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Original Article

Uncovering the Risk of Sexually Transmitted Infections in Men Who Have Sex with Men (MSM) in Indonesia

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Abstract

Background: The prevalence of sexually transmitted infections in men who have sex with men (MSM) is higher than in other communities. We aimed to Uncovering the risk of sexually transmitted infections in MSM in Indonesia.

Methods: We adopted a cross-sectional design carried out in 24 provinces in Indonesia from March-May 2023, using secondary data from the 2018-2019 Integrated Biological Behavior Survey (IBBS). The population consisted of MSM who had sex with men totaling 6,000 people. A total of 4,290 samples were selected using Respondent Driven Sampling (RDS). The data obtained were analyzed with chi-square and logistic regression models of risk factors.

Results: The prevalence of STIs in MSM was 20.9%. Marital status, consistency of condom use (P<0.01), how to get condoms (P<0.001), and STIs examination (P<0.001) had a significant association with the incidence of STIs among MSM from 2018 – 2019. Meanwhile, the use of lubricant during sex association had no significant relationship with the incidence of STIs. Vaginal and anal sexual intercourse had a significant relationship with the incidence of STIs, where MSM who CI95% (had their first anal sex between the ages of 25-49 years (P<0.001), AOR=2.26 and vaginal sex at the age of ≥50 years were more at risk of experiencing STIs (P<0.017), AOR=1.33.

Conclusion: Marital status, consistency of condom use, how to get condoms, and STIs examination, vaginal and anal sexual intercourse had a significant association with the incidence of STIs among MSM.

Keywords: Men; Sexually transmitted infections (STIs); Sex intercourse; Indonesia

Introduction

Men who have sex with Men (MSM) are a population at a higher risk of experiencing Sexually Transmitted Infections (STIs), including HIV (1,2). The prevalence of sexually transmitted infections in MSM is higher than in other communities (3,5). MSM have a significantly higher estimated risk of acquiring HIV infections throughout their lifetime compared to heterosexual men (with a risk of 1 in 524) (6).

Human Papilloma Virus Prevalence is 89-93% in HIV-positive MSM, anal HPV and HR-HPV prevalences were 93.4% and 81.9%(2,11). The prevalence of HCV among HIV-positive MSM was 6.3%. Furthermore, syphilis is a common STI with an average prevalence rate of 11.8% (range 5.2% to 19.6%) in 11 of the 25 reporting countries (7). Rectal HPV DNA detected in 93% of HIV-

positive men chain reaction polymerase(8). The incidence of cancer among HIV-positive MSM is more than 80-fold higher than that observed in the general population (6). Seven of these countries were reported to have a prevalence of more than 10%. Untreated syphilis has been reported to cause serious complications in 25% of cases (7), 74.6% of patients had rectal Human Papilloma Virus (HPV) infection, 68.7% had high-risk HPV (HR) infection, and 56.7% had multiple infections involving 2-9 (median, 3) HPV types (9).

MSM is risky because anal sex behavior has a higher risk of sexually transmitted infections than other types of sexual intercourse (10,12). This disparity is further compounded by having multiple sexual partners, anonymous partners, 34,3% unprotected sex, and substance use (3,4,13,14). Infectious diseases are generally transmitted through receptive anal sex as opposed to penile-vaginal intercourse (3). Another factor causing MSM risk was that of the 11.191 sexually active MSM, 76% reported casual male partners. The average number of casual couples is three (15).

Although studies have been conducted in various countries, data on STIs in MSM in each country and risk factors for infectious infections are different (16). Race and ethnicity can influence rates of sexually transmitted infections (10). African-American/Black and Hispanic/Latino MSM racial and ethnic minority groups may have a higher prevalence of sexually transmitted infections, including HIV (14). Black MSM in the UK and US are more likely to be HIV positive than other MSM (17,18).

In the context of prevention, it is important to look for risk factors for the incidence of STIs in the MSM population to find effective biomedical and behavioral approaches (19). Based on the above facts, researchers are interested in uncovering the risk of sexually transmitted infections in MSM in Indonesia and identifying dominant risk factors.

Methods

We adopted a cross-sectional design and was carried out in 24 provinces in Indonesia from March-May 2023, using secondary data from the 2018-2019 Integrated Biological Behavior Survey (IBBS) (20).

