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Determinants of condom use status among men who have sex with men (MSM) group in 5 Indonesian cities in 2015

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ABSTRACT

Background: Significant increase in HIV cases among men who have sex with men (hereafter MSM) group during the 2015-2016 period confirmed that sexual behavior is a major risk factor in exposure to HIV & AIDS with unprotected sexual intercourse as the dominant risk factor. This study aims to identify the determinants of condom use status among MSM group in 5 cities in Indonesia.

Methods: This study used a cross sectional design, carried out in 5 cities in Indonesia: Jakarta, Bandung, Semarang, Surabaya, and Denpasar using secondary data from the Integrated Biological and Behavioural Survey (IBBS) in 2015.

Results: Variables that are significantly related to the condom use status were marital status, exposure to information on HIV&AIDS, and knowledge about condoms. The marital status variable has a POR value of 1.351 (95% CI OR 0.709 âĂŞ 2.576), whilst exposure to HIV&AIDS information has 1.668 (95% CI OR 1.148 âĂŞ 2.422) POR value, and knowledge about condoms has POR value as much as 1.925 (95% CI OR 1.274 âĂŞ 2.907).

Conclusion: The number of respondents who used condoms consistently for the past one month were 76.1% and those who did not were 23.9%. Variables that are significantly related to the behaviour of not using condoms are marital status, exposure to HIV&AIDS information, and knowledge of condoms.

Keywords: Determinants, Behavior, Condom, MSM, HIV&AIDS

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1. Introduction

The problem of Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) infections has developed significantly and is increasingly alarming in terms of its quantitative aspect, specifically on high incidence of new HIV&AIDS infections. Based on the data obtained from Report On The Global Summary of the AIDS Epidemic 2014 by UNAIDS [1], until the end of 2014 there were 36.9 million people in the world living with HIV and 2 million people were newly infected with HIV. Between 2000 and 2015, new HIV infections had decreased by 35%, and deaths from AIDS had decreased by 24% with the implementation of prevention efforts around the world.

The heterosexual group still being the riskiest group of AIDS infection cases although it has shown a downward trend after 2013, but among the MSM (Men who have Sex with Men) risk group there has been a twofold increase during 2015-2016. In 2014, there were 391 new registered cases. This number increased to 510 cases in 2015. In fact, in 2016, the number of new AIDS cases caused by MSM reached 1,180 cases [2]. HIV infection in MSM groups has increased in major cities in Asia in the last 15 years. In Indonesia, HIV infection in MSM groups also experienced a significant increase which can be seen from the trend of increasing HIV prevalence in the Biological and Behavior Integrated Survey data since 2007. Based on data from the Integrated Biological and Behavior Survey (STBP) in 2007, 2011, and 2015 consecutive MSM groups infected with HIV experienced a significant increase and increase in 2015. HIV prevalence in MSM groups respectively from 2007, 2011 and 2015 was 5.2%, 8.5%, and 25.8% [3, 4, 5].

Significant increase among the MSM group in this period confirmed that sexual behavior is a major risk factor in exposure to HIV&AIDS where unprotected sex is the dominant risk factor for HIV&AIDS. Not using sexually active condoms can provide the greatest protection against HIV&AIDS.

MSM are very susceptible to HIV due to unsafe sexual practices, both anal and oral [6].

The risk factors for HIV&AIDS in MSM group were low rate of condom uses, changing sexual partners, as well as anal and oral sex practices [7]. Unprotected anal sex (without condoms) in men who have sex with men is a major risk for LGV infection (lymphogranuloma venereum), of which 89% of people with LGV are HIV positive [8]. The use of condoms can prevent HIV transmission effectively by 70% based on a study conducted by Palmer et al., 2014. This research is also in accordance with findings from the US National Institutes of Health and the World Health Organization (WHO) which states that condoms are impermeable to against infectious disease pathogens including viruses. This is corroborated by research conducted by (Weller, 1996) which states that the effectiveness of condoms in the prevention of viruses and bacteria is 69 - 94% [9, 10].

MSM group who are HIV positive had a history of doing UAI (Unprotected Anal Intercourse) or anal sex behavior more often [11]. It causes HIV transmission to spread more easily so that consistent condom use is essential to prevent HIV transmission, especially among MSM group. Therefore, this research is important to comprehend and identify the determinants of condom use status among MSM group in 5 cities in Indonesia.

