The Relationship between Selling Sex and HIV Status among Transgender in Indonesia
(Analysis of Integreted Biological and Behavioral Survey Data 2015)

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Abstract

HIV prevalence in transgender women is increasing compared to previous years. The aim of the Cross Sectional study was to find out the relationship between selling sex and HIV status among transgender in Indonesia. This study used secondary data for the 2015 Integrated Biological and Behavioral Survey (IBBS). Respondents were biologically male; ≥15 years old; recognized by friends of profession, "mami", or NGO workers as a transgender women; answer the questions, having sex partner and results of HIV test. The results showed that transgender who sell sex 1,358 times the risk of having a positive HIV status compared to transgender who do not sell sex (95% CI: 1.045 - 1.766) after being controlled with a variable STIs history.

Keywords *: HIV risk, transgender, transgender women, HIV status*

Introduction

Human Immunodeficiency Virus (HIV) is a retrovirus that damages and destroys the immune system so that the body's defense against infection becomes weak. A weakened immune system makes a person more susceptible to infection and disease.[1] Retroviruses have the ability to use their RNA and host DNA to form DNA viruses and are recognized during long incubation periods. Like other retroviruses, HIV infects the body with a long (clinic-latent) incubation period, and mainly causes signs and symptoms of AIDS.[2]

Based on UNAIDS data in 2017, in the world there were 36.9 million people living with HIV, 1.8 million of whom were new infections. The number of HIV infections in adults is 35.1 million, while in children under the age of 15 the number reaches 1.8 million. Deaths due to AIDS in 2017 were reported as many as 940,000 deaths.[3]

In Asia there are 5.2 million million people infected with HIV, 280 thousand of them are new infections and have caused the death of 170 thousand people in 2017.[4] In Indonesia, in 2016 there were 620,000 people living with HIV, 48,000 of whom were newly infected and there were 38,000 AIDS-related deaths. The key populations in Indonesia most affected by HIV are sex workers with an HIV prevalence of 5.3%, MSM groups with a prevalence of 25.8%, syringe users with a prevalence of 28.76%, transgender with a prevalence of 24.8% , and in prisoners with a prevalence of 2.6%. Since 2010, new HIV infections increased by 22% and AIDS-related deaths increased by 68%.[5]

A systematic review from Asia found that transgender people are 18 times more likely to be infected with HIV than those in the general population.[6] Transgender is one of the groups most affected by the HIV epidemic and 49 times more likely to live with HIV than the general population.[5]

Transgender has unique characteristics in shaping risk factors.[7] The main risk factors for transgender people to become infected with HIV are multiple sexual partners, anal or vaginal sex without using condoms, the use of hormones or drugs with the same syringe, commercial sex work, mental health problems, homelessness, unemployment, and drug abuse, and violence and lack of family support.[8] Transgenders who work selling sex will be at risk of contracting HIV.[9]

The purpose of this study was to determine the HIV prevalence and determinants of HIV status in transgender

transgender people in 5 major cities in Indonesia in 2015.

Material and Method

This study uses secondary data from the 2015 Integrated Biological and Behavioral Survey (IBBS) which was conducted in 5 major cities in Indonesia (DKI Jakarta, Bandung, Semarang, Surabaya, and Malang Raya). This type of observational research with cross sectional study design uses multistage cluster sampling technique which is done in several steps. A detailed description of the research design, sampling and main analysis can be found in the official IBBS report published by the Ministry of Health of the Republic of Indonesia.[10] The population in this study were all transgender respondents who were IBBS respondents in 2015. Whereas the sample was transgender transgender people from 5 major cities in Indonesia who had fulfilled the research inclusion criteria, namely a person who was biologically male; ≥15 years old; recognized by friends, "mami", or NGO workers as transgender; answering questions and there are results of HIV testing and syphilis testing. A total of 1,003 respondents were interviewed, but the number of respondents who entered into this study was transgender who had HIV test results and sex partners was only 867 people. Then, all respondents selected in the 2015 IBBS were included and used as samples in this study (total sampling).

This research was conducted by analyzing interview data based on a structured questionnaire from the 2015 IBBS in transgender transgender groups. The questionnaire contained questions to obtain information about the characteristics of the subjects, sexual behavior, scope of interventions, HIV and STIs testing, knowledge about HIV / AIDS and its prevention. HIV status is diagnosed by a rapid test, a test carried out to see antibodies arising from the presence of HIV infection. If the test shows a reactive (positive) result, then a follow-up test with confirmation is required. Respondents tested positive for HIV if positive results were obtained from the two tests. Syphilis status is determined based on the results of the RPR test (rapid plasma regain) and TP Rapid, which is a blood test to detect the presence of antibodies produced by the body against syphilis infection. While the anal swab is done to check for the presence of Chlamydia trachomatis and Neisseria gonorrhoeae. All IBBS data is officially documented and kept confidential by the Ministry of Health of the Republic of Indonesia.

