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RISK FACTORS FOR MEN WHO HAVE SEX WITH MEN AND HIV INCIDENCE IN BUKITTINGGI CITY INDONESIA

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ABSTRACT

Men Who Have Sex with Men (MSM) generally cause new HIV infections as much as 12% in the world in 2015. In Bukittinggi city the findings of new cases of HIV in 2017 were 74 people and among them 40 MSM had risk factors. The purpose of this study was to determine the risk factors for HIV in MSM in the City of Bukittinggi. The design of this study is analytic with a case control approach. The study was conducted on July 23- August 15, 2018 in the City of Bukittinggi. With a sample size of 60 people with a ratio of 1: 2, namely 20 case groups and 40 control groups and Snow Ball Sampling technique. Data analysis used is both univariate, bivariate analysis. The high-risk factors behind HIV infection happens due to premature age (46.7%), low education level (90%), unemployment (35%), low income (48.3%) and of course marriage (8.3%). There is a relationship between age, work and income with HIV infection in MSM. Age, occupation and income are risk factors for HIV incidence in MSM in the City of Bukittinggi.

Keywords: HIV, MSM, Risk Factor

INTRODUCTION

HIV / AIDS is one of the most significant public health challenges in the world, especially in under developed countries (WHO, 2017). HIV is a virus that causes Acquired Immune Deficiency Syndrome (AIDS). This virus attacks the immune system. As a result, the body becomes weak to fight against infection and causes a deficiency in immune system. This leads to various diseases and ultimately can cause death (Noviana, 2016).

According to the 2013 Integrated Biology and Behavior Survey (STBP), this infection mainly causes through the sex workers (both direct and indirect), homosexuals, drug users and transgenders.

Men who have sex with other men (MSM) for financial reasons, sexual desire, various other sexual motives have a greater risk of getting infected with HIV compared to men who have sex with women.

In 2015 MSM has caused 12% new HIV infection in the world. Meanwhile the prevalence of HIV/AIDS in MSM in Asian countries like China, India, Taiwan and Nepal is 3.1%, 16.8%, 8% and 4% respectively. In Southeast Asian countries the prevalence of HIV / AIDS in MSM is quite high compared to countries in ASIA namely Thailand (28%) and Cambodia (14.4%) (UNAIDS Data, 2017).

In Indonesia prevalence of HIV in MSM from 2010 to 2016 continued to increase, and it amounted to 506 cases in 2010, 1,040 cases in 2011, 1,514 cases in 2012, 3,287 cases in 2013, 3,858 cases in 2014, 4,241 in 2015 and in 2016 there were 13,063. While in West Sumatra MSM in 2015 was the largest in Padang City with 861, Solok City with 522 and Bukittinggi City with 432 people.

Risk factors that influence HIV incidence in MSM are age, education, employment, income and marital status. Younger age has a high risk of contracting HIV (0.14% -0.34%) compared to older ages (Scott *et al.*, 2015). Low education has a higher risk of getting HIV. There is a significant relationship between income and HIV incidence in MSM in China with *P* value of 0.001 (Liu *et al.* 2018). More cases of HIV and AIDS are found in respondents who are married (73.7%) and

43% working ones who are especially employees work in private sector (Saktina & Satriyasa, 2017).

Based on a data from KPA Kota Buktitinggi in 2016, there were 73 new cases of HIV with 36 risk factors for MSM. While in 2017 there were 74 new HIV cases with the highest risk factors for MSM, 57.1% is followed by high risk couples of 18.9%, LBT (Lesbian, Bisexual and Transgender) of 14%, IDU (Injecting Drugs User) of 8.1% and male women (transvestites) of 4.1%. Several studies on MSM and HIV have been carried out in the city of Bukittinggi including factors that cause MSM behavior, VCT on MSM and behavioral factors are related to VCT utilization but research on the characteristics of male sex men and HIV events as far as researchers have known that it has not been done in Bukittinggi by other researchers. The purpose of this study was to determine the risk factors for HIV incidence in MSM in the City of Bukittinggi.