2.   Method

2.1   Study design and sample

This study used a cross sectional design and carried out in 5 cities in Indonesia: Jakarta, Bandung, Semarang, Surabaya, and Denpasar using secondary data from the Integrated Biological and Behavioural Survey (IBBS) in 2015. Population in this study were men who had sex with men living in Indonesia while the sample were men aged ≥15 years who had sex with men in the last one year and living in those 5 cities for at least one month and had met the inclusion criteria. The inclusion criteria were as follows: subject is male, aged ≥15 years who had sex with a man over the last one year, willing to be a respondent, and living in 5 cities which were selected as research locations: Jakarta, Bandung, Semarang, Surabaya and Denpasar for at least one month.

In this study there were 1320 interviewed respondents, but the number of respondents who had HIV test results and have complete data were only 1064 people. Then, all respondents who were selected in the 2015 IBBS were included and used as samples. The process of our study is shown in Figure 1.
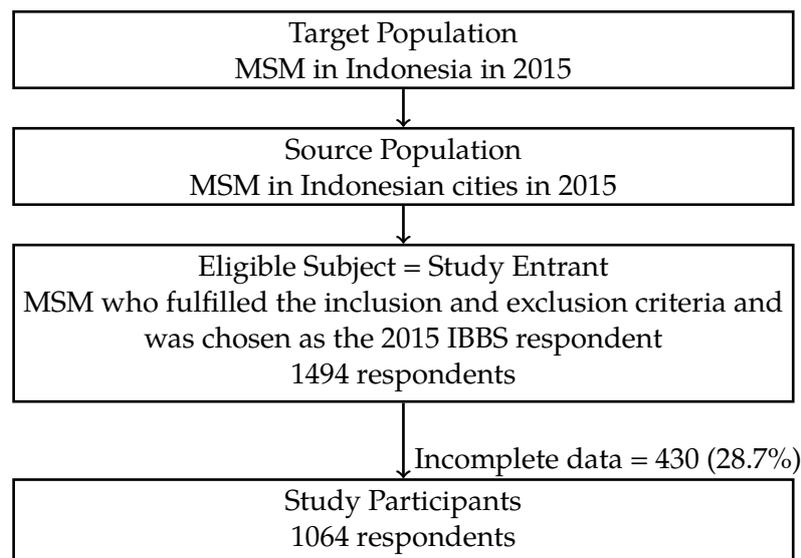
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┌─────────────────────────────────────────┐
│           Target Population              │
│        MSM in Indonesia in 2015          │
└─────────────────────────────────────────┘
                    ↓
┌─────────────────────────────────────────┐
│           Source Population              │
│     MSM in Indonesian cities in 2015     │
└─────────────────────────────────────────┘
                    ↓
┌─────────────────────────────────────────┐
│     Eligible Subject = Study Entrant     │
│  MSM who fulfilled the inclusion and     │
│  exclusion criteria and                  │
│  was chosen as the 2015 IBBS respondent  │
│           1494 respondents               │
└─────────────────────────────────────────┘
                    ↓  Incomplete data = 430 (28.7%)
┌─────────────────────────────────────────┐
│           Study Participants             │
│           1064 respondents               │
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Figure 1. The process of the study

The method of data collection is Respondent Driven Sampling (RDS), a snowball-based sampling technique based on recruitment quotas (which avoids the recruitment of a whole sample of limited individuals) and multiple incentives to motivate both recruiters and the recruits. RDS started from a

small number of purposively selected participants called seed, who are chosen as heterogeneously as possible to ensure that any group member has a high probability of being recruited. Selected seeds came from people with diverse characteristics. Each seed was asked to recruit 3 other MSM until the minimum sample is fulfilled.

2.2   Variables

This research was conducted by analysing interview data based on questionnaires from the integrated biological and behavioral survey in MSM group. In this study, Condom Use Status became the dependent variable, whilst predictor variables consisted of HIV status, age, marital status, knowledge of condoms, exposure to HIV&AIDS information, history of sexually transmitted disease (hereafter STD), and history of injecting drug use. HIV status data were obtained from HIV serological examination, while data of the Condom Use Status were obtained from interviews based on the 2015 IBBS questionnaire on MSM group by answering questions about the latest condom use behaviour and on the last one month with non-permanent partners or extended encounters, shemale, or sex workers. (Block 6). Variables of age and marital status were obtained from direct interviews in accordance with the IBBS questionnaire. Knowledge of condoms variable were measured from interview results by answering questions on the use of condoms in preventing HIV transmission, providing that the respondent answers 70% of the total eight questions correctly, he is considered to have good knowledge about condoms and if he can only answer less than 70%, they are considered to have poor knowledge about condoms. the questions used to measure knowledge are 10 questions about HIV & AIDS, condoms, HIV transmission, HIV & AIDS prevention with condoms. Meanwhile, variable of exposure to HIV&AIDS information were measured from interview results by answering questions whether respondents had or had not received any information pertaining HIV&AIDS over the last one year. The STDs history were measured using interview results by answering respondent's history of sexually transmitted infections and its test results before the survey was conducted. Last but not least, drugs injection history was measured using interview results by answering whether or not the respondents had previously used injecting drugs for the last one year.

