

Factors Affecting The Incidence of HIV/AIDS Based on Region in Pati Regency on 2017

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Abstract

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Multi factors that influence the increase of HIV / AIDS cases in Pati District are sexual behavior, consistency of condom use, socioeconomic, visit to localization, access to health service, partner sexual behavior, history of HIV / AIDS in couples. Methods of the study were observational analytic with case control design Population All people who had tested HIV based on VCT clinic data RSUD RAA Soewondo Pati and sample of 122 samples were obtained by lameshow formula. The instrument used is a questionnaire. Data analysis using Chi Square test with degree of significance 5% ($\alpha = 0,05$). The result of research shows the western region in Pati Regency there is relationship between sex behavior with the incidence of HIV / AIDS with the value of OR 21,0 ($p = 0,006$), there is correlation between injection drug usage with the incidence of HIV / AIDS with value OR = 36,0 ($p = 0.002$). In the north there is a relationship between sex behavior with the incidence of HIV / AIDS with the value of OR 21.2 ($p = 0.001$), there is a relationship between socioeconomic to HIV / AIDS incidence with OR = 10,0 ($p = 0,002$) and there is a relationship between history of HIV / AIDS in family OR = 6,2 ($p = 0,015$) with HIV / AIDS incidence. In the southern region of Pati Regency there is a relationship between socioeconomic and HIV / AIDS incidence with an OR value of 13.4 ($p = 0.002$) and there is a family history of HIV / AIDS with HIV / AIDS incidence with OR = 15.0 ($p = 0.002$). In the eastern region of Pati Regency there is a relationship between socioeconomic and HIV / AIDS incidence with an OR value of 12.0 ($p = 0.010$).

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INTRODUCTION

HIV/AIDS as one of the most destroying epidemic, *United National HIV/AIDS (UNAIDS) & World Health Organization (WHO)* mention that nowadays, in 2015 the number of people with HIV/AIDS is increased to 36,7 million people live with HIV/AIDS in the world. 2,1 million people got infected on 2015, the number of the death caused by AIDS were estimated to 1.1 million people in the whole world on 2015.

In Asia there are 2 million people suffering HIV/AIDS. Asia was estimated to have the highest rate of HIV in the World. The number of the Death caused by AIDS in Asia are 180.000 (UNAIDS, 2015). In Indonesia, HIV/AIDS was first discovered on 1987 in Bali and continuously develop year by year. The number of HIV/AIDS cases until December 2013 from 497 Town/City in all province in Indonesia is 368 (72%) (Direktoral Jendral P2L, 2013). Department of disease control and environmental health mention that, start from October in 2013, the number of HIV infection was reported to reach 8.624 people. Total AIDS case in October until December in 2013 is 2.845 people. The presentation of HIV/AIDS cases based on the transmission route, heterosexual cases (78%), unsterile needle syringe (9,3%), homosexual (4,3%), and from mother with HIV positive to her children (2,6%). The highest proportion of AIDS case are in 20-29 years old group (34,2%), 30-39 years old group (29%), 40-49 years old group (10,8%), 50-59 years old group (3,3%). The highest number of AIDS was reported in Papua, East Java, DKI-Jakarta on the third position, West Java, Bali, Central Java, Central Sulawesi, Borneo, Sumatera and Banten (Direktoral Jendral P2L, 2013).

Based on the total HIV / AIDS cases in the first quarter of 2016, Central Java ranks is on 13th in Indonesia, under DKI Jakarta, East Java, Papua, West Java, and Bali. In Central Java on 2008 there were 428 patients (the incidence is decreased 0.7% from 2007), in 2009 there were 559 patients (the incidence is increased by 22%), in 2010 there were 874 patients (incidence up 35% from the previous year) (Dinkes Provinsi Jawa Tengah, 2016). At the end of May 2016, Pati regency was ranked at fourth position in Central Java in the discovery of new cases of HIV / AIDS after Semarang, Surakarta, and Banyumas Regency. Educational levels, knowledge and attitudes that were less strongly affected the incidence of HIV / AIDS in Pati Regency .

Based on Department of Health in Paty Regency data, the number of HIV infection were reported on 2014 is 59 people and AIDS

cases are 97 people, the number of death caused by AIDS is 28 people, this number is decreased compared to 2013 which is 29 people and the number of AIDS cases are 72 people, in 2012 there are 49 cases consist of 20 HIV cases and 49 AIDS cases. In 2011 , there are 43 cases, 28 people with HIV and 15 with AIDS. The number of death caused by AIDS in Pati Regency On 2013 is 18 people (male =11, female= 7) (Dinkes Pati, 2014). Free sexual behavior and without protection can increased the number of HIV/AIDS, changing sex partner, homosexual, anal and oral sex with people who suffer HIV/AIDS cause the transmission getting easier.

Pati regency is located at the region which passed by an highway called Pantura, a crowded transportation for people or stuffs, so it is possible for them to stop by just for sleep or even looking for fun. These business was taken as an advantage for some people to build a small club and even a legal or illegal prostitution. The socioeconomic condition that is under the average, make some of the citizen choose to work as the part of the prostitution or move to move out form the town.

