

## ORIGINAL ARTICLE

# Relation Between Sexual Age and HIV Incidence Among Men Who Have Sex With Men

Feny Wartisa<sup>1</sup>, Neila Sulung<sup>2</sup>, Aldo Yuliano Mas Putra<sup>3</sup>, Sandeep Poddar<sup>4</sup>, Amiya Bhaumik<sup>4</sup>

<sup>1</sup> Department of Midwifery, Faculty of Health Science, Universitas Perintis Indonesia, Indonesia

<sup>2</sup> Department of Public Health, Faculty of Health, Universitas Fort De Kock Bukittinggi, Indonesia

<sup>3</sup> Department of Nursing Professionals, Faculty of Health Science, Universitas Perintis Indonesia, Indonesia

<sup>4</sup> Lincoln University College, Wisma Lincoln, No. 12-18, SS6/12, Off Jalan Perbandaran, 47301 Petaling Jaya, Selangor D. E. Malaysia

## ABSTRACT

**Introduction:** Men who have sex with men (MSM) is counted for almost 17% of new HIV infections where injecting drug users are estimated to account for new HIV infections by 12%. New HIV cases in the city of Bukittinggi in 2019 were 62 people with risk factors for MSM as much as 37.1%. This study aims to determine the risk factors (age at first sexual intercourse, sexual activity, Injection drug use, lifetime number of sexual partners and migration) of HIV incidence in Bukittinggi city. **Methods:** This is an analytical study on the case control approach involving 456 individuals with 60 people as a research sample with a ratio of 1: 2, namely 20 cases and 40 control groups. Snowball sampling, questionnaires were mediated as data accumulation and then was analyzed by Chi-squared test. **Results:** The research results verified that early sexual age ( $p=0.005$ ) indicated HIV incidence. On the other hand, sexual activity, Injection drug use (IDU), number of sexual lifetime partner have no significant relation to HIV incidents. People should avoid the high-risk sexual activity such as receptive (recipient) and insertive (giver) without a condom, inconsistency in using condoms and avoid large number of partners. **Conclusion:** From the above study it can be concluded that there was a relationship between the age at first sexual intercourse with incidence of HIV in MSM and no relationship between sexual activity, IDU, number of lifetime partners and migration with the incidence of HIV among MSM in Bukittinggi city. So, in case of MSM cases, individuals must do an HIV test at least once a year.

**Keywords:** Early sexual age, Sexual activity, MSM, HIV, IDU

## Corresponding Author:

Feny Wartisa, M.KM

Email: fwartisa@gmail.com

Tel: +6285364658282

## INTRODUCTION

HIV / AIDS is still a major public health problem in the world. It is estimated that 1.7 million people worldwide will be infected with HIV in 2019 (1). Around 38 million people worldwide are living with HIV / AIDS by the end of 2019 (1). Men who have sex with men (MSM) are at high risk of contracting HIV / AIDS (2). MSM accounts for 23% of new HIV infections in the world, and accounts for more than 40% of new HIV infections in Asia Pacific. The percentage of HIV cases in Indonesia, reported according to the risk factors for MSM has increased from 20% in 2019 to 26.2% in 2020 (3). In Indonesia, the MSM risk group ranked second in the percentage of HIV positive people who tested HIV. This also increased from the previous year, which as it was third rank of those who did HIV testing (4).

The prevalence of HIV in MSM in Indonesia in 2016 was

13,063 cases, and decreased to 11,630 cases in 2017 and 9,522 cases in 2018 and increased to 9,856 cases in 2019 (5). Meanwhile, the prevalence of HIV in West Sumatra in 2018 was 624 cases and decreased to 541 cases in 2019 with a risk factor for MSM as many as 101 cases. City of Bukittinggi had the highest percentage of HIV positive incidents (15.8%) based on the comparison of HIV positive incidence with the number of MSM population (5).

The risk factor for HIV / AIDS in MSM is sexual activity (6). Some of the sexual activities of MSM with their partners include having anal sex with inconsistent use of condoms (7), having sexual intercourse with online partners (8) and commercial sex workers with male clients (9) are main cause of HIV/AIDS. According to a study by Koblin, et al on risk factors for HIV incidence in MSM are some risky behaviors such as unprotected anal sex, changing partners, consuming alcohol and drugs before sex (10).

The risk factor affecting the incidence of HIV is having sexual intercourse at a young age (11). In young age the anatomical and physiological conditions of the body

are susceptible to HIV infection, because there is a wound on the genitals. HIV infection at a young age is associated with syphilis infection (12). In addition, age at first sexual intercourse  $\leq 16$  years of age for MSM is a risk factor for HIV incidence (13). Injecting drug use is also a risk factor for HIV incidence in MSM. About 12.5% of the case group and 8.3% of the control group used injecting drugs where 60% of MSM shared needles which also increased the incidence of HIV in MSM (13). Migration is another cause of HIV infection of MSM (14).