2.3   Data analysis

Acquired data were then analysed using univariate, bivariate, and multivariate methods with logistic regression analysis to assess Prevalence Odds Ratio (POR) and processed using SPSS 20 software.

3.   Results

In this study, it was found that there were 76.1% of respondents who used condoms consistently and 23.9% were not. According to table 1, 25.8% were HIV-positive and 74.2% were HIV-negative. In the marital status of the respondent, majority of respondents were unmarried which accounts to 80.9%, 12.7% have married status, and 6.5% are divorced. It can be seen from Table 1 above that respondent with the youngest age range in this study is 15 years old. Most respondents were aged 15-45 years with a percentage of 89.8%. Respondents who received HIV&AIDS information from NGOs, healthcare workers, and relatives were up to 83.8% and those who did not accounted for 16.2%. In Table 1, it can be seen that there were 88.5% of respondents who have good knowledge of condoms and those with poor knowledge were as much as 11.5%. 1.5% of respondents had a history of injecting drug use, while the rest of 98.5% noted to not having injecting drug use. Respondents with a history of STDs were amounted to 69.9%, whilst 30.1% did not have any STDs history.

Results of bivariate analysis in table 2 above pointed that out of 7 variables, namely HIV status, age, marital status, knowledge of condoms, exposure to HIV&AIDS information, history of STDs, and consumption of injecting drugs, there were 2 variables with significant correlations to the Condom Use Status variable with p value of <0.05. These variables are knowledge of condoms and exposure to HIV&AIDS information. Model candidates in the multivariate model were selected from variables with p value of <0.25 of bivariate analysis and were substantially related to Condom Use Status of not using condoms.

Table 1. Distribution of Determinant Variable Frequency of Condom Use Status among MSM Group in 5 Cities in Indonesia (Integrated Biological and Behavioural Survey Data 2015)

Characteristics	N	%
Status of condom use		
Yes	810	76.1
No	254	23.9
HIV status		
Positive	386	25.8
Negative	1108	74.2
Marital status		
Unmarried	1208	80.9
Married	189	12.7
Divorced	97	6.5
Age		
15-25 years	333	22.3
26-35 years	714	47.8
36-45 years	294	19.7
>45 years	152	10.2
Respondents who received HIV & AIDS information		
Yes	1242	83.8
No	240	16.2
Knowledge of condoms		
Good	1320	88.5
Poor	171	11.5
Having injecting drug use		
Yes	22	1.5
No	1448	98.5
STDs history		
Yes	202	69.9
No	87	30.1

In the final model of multivariate analysis, it was found that variables that are significantly associated with the Condom Use Status were marital status, exposure to information on HIV&AIDS, and knowledge about condoms. The exposure to HIV&AIDS information has 1.668 (95% CI OR 1.148-2.422) POR value, and knowledge about condoms has POR value as much as 1.925 (95% CI OR 1.274-2.907).

4.   Discussion

This study used a cross sectional design, causing limitations regarding the principle of temporality. It also employed secondary data so that researchers cannot control the bias at the stage of data collection. Therefore, researchers had not been able to control the probability of non-differential misclassification bias. Out of 1494 total respondents interviewed, only 1064 were eligible as samples with a participation rate of 71.2%.

In the univariate analysis, it was found that out of the total MSM sample, a high number was found in respondents who had HIV positive status of 25.8%. In the condom use behaviour variable, 23.9% of respondents did not use condoms consistently. Out of those respondents who did not use condoms consistently, there were 24.8% who had HIV positive status. These results indicated high number of respondents who have positive HIV status in non-condom use respondents.

Variable of exposure to HIV & AIDS information has POR value of 1.668 (95% CI OR 1.148 - 2.422) in this study. Result findings indicated that respondents without acquired information on HIV & AIDS possess Condom Use Status 1.668 times higher than respondents who are info-savvy. HIV prevention information in the form of interventions in the form of HIV testing and free condoms

Table 2. Bivariate Analysis of the Determinants of Condom Use Status among MSM Group in 2015