METHODOLOGY

This study uses a case control approach. This study was conducted in the City of Bukittinggi on July 23 to August15, 2018. The population of this study was all MSM recorded in the KPA in Bukitinggi City in 2017 amounted to 456 people. The sample size in this study was determined using the following formula.

$$n = \frac{\left\{Z_{1-\alpha/2}\sqrt{[2P_2^*(1-P_2^*)]} + Z_{1-\beta}\sqrt{[P_1^*(1-P_1^*)+P_2^*(1-P_2^*)]}\right\}^2}{(P_1^*-P_2^*)^2}$$

$$P_1^* = \frac{OR}{(OR+1)} \qquad P_2^* = \frac{P_1^*}{OR(1-P_1^*)+P_1^*}$$

Information:

n = Number of Samples

P1 = The proportion of exposure in the case group

P2 = The proportion of exposure in the control group

Zα = Level of significance (for = 0.05 is 1.96)

Zβ = Desired power / power level (0.84)

This study uses a significant level of 95% (α = 0.05) and a test strength of 80% using the OR value = 9.06 *p* value 0.009 based on the results of previous studies (Hartono, 2013). Based on the above sample formula, the number of samples was 20 people, with a ratio of 1: 2 between the case group and the control group, so that the total respondents were 60 people, consisting of 20 case groups and 40 control groups. The case group is male sex men diagnosed with HIV, while the control group is male sex men who are not diagnosed as HIV negative in the city of Bukittinggi. The sampling technique in this study was snowball sampling with Key Informants being Reachers from KPA, Bukittinggi City.

Data was obtained through interviews directly with respondents by using a questionnaire. Respondents were interviewed one by one collected at the cafe from door to door. The variables of this study were age, education level, occupation, income, marital status and HIV incidence. Each variable is measured based on the questionnaire and the respondent's medical records. Age is categorized as high risk <30 years and low risk> 30 years. The education level is divided into high and low education levels, employment is divided into work and does not work, income is categorized as high income if 1 2.1 million (above UMR in Bukittinggi) low if <2.1 million. Marital status is categorized as married and single. Data were analyzed by univariate, bivariate analysis after using Chi-suared test to assess the relationship between independent variables and dependent variables, the association was considered significant if the value was $p < 0.05$.

RESULTS

Table: Characteristic Relationships (Age, Education Level, Occupation, Income and marital status) with HIV Incidence MSM in the City of Bukittinggi

Risk Factor	HIV Incidence				N	%	OR 95% CI	*p* value
	Case		Control					
	n	%	*n*	%				
Age								
High Risk	14	70	14	35	28	46.7	4.333 1.364-13.770	0.022
Low Risk	6	30	26	65	32	53.3		
Total	20	100	40	100	60	100		

Level of Education								
Low	19	95	35	87.5	54	90	2.714 0.295-24.954	0.653
Height	1	5	5	12.5	6	10		
Total	20	100	40	100.0	60	100		
Pek Work								
Not Working	12	60	9	35	21	35	5.167 1.616-16.520	0.010
Works	8	40	31	65	39	65		
Total	20	100	40	100	60	100		
Income								
Low	14	70	15	48.3	29	48.3	3.889 1.230-12.292	0.036
Height	6	30	25	51.7	31	51.7		
Total	20	100	40	100.0	60	100.0		
Marital status								
Marry	3	15	2	5	5	8.3	3.353 0.512-21.938	0.322
Single	17	85	38	95	55	91.7		
Total	20	100	40	100	60	100.0		

Table shows the characteristic relationship with HIV infection in MSM in the city of Bukittinggi. The proportion of respondents who have high risk age is more in the case group (70%) compared to the control group (35%). The results of the statistical analysis showed that there was a relationship between the age of the respondent and the incidence of HIV in MSM (p = 0.022) and the value of OR 4.333. In terms of education level, the proportion of respondents who had a low education level was more in the case group (95%) compared to the control group (87.5%). The results of the statistical analysis showed that there was no relationship between the education level of the respondents and the incidence of HIV in MSM (p= 0.653) and OR=2.714. While for the work the proportion of respondents who did not work more in the case group (60%) compared to the control group (35%). The results of the statistical analysis showed that there was a relationship between the work of the respondent and the incidence of HIV in MSM (p = 0.010) and OR 5.167. In terms of respondents' income, the proportion of respondents who have low income is more in the case group (70%) compared to the control group (48.3%). The results of the statistical analysis showed that there was a relationship between the income of respondents and the incidence of HIV in MSM (p = 0.036) and OR 3.889. The results of the statistical analysis showed no relationship between the marital status of respondents with HIV incidence in MSM (p = 0.322) and OR 3.353 the proportion of respondents who had marital status more cases (15%) compared to the control group (5%).

DISCUSSION

Adult age will have sexual behavior that is different from the age of adolescence (Kamilah & Hastono, 2014). The highest HIV infection was found in young MSM. One reason is that young MSM do not have the ability to negotiate safe sex with their sexual partners compared to adult MSM (Agwu *et al.*, 2011). 40.8% of MSM respondents have ages 18-24 (Thienkrua *et al.*, 2017). Young MSM usually do not have the ability or knowledge in strategies to reduce the risk of transmission to HIV-positive sex partners. Adult MSM are better able to keep themselves uninfected for longer than young MSM. Younger age has a higher risk of contracting HIV/AIDS than older age (Scott *et al.*, 2015). Age is a risk factor for HIV incidence in MSM in Beijing with a p <0.001. According to the results of the research, young people are more easily influenced by the environment such as right to live, work and peers. Sometimes the reason for respondents being MSM is because they are invited by friends and by curiosity to have sexual relations with men because sexual relations with men according to them are safer than women because if they have sex with men they will not get pregnant and people will not be suspicious if men are in the same place.