Bukittinggi's AIDS/ HIV Prevention Commission data, in 2019 shows that there were 62 cases with 37.1% of the risk factors for MSM (15). Several studies on MSM and HIV have been conducted in the city of Bukittinggi, including factors causing MSM behavior, voluntary counseling and testing (VCT) on MSM and behavioral factors related to the use of VCT. But research have not been done on the relationship between sexual activity, age at first sexual intercourse and IDU with the incidence of HIV incidence. Moreover, as far as it is known this research was never been conducted in the City of Bukittinggi. So, this study is intended to determine the relation of the age with first sexual intercourse, sexual activity, IDU, lifetime number of sexual partners and migration with the HIV incidence.

## MATERIALS AND METHODS

This study used a case control approach. This research was conducted in the city of Bukittinggi. The population of this study was all 456 MSM people. Based on the sample formula, a total sample size of 20 people was obtained, with a ratio of 1: 2 between the case group

and the control group, so that the total number of respondents was 60 people, consisting of 20 case groups and 40 control groups. The case group consisted of male with HIV positive, while the control group consisted of male individuals who were not diagnosed as HIV negative in the city of Bukittinggi.

The variables of this study were age at first sexual intercourse, sexual activity, IDU, lifetime number of sexual partners, migration and HIV incidence. Each variable is measured based on questionnaires and respondent's medical records. Data were analyzed using Chi-squared test with p value  $< 0.05$ .

The present study is ethically approved by Health Research Ethical Committee of STIKES Perintis Padang, Indonesia Ref No. 03/KEPK.F1/ETIK/2020 dated 24th February 2020.

## RESULTS

Table I shows the relationship between age at first sexual intercourse, sexual activity and IDU with the incidence of HIV among MSM in the city of Bukittinggi. From the result it was found that the respondents age at the time having first sex, are at high-risk sexual intercourse which was greater in the case group (65%) than in the control group (27.5%). The results of statistical analysis showed that there was a relationship between the age at first sexual intercourse of the respondents and the incidence of HIV in MSM ( $p = 0.012$ ) and an OR value of 4.896. In terms of sexual activity, the proportion of respondents who had high-risk sexual activity was greater in the control group (85%) than in the case

**Table I .The Relationship between Age for First Time Having Sexual Relations, Sexual Activity and IDU with HIV incidence among MSM in Bukittinggi City**

Risk Factors	HIV Incidence n=60				Total		OR 95% CI	p value
	HIV (+) n=20		HIV (-) n=40					
	f	%	f	%	f	%		
Age at onset of sexual activity								
≤16	13	21.7	11	18.3	24	40	4.896	0.005
>16	7	11.7	29	48.3	36	60	1.548-15.486	
Sexual activity								
High Risk	14	23.3	34	56.7	48	80	0.412	0.189
Low Risk	6	10.0	6	10	12	20	0.113-1.498	
IDU ( <i>Injecting Drugs Users</i> )								
Yes	1	1.7	2	3.3	3	5	1.000	1.000
No	19	31.7	38	63.3	57	95	0.085-11.738	
Number lifetime partnert sexual								
≤ 10	14	23.3	19	31.7	33	55	2.789	0.099
>10	6	10.0	21	35.0	27	45	0.825-8.064	
Migration								
Yes	10	16.7	28	46.7	38	63.3	0.429	0.130
No	10	16.7	12	20.0	22	36.7	0.142-1.279	

group (70%). The results of statistical analysis showed that there was no relationship between the respondent's sexual activity and the incidence of HIV in MSM ( $p = 0.189$ ) and the OR value was 0.412. Meanwhile, the proportion of respondents who did IDU was the same between the case group and the control group (5%). The results of statistical analysis showed that there was no relationship between IDU (Injecting Drugs Users) and the incidence of HIV in MSM ( $p = 1.000$ ) and the OR value of 1.000. The proportion of respondents who had partners >10 was more in the control group (35%) than the case group (25%). Statistical analysis showed that there was no relationship between the number of lifetime partners with HIV incidence ( $p = 0.099$ ) and an OR value of 2.789. The proportion of migration in the control group (46.7%) was higher than the case group (16.7%). There was no relationship between migration and HIV incidence in MSM ( $p = 0.130$ ) OR (0.429).

## DISCUSSION

Sexual intercourse at a young age is one of the risk factors of HIV / AIDS (11). At a young age, the anatomical and physiological conditions of the body are more susceptible to HIV, because there are wounds on the genitals which make it easier for the HIV virus to infect. Young men are more likely to have risky sexual intercourse than women (16).