Data Analysis

The collected data is then performed cleaning, processed and analyzed using univariate, bivariate and multivariate analysis. Univariate analysis was performed to see the frequency distribution of independent, dependent and covariate variables. Bivariate analysis in this study used the *chi square* test to determine the crude Prevalence Ratio (PR). All variables that are substantially related to HIV status were included in the multivariate analysis. Multivariate analysis in this study used a *cox regression* test with a significance level seen based on the value of 95% CI.

The strength of the association between the predictor variable and HIV status was measured using the Prevalence Ratio (PR) and adjusted PR. Confidence Interval (CI) for POR uses 95% CI with a significance value of 0.05..

Findings

Table 1 shows the transgender characteristics that were sampled in this study. Transgender who are HIV positive amounted to 26.1%. The main source of income for transgender from selling sex is 44.5%. Majority of respondents do not have STIs history (77.9%). Most respondents did not consistently use condoms (58.2%). 56.4% had good knowledge of HIV / AIDS transmission, 67.4% had good knowledge of HIV / AIDS prevention, 59.2% had less knowledge of HIV / AIDS misconception and 65.1% had comprehensive knowledge about HIV / AIDS which is good. For ages, some respondents were ≥25 years old (82.8%). Most respondents did not use injecting drugs (99.0%).

Bivariate analysis was performed to determine the *crude* Prevalenc Ratio (PR). All variables that are substantially related to HIV status were included in the multivariate analysis. The results of multivariate analysis of the relationship between selling sex and HIV status among transgender can be seen in table 3.

Transgender who sell sex 1,358 times the risk of having a positive HIV status compared to transgender who do not sell sex (95% CI: 1.045 - 1.766) after being controlled with a variable STIs history

Table 1. Characteristics of Respondents

Variable	Frequency (n)	Percentage (%)
HIV Status		
Positif	226	26,1
Negatif	641	73,9
Selling Sex		
Yes	386	44,5
No	481	55,5
STIs History		
No	675	77,9
Yes	192	22,1
Consistency of Condom Use		
Consistent	362	41,8
Inconsistent	505	58,2
Knowledge about HIV / AIDS transmission		
Good	489	56,4
Poor	378	43,6
Knowledge about HIV / AIDS prevention		
Good	584	67,4
Poor	283	32,6
Knowledge of HIV / AIDS Misconceptions		
Good	354	40,8
Poor	513	59,2
Comprehensive knowledge about HIV / AIDS		
Good	564	65,1
Poor	303	34,9
Age		
≥25 year	718	82,8
15-24 year	149	17,2
Injecting Drug Use		
No	858	99,0
Yes	7	0,8
Missing	2	0,2

Table 2. Bivariat Analysis of "The Realtionship of Selling Sex and HIV Status among Transgender in Indonesia"

Variable	HIV Status				Total		p-value	PR (CI 95%)
	Positif		Negatif					
	n	%	n	%	n	%		
Selling Sex								
Yes	120	31,1	266	68,9	386	100	0,003	1,596
No	106	22,0	375	78,0	481	100		(1,177 – 2,165)
STIs History								
Yes	72	37,5	120	62,5	192	100	0,000	2,030
No	154	22,8	521	77,2	675	100		(1,440 – 2,861)
Consistency of Condom Use								
Consistent	125	24,8	380	75,2	505	100	0,298	0,850
Inconsistent	101	27,9	261	72,1	362	100		(0,626 – 1,154)
Knowledge about HIV / AIDS transmission								
Good	95	25,1	283	74,9	378	100	0,582	0,917
Poor	131	26,8	358	73,2	489	100		(0,675 – 1,247)
Knowledge about HIV / AIDS prevention								
Good	70	24,7	213	75,3	283	100	0,534	0,902
Poor	156	26,7	428	73,3	584	100		(0,651 – 1,250)
Knowledge of HIV / AIDS Misconceptions								
Good	110	21,4	403	78,6	513	100	0,000	0,560
Poor	116	32,8	238	67,2	354	100		(0,412 – 0,761)
Comprehensive knowledge about HIV / AIDS								
Good	64	21,1	239	78,9	303	100	0,015	0,664
Poor	162	28,7	402	71,3	564	100		(0,477 – 0,925)
Age								
≥25 year	30	20,1	119	79,9	149	100	0,070	0,671
15-24 year	196	27,3	522	72,7	718	100		(0,436 – 1,035)
Injecting Drug Use								
No	2	28,6	5	71,4	7	100	0,883	1,132
Yes	224	26,1	634	73,9	858	100		(0,218 – 5,877)

