 10 percent have female sex partners or called Bisexuals [20]. The behavior of buying sex in the past year is often done by a female sex worker. As much as 26 percent of *waria* transgender and 19 percent and MSM were categorized as high risk MSM and low risk (19 percent and 6 percent) [21].

Other data viewed from sex selling behavior, there were 19% of Intravenous Drug Users (IDUs) and 81 percent of transvestites sell sex to men. Among 49 percent of MSM who sell sex, 79 percent of them sell sex only to men, while 4 percent to women only, while 17 percent sell it to men and women. Anal sex behavior in the MSM group was mostly done without using condoms [22].

Similar case with a different cause has been identified in America [23, 24]. Reference [23] investigated HIV testing behavior and predictors of HIV testing among MSM who lived at the outside of the major urban centers in Canada. The researcher surveyed 153 MSM to assess HIV testing behavior and the psychosocial factors that may impact their attitude to HIV testing through anonymous online survey. Psychologically, 4 factors were identified to have affected MSM's attitude toward HIV testing, namely the internalized attitude of homophobia, openness to healthcare providers (HCPs) of same-sex attraction, and gay community involvement. The survey revealed that 24% of the surveyed MSM admitted that they had never been tested and over 35% of them admitted that they did not want to be frank about their same-sex preference to their HCPs. The survey also revealed a high correlation between internalized homophobia among MSM, their refusal to have themselves tested for HIV and their willingness to disclose their same-sex preference to their HCPs. Furthermore, there was a low association between

MSM's informal involvement in the gay community and their willingness to take HIV testing.

Reference [24] investigated the factors behind inconsistent condom use among MSM in New York City. However, this research was focused on behaviors of known HIV-positive partners among newly diagnosed HIV-positive MSM. There were 95 MSM interviewed mostly with the age above 30 years old and having education higher than high school education. The interview resulted in 53% participants reporting the use of drug or alcohol during their last intercourse with their last known HIV-positive partner. Meanwhile, inconsistent condom use with last known HIV-positive partner was reported by 65%. Individuals reporting more than one known HIV-positive partners had higher inconsistent condom use than those with one partner. Furthermore, they reported they did the intercourse due to love/ emotional attachment. Apparently, this factor became the significant predictor of inconsistent condom use. As a sum up, intervention is urgent for MSM in serodiscordant partnerships due to their engagement in high-risk behaviors.

#### IV. CONCLUSION

The perspective of men who have sex with men (MSM) observed in several studies about the reproduction health can be grouped into the existence of the MSM, the sexual transaction system, sexual behaviors and participation in regular reproduction health checkup and consistency in safe sexual behaviors.

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