Variables	Not Using Condoms		Using Condoms		p Value	POR	95% CI	
	N	%	N	%			Lower	Upper
Marital Status								
Unmarried	48	18.9	88	10.9	0.293*	1.407	0.412	1.247
Married	187	73.6	673	83.1	0.238	0.717	0.745	2.657
Divorced	19	7.5	49	6	Ref	Ref		
Respondents who received HIV&AIDS information								
No	54	21.5	104	13	0.001*	1.842	1.279	2.653
Yes	197	78.5	699	87	Ref	Ref		
Knowledge of condoms								
Poor	43	16.9	76	9.4	0.001*	1.966	1.312	2.944
Good	211	83.1	733	90.6	Ref	Ref		
HIV Status								
Positive	63	24.8	232	28.6	0.234*	0.822	0.595	1.135
Negative	191	75.2	578	71.4	Ref	Ref		
Having injecting drug use								
Yes	7	2.8	9	1.1	0.069*	2.521	0.929	6.841
No	244	97.2	791	98.9	Ref	Ref		
STDs history								
Yes	38	76	117	67.2	0.239*	1.543	0.749	3.176
No	12	24	57	32.8	Ref	Ref		
Age								
15-25 years	55	21.7	167	20.6	0.072*	0.706	0.484	1.031
26-35 years	94	37.2	404	49.9	0.655	1.101	0.723	1.677
36-45 years	62	24.5	171	21.1	0.012	1.875	1.148	3.063
>45 years	42	16.6	68	8.4	Ref	Ref		

can increase the level of consistency in the behavior of condom use. MSM who used condoms at the last anal sex tended to consistently use condoms over the past month, which was influenced by exposure to HIV & AIDS information and condoms [12]. Based on research conducted in China, it was shown that peer information (OR = 2,632) and AIDS counseling (OR = 2,347) had a lower risk of unprotected anal intercourse [13]. However, this finding turns out to be different to a research conducted by Lia Winahyu et. al. [14] who mentioned that the access to HIV & AIDS information does not have significant correlation to condom use status. Information on prevention and transmission of HIV & AIDS can come from health workers and media such as the mass media, print media and online media.

Results suggested that consistent Condom Use Status within the past one month was more prevalent in respondents who have a good level of knowledge about condoms that was equal to 83.1% compared to those with poor knowledge on them that was amounted to only 16.9%. Knowledge about condoms has a POR value of 1.925 (95% CI OR 1.274 - 2.907), meaning that respondents with poor knowledge about condoms tended not to use condoms consistently 1.925 times higher than those with a good knowledge on them. This research findings are in line with [15] which found that respondents with good knowledge of condoms and lubricants will tend to use condoms and lubes consistently at 2.379 times higher than respondents who lack knowledge on them. It is also similar to the research conducted in [16], mentioning that specifically for people living with HIV & AIDS (PLWHA), appropriate knowledge about HIV & AIDS is very helpful in changing the behaviour of PLWHA in preventing HIV transmission by using condoms.

Table 3. Final Model of Multivariate Analysis of the Determinants of Condom Use Status among MSM Group in 2015

Variables	p Value	POR	95% CI	
			Lower	Upper
Respondents who received HIV&AIDS information				
No	0.007	1.668	1.148	2.422
Yes	Ref	Ref		
Knowledge of condoms				
Poor	0.002	1.925	1.274	2.907
Good	Ref	Ref		

A person's knowledge can be a major determinant of a change in health behavior. The higher a person's knowledge about health, the more conscious he will be to maintain his health. According to Notoatmodjo [17], health behavior will last if it is based on correct knowledge about health. The knowledge of the definition of HIV & AIDS, modes of transmission, risk of transmission, and prevention methods is very important to know especially for risk groups such as MSM. Knowledge of HIV & AIDS prevention in MSM groups can reduce risky sexual behavior and condom use as a means of preventing HIV transmission in anal sex.

Nowadays, MSM are divided into 2 groups, namely groups of MSM who are still closed groups and MSM who have begun to open up and form communities. With the presence of closed MSM groups it is difficult to provide intervention to these MSM so that the behavior of using condoms is still unknown and uncontrolled. Whereas for MSM groups who have started to open up and have communities, the government and NGOs have intervened through providing information about HIV & AIDS and condoms. In addition, MSM are given assistance in accessing condoms more easily. It is hoped that in the future, the government and NGOs will work together in an effort to screen MSM groups and HIV screening so that they can capture all MSM groups in Indonesia. By knowing all the existing MSM groups, it is expected that the government will be easier to provide intervention and help in accessing the availability of condoms.

5.   Conclusion

The number of respondents who used condoms consistently for the past one month were 76.1% and those who did not were 23.9%. Variables that are significantly related to the behaviour of not using condoms are marital status, exposure to HIV & AIDS information, and knowledge of condoms. The non-condom using behaviour could be improved through increasing knowledge about condoms and providing information on HIV & AIDS. Therefore, it is expected that counseling and education activities on HIV & AIDS and condoms will be continuously carried out, especially for the MSM groups.

Acknowledgments

Conflict of Interest

There is no conflict of interest.

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