Table 3. Multivariate Analysis of "The Realtionship of Selling Sex and HIV Status among Transgender in Indonesia"

Variabel	p-value	PR adjusted	CI 95%	
Selling Sex (Yes vs No)	0,022	1,358	1,045	1,766
STIs History (Yes vs No)	0,001	1,592	1,202	2,109

Discussion

The results showed that the HIV prevalence in transgender in 5 big cities in Indonesia was 26.1%. This increased if compared to 2011. In 2011, HIV prevalence was 21.85%.[11]

As many as 83.2% of transgender have a history of selling sex. Similar figures were also obtained from UNAIDS data which states that the proportion of transgender people in Indonesia who sell sex is estimated to reach 81%.[12] Then, it was also obtained that 17.4% of respondents had positive syphilis status. The incidence of syphilis in HIV sufferers has clinical implications between HIV infection and syphilis. An HIV test is important for all patients with a new diagnosis of syphilis.[13]

HIV prevalence in trangender who sell sex is 31.1%, whereas in transgender who do not sell sex is 22,0%. This is in line with research Operario et. al (2008) which gives the result that HIV prevalence in transgender sex workers is higher than non-sex transgenders.[14]

Transgender that selling sex has an a-PR value = 1,358 (95% CI: 1,045 – 1,766), this value indicates that respondents who selling sex are 1,358 times more likely to be infected with HIV than those who have no history of selling sex. Operario et al's research (2008) provides consistent results, where the risk of HIV infection in transgender sex workers is 1.46 times greater than transgenders who are not sex workers.[14] According to Altaf et al (2012), transgenders who work sex have a risk of 5 , 5 times more likely to be infected with HIV compared to other occupations.[15] The risk of transmitting HIV and STIs to transgender increases due to the behavior of transgenders who have sexual relations with many partners whose HIV and STIs status are unknown, have unprotected sex, and more often to engage in high-risk sexual activities.[16-18]

HIV prevalence in transgender who have STIs history is 37.5% while in transgender who haven't STIs history is 22.8%. This is in line with Mutmainah's study (2015) which gives the result that HIV prevalence in transgenders who have a positive STIs status is higher than that of transgenders who have a negative STIs status.[19]

The STIs history variable has a-PR value = 1.592 (1.202-2.109), this value indicates that respondents who have STIs history are 1.592 times more likely to be infected with HIV than those with haven't STIs history. This is in line with research conducted by Rompalo, et al (2001) that the median syphilis serology test is higher in patients infected with HIV compared with patients who are not infected with HIV ($p < 0.05$).[20] The results of a study conducted by Lee (2008) in Hong Kong gave the result that a history of STIs had a risk of 1.77 times having HIV (95% CI: 1.09-2.86).[21] Then, Pisani's research (2004) also gave the same result that transgenders who had syphilis had 3.8 times risk to experience HIV positive.[22] Ulcerative and non-ulcerative STIs have been found to increase the risk of sexual transmission of HIV.[23]

Limitations in this study are the use of secondary data with Cross Sectional study design where the associations in this study cannot see causal relationships. Then because risky behavior related to HIV transmission is sensitive enough to be asked of respondents, respondents may not fully answer honestly the questions asked.

Conclusions

Respondents who had HIV positive status were 26.1% and HIV negative status were 73.9%. Based on the final results of the multivariate analysis in table 3, it is known that transgenders who sell sex are 1,358 times at risk of having a positive HIV status compared to transgenders who do not sell sex (95% CI: 1.045 - 1.766) after being controlled with a variable STIs history. HIV status can be prevented by controlling its risk factors.

Conflict of Interest: Both authors declare that there is no competing interest in this paper.

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Ethical Clearance: This research guarantees the confidentiality of the data and the identity of the respondents. The data usage permit was obtained from Subdirektorat HIV and PIMS of the Indonesian Ministry of Health and written in the letter of approval and stated in the statement letter number PM.02.01/3/3313/2019. This research has also been through the ethics review from Ethical Commite Faculty of Public Health University of Indonesia with Ethical Approval number 717/UN2.F10/PPM.00.02/2019.

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