The sample population consisted of MSM who had sex with men either once, occasionally, or intensely, totaling 6.000 individuals spread across 24 provinces in Indonesia. We included 4.290 MSM, with exclusion criteria applied to districts/cities that were difficult to access due to security concerns or had a low number of subjects. The inclusion criteria comprised men who are at least 15 years old, had engaged in sex with men at least once in the past year, and had resided in the survey city for a minimum of one month. The selection of samples at the 2018 IBBS in the MSM group was carried out using the Respondent Driven Sampling (RDS) method. The dependent variable in this study was the incidence of STIs, while the independent included vaginal and anal intercourse sex. Furthermore, the confounding variables were married status, consistency of condom use, how to get condoms, use of lubricant during sex, and STIs examination. The data obtained were analyzed using multivariate analysis in the form of a logistic regression model of risk factors with the STATA 14 software.

This study was ethically approved Health Research Ethics Committee University of Indonesia with reference number 727/UN2.F10/PPM.00.02/2018.

Results

Approximately 14.1% of MSM had symptoms of pain when urinating, while 2.8% and 2.4% had warts around their genitals and anus, respectively. Furthermore, 2.6% and 1.7% were infected with scabs/sores around the genitals and anus, respectively. The results showed that 5.5% of MSM complained of having abnormal discharge from the penis, while 1.2% had discharge from the anus. Approximately 1.4% also stated that they lumped the anus, as shown in Table 1.

Table 1: Distribution of MSM based on symptoms of STIs in Indonesia in 2018 – 2019

STIs Ssymptoms	N	%
Extreme pain or burning when urinating		
Have symptoms	606	14.1
have no symptoms	3684	85.9
Warts around the genitals		
Have symptoms	118	2.8
have no symptoms	4172	97.2
Warts around the anus		
Have symptoms	103	2.4
have no symptoms	4187	97.6
Sores or sores around the genitals		
Have symptoms	112	2.6
have no symptoms	4178	97.4
Sores or sores around the anus		
Have symptoms	71	1.7
have no symptoms	4219	98.3
Abnormal discharge from the penis		
Have symptoms	236	5.5
have no symptoms	4054	94.5
Abnormal discharge from the anus		
Have symptoms	50	1.2
have no symptoms	4240	98.8
Lump/swelling around the anus		
Have symptoms	60	1.4
have no symptoms	4230	98.6

Table 2 shows that the proportion of MSM who reported engaging in sex at the age of 15-19 years was higher compared to other age groups, with 49.2% for anal and 40.6% for vaginal intercourse, respectively.

Table 2: Distribution of MSM based on anal and vaginal intercourse sex in Indonesia in 2018 – 2019

Sex intercourse anal (in years)	N	%
15 – 19	2112	49.2
20 – 24	986	23.0
25 – 49	454	10.6
≥50	738	17.2
Vaginal intercourse sex (in years)		
15 – 19	1740	40.6
20 – 24	555	12.9
25 – 49	275	6.4
≥50	1720	40.1

Based on Table 3, the highest proportion of married status of LSL is unmarried, which is 81.91%. Furthermore, 14.0% stated that they were inconsistent in using condoms during sex, and 23.6% admitted to not using protection. 29.7% did not use pelicans during sex and 75.2% stated that they never had a STIs examination.

Table 3: Distribution of Men to Men (MSM) based on Characteristics in Indonesia in 2018 – 2019

Marital Status	N	%
Married, living at home with a partner	453	10.6
Married, live separately with partner	107	2.49
Divorced	172	4.0
death divorce	43	1.0
Not married yet	3515	81.91
Consistency of condom use		
No	599	14.0
Yes	3691	86.0
How to get condoms		
Don't have condoms	1011	23.6
Just buy	1352	31.5
Get free	1170	27.3
Buy and free	643	14.9
Unknown	114	2.7
Use of Lubricant during sex		
No	1240	29.7
Yes	2936	70.3
STIs screening		
Never	3224	75.2
Once	1066	24.8

This study found vaginal and anal sexual intercourse, marital status, consistency of condom use, how to get condoms, and STIs examination had a significant association with the incidence of STIs among MSM from 2018 – 2019. Meanwhile, the use of lubricant during sex had no significant relationship with the incidence of STIs, as shown in Table 4.