Age at first sexual intercourse like  $\leq 16$  years in MSM is a risk factor for HIV incidence (13). Young people who have older sexual partners have a greater risk of acquiring HIV (17). About 9.6% of MSM had anal sex with their partner at 15 years of age and 83.1% at 25 years of age (18). Several studies reported that MSM anal sex happen in the last 6 months of university entry (19). Many respondents involve in sexual intercourse at a young agesince from childhood they prefer to play with women or girls. Moreover, there are also causes like a history of sexual violence from family (siblings), closest people, teachers or neighbors.

The influence of peers is also a factor in respondents having sexual intercourse at a young age because of their curiosity and desire to experiment, resulting in addiction and a need for respondents who continue to seek other partners. The role of social media on homosexual individuals such as wechat, blued, hornet, grindr (applications that are often used by respondents are blued, grindr by MSM) are also very influential because with these applications respondents can interact with other MSM which leads to meetings and engaging in high-risk sexual activity leading to high risk of contracting sexually transmitted diseases, especially HIV / AIDS. Age, income and employment are factors that influence the incidence of HIV in MSM because MSM who do not work and have low income are more likely to engage in high risk sexual activity for the sake of get paid (20).

Sexual intercourse through anal (anal intercourse), which is mostly done by MSM, is most high risk factor of transmitting HIV / AIDS. This is because the anus is not designed for sexual intercourse, so it is injured during anal sex and makes it easier for HIV to enter the body (21). There was no relationship between sexual activity (recetive anal sex without using condom and insertive anal sex without a condom) and the incidence of HIV in MSM (22). Male sex workers are at high risk of contracting HIV infection (26.3% vs. 12.2%;  $p = 0.007$ ). The percentage of MSM who engaged in high-risk sexual activity was less than low-risk sexual activity (23). MSM use condoms during sexual intercourse with new people and if they know each other then they do not use condoms(6). Men sex worker from Los Angeles have high-risk of HIV/AIDS during sexual intercourse due to unprotected anal sex (24).

In addition, the main reason for the re-emergence of the disease in MSM people are come-back of risky sexual behaviors, triggered by wider social and cultural changes, greater social acceptance for gay men and, somehow unpredictably, the introduction of more efficient drugs. Changing partners is a common thing in this community, so that they are at high risk of contracting HIV (25).

The sharing of needles and syringes causes high risk of transfer of blood-borne physical diseases including HIV. Intravenous injection used interchangeably in case of IDU may unconsciously introduced the virus into the blood (26). In addition, drug use also affects sexual behavior, which cause more risk for venereal disease (27). MSM who involve in IDUs are at 4.9 times higher risk of becoming HIV seroconversion (OR = 4.9; 95% CI = 1.9-12.3) (28). The risk of exposure to MSM with IDU was 4% (43 MSM) (29). About 62% of HIV positives were caused among MSM, 11% by IDU, 8% from MSM with IDU and 8% by sharing needles (23).

IDU is a risk factor for HIV incidence in MSM (30). Although the results of the study did not show a relationship between IDU and HIV incidence. There were respondents who admitted that at first they only consumed alcoholic drinks and injected drugs but because they were under the influence of alcohol and drugs they were not aware that they had sexual relations with men. In addition, there are some respondents who use illegal drugs such as shabu-shabu which results in fantasy effects of shabu-shabu leading to sexual intercourse with a high risk of contracting HIV.

MSM tend to have multiple partners and be sexually active (31). Another study showed that 45% of MSM had partners >10. About 74 men reported lifelong sex with men, 20 Primary HIV Infection (32). An increase in the number of partners was significantly associated with HIV incidence (33). In another study, it shows that more than half of the respondents have a history of migration, although in our study there was no relationship between

migration and the incidence of MSM. In contrast to other studies, HIV prevalence often increases among MSM, especially among immigrant MSM (34). MSM who migrate have a higher chance of having unprotected sex, have multiple partners and have low knowledge of HIV (35). MSM prefer to migrate to cities with developed economies and open cultures (36). The purpose for migration of MSM is to improve their financial condition (14).

Apart from that, when people migrate to European countries then they become acquainted with such sexual activities and also engage in MSM. Peers here are very influential on a person's behavior, such as respondents who were initially normal and friends with MSM were also affected so that they engage in inappropriate sexual activity which results in addiction and ultimately impacts HIV / AIDS incidence among them.

## CONCLUSION

There was a relationship between the age at first sexual intercourse and the incidence of HIV in MSM. There is no relationship between sexual activity, IDU, number partners in lifetime and effect of migration with the incidence of HIV among MSM in Bukittinggi. Respondents are expected to avoid high-risk sexual activity such as receptive (recipient) and insertive (giver) without a condom, inconsistent use of condoms and getting involved with large number of partners. Moreover, respondents must perform HIV test at least once a year.

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