The level of education is one of the factors that play a role in influencing a person's decision to behave healthy. Someone who is highly educated will be less susceptible to the risk of being infected with HIV and AIDS compared to those who have low education or drop out of school (Annisa & Harahap, 2011). Higher levels of education will make it easier for someone or community to receive information and implement it in daily life, especially in the health sector (Pratiwi 2015). MSM who study less than 12 years are at 2.12 times more likely to experience HIV seroconversion compared to MSM who have studied more than 12 years (AHR = 2.12; 95% CI = 1.12-4.03; $p = 0.02$) (Li *et al.*, 2012). But often higher education does not guarantee someone to apply good behavior. 65% of respondents have low education (Cowan & Haff 2008). 97.7% of respondents have low education (Kamilah & Hastono, 2014). This study is in line with previous studies showing that there was no statistically significant association between the level of education of MSM and the incidence of HIV (IRR = 1.48; 95% CI = 0.72-3.02) (Meireles *et al.*, 2015). In this study the level of education does not always affect a person's health attitudes and behaviors where respondents who are highly educated also become MSM and diagnosed as HIV positive. Peers here are very influential on a person's behavior such as respondents who are initially normal and friends with MSM are also affected so that unnatural sexual activities that result in addiction, become a necessity and ultimately impact HIV / AIDS.

The level of risk of the spread of HIV infection in the community is quite varied depending on each job. The type of work has a role in causing disease (Notoatmodjo, 2012). Communities at risk for the spread of HIV infection are quite diverse such as jobs as laborers, drivers, freelancers and employers are more at risk of being seropositive to HIV than those who do not work (Agarwal et al. 2015). MSM who did not work more in the HIV positive group (29%) than the HIV negative group (24%) (MacKellar *et al.*, 2005). This research is in line with previous research which states that the proportion of unemployed HIV positive groups (43.1%) is more than HIV negative (22%) and there is a relationship between employment status and HIV incidence in MSM ($p = 0.02$) OR = 2.69 (Logie *et al.* 2018). According to the research results, respondents who did not work were more at risk of getting HIV compared to people who worked. Some respondents work as shop employees, substitute employees at salons with mediocre salaries while the necessities of life are quite high, if they open their own jobs such as workshops or open their own salons they have no special skills and do not have the capital to open a business. So that not a few respondents fall into the practice of prostitution to earn a large income and eventually get sexually transmitted diseases, especially HIV.

Income is closely related to work. MSM who work have their own income so they can meet their needs. High economic needs and not in accordance with income can plunge someone into deviant behavior is not likely to become a sex seller. The proportion of HIV events in the case group with less socio-economic respondents (70.4%) was greater than the control group respondents with less socio-economic (56.3%). The results of this study are in line with previous studies showing that there is a relationship between income and HIV incidence in MSM ($p = 0.001$) (Liu *et al.*, 2018).

Marriage is not enough to protect themselves from HIV infection (Gray *et al.* 2004). Married MSM do not show sexual practices towards their wives, whether to avoid homophobia, fear of stigma and discrimination, self-shame or other sexual customs (Solomon *et al.*, 2010). This research is in line with previous research which found that there was no significant difference in HIV prevalence between married MSM compared to unmarried MSM (Setia *et al.* 2010). In contrast to research conducted by Bongaarts found that HIV prevalence was higher in married people (8%) compared to unmarried people (4.7%) (Bongaarts, 2007). People who were once married (widows / widowers) have the highest level of HIV infection (23.7%). Kumta's research in Mumbai states that married MSM are more at risk of being seropositive (Kumta *et al.* 2010). Based on the results of the study, most of the respondents had unmarried status due to their lack of interest in the opposite sex, MSM idolized more mature and protective male figures because men understood men better and some MSM had experienced broken hearts with women so that they prefer men as mates. However, some of them have future hopes to get married at the age of 30 years.

CONCLUSION AND RECOMMENDATION

The results of this study can be concluded that age, occupation and income are risk factors for HIV

incidence in MSM in the city of Bukittinggi. In this case, it is suggested that the Regional Government of the City of Bukittinggi make regional regulations relating to LGBT, especially MSM, and it is expected that the Health Office of the city of Bukittinggi will disseminate information to improve communication, information and education on HIV transmission and prevention not only to individuals and groups but also to the community such as families, schools, community leaders.

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