Table 4: Results of Bivariate Analysis

Variable	STIs symptoms				*P*-values
	Yes		**No**		
Intercourse vaginal sex (yr)					**<0.001**
15 – 19	494	28.4	1246	71.6	
20 – 24	108	19.5	447	80.5	
25 – 49	39	14.2	236	85.8	
≥50	256	14.9	1464	85.1	
	897	20.9	3393	79.1	
Anal intercourse sex (in years)					**<0.001**
15 – 19	520	24.6	1592	75.4	
20 – 24	201	20.4	785	79.7	
25 – 49	66	14.5	388	85.4	
≥50	110	14.9	628	85.5	
	897	20.9	3393	79.1	
Marital status					**<0.001**
Married, living at home with a partner	95	21.0	358	79.0	
Married, live separately with partner	8	7.5	99	92.5	
Divorced	27	15.7	145	84.3	
death divorce	6	14.0	37	86.1	
Not married yet	761	21.7	2754	78.3	
Consistency of condom use					**<0.01**
No	103	17.2	496	82.8	
Yes	794	21.5	2897	78.5	
How to get condoms					**<0.001**

Table 4: Continued …

Don't have condoms	181	17.9	830	82.1	
Just buy	286	21.2	1064	78.8	
Get free	295	25.3	874	74.7	
Buy and free	108	16.8	534	83.2	
Use of Lubricant during sex					**>0.05**
No	272	22.0	966	78.0	
Yes	598	20.4	2336	79.6	
STIs check					**<0.001**
Never	516	16.0	2707	84.0	
Once	381	35.8	682	64.2	

Vaginal and anal sexual intercourse affected the incidence of STIs after being controlled with a confounding variable in the form of a STIs examination. MSM who had their first vaginal sex at the age of ≥50 years were 2.26 times more at risk of experiencing infections compared to others. Meanwhile, participants who had their first anal sex between the ages of 25-49 years were 1.85 times more at risk, as shown in Table 5.

Table 5: Results of Logistic Regression Model of Risk Factors Effect of Sex Intercourse on the Incidence of STIs in MSM in Indonesia in 2018 – 2019

Variable	STIs incident					
	Initial Modeling			**Final Modeling**		
	***P*-values**	**AOR**	**95% CI**	***P*-values**	**AOR**	**95% CI**
Vaginal sex intercourse						
15 – 19	*Ref*			*Ref*		
20 – 24	0.005	1.45	1.12 – 1.87	0.003	1.47	1.14 – 1.90
25 – 49	0.001	1.98	1.34 – 2.96	0.001	2.01	1.38 – 2.94
≥50	0.001	2.23	1.85 – 2.68	0.001	2.26	1.89 – 2.69
Anal sex intercourse						
15 – 19	*Ref*					
20 – 24	0.010	1.30	1.06 – 1.59	0.005	1.33	1.09 – 1.62
25 – 49	0.001	1.75	1.28 – 2.40	0.001	1.85	1.36 – 2.51
≥ 50	0.040	1.29	1.01 – 1.66	0.017	1.33	1.05 - 1.68
Marital status						
Married, living at home with their partner	*Ref*					
Married, living separately with their partner	0.004	3.11	1.43 – 6.75	-	-	-
Divorced	0.070	1.59	0.96 – 2.62	-	-	-
Death divorce	0.617	1.27	0.50 – 3.19	-	-	-
Not married yet	0.402	1.12	0.85 – 1.47	-	-	-
Consistency of condom use						
No	*Ref*					
Yes	0.350	0.89	0.69 – 1.37	-	-	-
How to get condoms						
Don't have condoms	*Ref*					
Just buy	0.068	0.81	0.65–1.01	-	-	-
Get free	0.019	0.75	0.60 – 0.95			
Buy and free	0.620	1.07	0.81 – 1.42			
Use of Lubricant during sex						
No	*Ref*					
Yes	0.006	1.29	1.07 – 1.55	-	-	-
STI screening						
Never	*Ref*					
Once	0.001	0.32	0.26 – 0.38	0.001	0.32	0.27 – 0.38

Discussion

The results of this study showed that the prevalence of STIs in MSM was 20.9%: about 14.1% of MSM had symptoms of pain when urinating and 5.5% of MSM complained of abnormal vaginal discharge from the penis, while 1.2% experienced vaginal discharge from the anus. The results of this study are similar to other results that one in five MSM was infected by sexually transmitted diseases and the rates of STIs, such as HIV, syphilis, and gonorrhea increased in the group of men who had sex with men(21,22). Similar results found the prevalence of STIs in MSM was chlamydia and gonorrhea at 1.4% to 9.2% The overall prevalence of HIV infection, was 7.2% (18,23,24). The prevalence of STIs and HIV in MSM is estimated to be 38 to 109 times higher in MSM than in men or women who have sex (25). Risk sexual behavior factors influencing the high incidence of STIs including HIV/AIDS in the MSM group, especially in terms of inconsistent condom use and multiple sex partners (18,26,27). Several studies also report a higher risk of HIV/AIDS due to the high prevalence of anal sex (28,29)**.** Receptive sex increases the chances of being infected with the virus by 3 times (30). Even when a man does not have receptive anal sex, gonorrhea can be transmitted easily to the anal opening through fingering (31). This is exacerbated by the behavior of MSM who like to consume alcohol so they do not use condoms during sex (32,33). The proportion of urban LSL who consume alcohol is indeed high, reaching 85%, and is exacerbated by the habit of LSL using drugs as much as 52% (34).

The results of this study found that MSM who had their first anal sex between the ages of 25-49 years were 1.85 times more at risk of experiencing infection compared to the Age group other. MSM tend to have their first anal sex at a young age (20 years). The results of this study are the same as the results of the study of Smith et. al., that the risk of transmission and transmission is highest in the age group of 25-29 years (35) and this result is also the same as the findings of Yu et al , that MSM have their first same-sex sex at the age of 18–24 years (61.5%)(36). Anatomical and physiological conditions of the body at a young age are susceptible to infection due to injuries to the anal (37). The incidence of infectious disease in MSM increases with age, from 0% among 15-year-olds to 9.7% among 22-year-olds (19). There was a 21% increase in incidence in people aged 13-29 years, driven by a 34% increase in young men who have sex with men (1).

Recent research results show that MSM who have anal sex have a higher incidence of STIs compared to those who have vaginal sex and The incidence of infection in the MSM group is higher compared to men who have sex with women (38). Anal sex is more at risk of infection than MSM who have vaginal sex because anal sex can cause sores to the genitals. The incidence of anal cancer among HIV-positive MSM is more than 80 times higher than observed in the general population (6).

MSM was known to have multiple sex partners and who were active on online dating sites had higher chances of engaging in sexual intercourse, which created a dense sexual network facilitating the transmission of infections (26). Certain behaviors, including sex parties and using drugs, such as crystal methamphetamine, gamma-butyrolactone, or mephedrone before or during intercourse, had been reported to facilitate the spread of enteric infections. These behaviors could also increase the likelihood of engaging in unprotected and group intercourse, fisting, use of sex toys, and scat play. Unprotected anal intercourse reported to be sexually active and involved in chemsex is significantly leading to the increase in STIs and HIV in the UK (39). Therefore, the health care system for MSM needs to be sensitive and improved through massive health promotion efforts to vaccination and meet quality health services that are user-friendly, and without discrimination (40). Structurally coordinated and health promotion interventions can prevent at least a quarter of new HIV

infections in MSM in different countries and Inclusive policies can contribute to the prevention and control of STIs in MSM (41,42).
The limitation of this study is that it does not explore qualitatively about sexual behavior in MSM, so it is hoped that there will be further research on the risk of STIs in MSM with a phenomenological design.

Conclusion

Several factors have a significant relationship with the incidence of STIs in MSM, namely vaginal and anal sexual intercourse, marital status, consistency of condom use, how to obtain condoms, and routine STI checkups. First anal intercourse at < age 50 and first vaginal sexual intercourse at ≥50 years old increase the risk of STIs in MSM. The results of this study emphasized the importance of education about safe sexual behavior, increasing consistency in condom use, ease of access to condoms, and the importance of routine STI checks to reduce the prevalence of STIs in MSM.
Current prevention efforts have not been able to contain or reduce STI transmission in this population. Additional behavioral and biomedical interventions are urgently needed. Furthermore, health services must also promote the use of condoms, as well as increase the access of MSM groups to protective.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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Conflict of Interest

The authors declare that there is no conflict of interests.

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