Based on a Pilot study by Department of Health of Pati Regency, there are 121 people with HIV/AIDS in Pati Regency and most of them are on productive age. Data on first three month in 2016, there are 7 people died in Pati Regency caused by HIV/AIDS. Since January 2016, there are 26 people with HIV/AIDS positive. 7 people with HIV/AIDS positive are dead, one of them is 9 years old kid (Dinkes Pati,2016).

Based on observation result on 7th October 2016 shows that there are 121 people with HIV/AIDS which come from Pati Regency and all of them have their ARV medication regularly. The cause of high number of HIV / AIDS in Pati Regency is still unknown (KPA, 2016).

METHODS

The method of this study is observational analytic with case control design. The population of this study is all patient who had HIV test based on VCT clinic data on RSUD RAA Soewondo Pati and 122 samples were obtain by using lameshow formula. The instrument of this study is questioner. Data were analyze using Chi Square with significance number 5% ($\alpha=0,05$).

RESULT AND DISCUSSION

West Multivariate Candidate Variable Selection

Variable that had been analyze with bivariate test and has significance number $p < 0,25$ can be chosen as candidate variable to be included as important variable in multivariate analysis.

Table 1. Multivariate Analysis of Factors that affecting the incidence of HIV/AIDS in Pati Regency

No	Variable	P value	OR
1.	Sexual Behavior	0.06	21.0
2.	Consistency of Condom use	0.36	2.33
		0.53	2.22
3.	Socioeconomic	0.36	2.33
4.	Prostitution visit	0.53	2.22
5.	Access to health care services	0.002	36.0
	Injecting drug user	1.0	1.0
6.	HIV/AIDS history in family		
7.			

The results of multivariate analysis showed the variables that influence the incidence of HIV / AIDS was consistency of condom use ($p = 0.010$), STI ($p = 0.007$), and HIV history in pair ($p = 0.003$). Variables with $p > 0.05$ were excluded from the model was the number of partner sex partners with $p = 0.290$ since they were not statistically significant.

Table 2. Result of Multiple *Logistic Regression* of The most affecting Factors the incidence of HIV/AIDS in Pati Regency

No	Variable	B	P value	Exp (B)/ OR
1.	Sexual Behavior	2.288	0.124	0.985
2.	Injecting drug user	3.584	0.007	36.0
	Constant	-		
		2.079		

Information: $p < 0,05$

Multivariate analysis result show that western side at Pati Regency had behavior to use injecting drug have 36 time higher risk to get HIV infection compare with who does not used it ($p = 0.002$; 95%, CI= 2.271 – 476.276).

The results of this study are match with research conducted by Erlendis Simanjuntak in Medan which states that injecting drug use is a risk factor for HIV / AIDS with OR = 21.25 ($p = 0.00$; 95% CI = 8.64-52.26). In this study Erlendis showed there was a correlation

between the use of needles injecting drugs with the incidence of HIV / AIDS, samples that using injecting drugs are probably 21.252 times higher got HIV / AIDS than non-injecting drug samples. The process of HIV virus infection in injecting drug users is similar to the infection process in tattoo needle users. Injecting drugs can be an entrance to HIV transmission because of there is exposed mucosa skin caused by a needle that has been used by previous HIV sufferers. The results of the study and interviews explain that people who use injecting drug together with another HIV positive patient are lack of information that needles caused them to get HIV through the syringes used interchangeably. The respondents knew the information after they were infected by the HIV virus.

Sexual behavior factors were associated with HIV / AIDS incidence with bivariate analysis ($p = 0.006$, OR = 21), but did not affect the incidence of HIV / AIDS in the western region in Pati District. This research is similar to that done by Siti Musyarofah in Kendal with the result of a multi sex partner relationship with the incidence of HIV / AIDS with OR = 23.32 ($p = 0.03$) and research conducted by Sumini in Pontianak showing that sexual behavior with more than 1 person being a risk factor for HIV / AIDS ($p = 0.040$, OR = 2.36). Sex behavior with more than 1 person causing greater exposure to the HIV, the more sex partners the greater the exposure of STI / HIV transmission. Switching sex partners will make the transmission faster.

Research conducted by Brenda (2015) in Tanzania show that there is no relation between socioeconomics ($p = 0.134$), history of HIV / AIDS ($p = 0.25$), condom consistency ($p = 0.15$), prostitution visit ($p = 0.8$) with the incidence of HIV / AIDS.

North Multivariate Candidate Variable Selection

Table 3. Multivariate Analysis of Factors that affecting the incidence of HIV/AIDS in Pati Regency

No	Variable	P value	OR
1.	Sexual Behavior	0.001	21.2
2.	Consistency of Condom use	0.148	4.8
		0.002	10.0
3.	Socioeconomic	1.0	1.0
4.	Prostitution visit	1.0	1.0
5.	Access to health care services	1.0	1.0
	Injecting drug user	0.015	6.2
6.	HIV/AIDS history in family		

The result of multivariate analysis showed the variables that have been shown to influence the incidence of HIV / AIDS was consistency of condom use ($p = 0.010$), history of STI ($p = 0.007$), and history of HIV in couple ($p = 0.003$). Variables with $p > 0.05$ were excluded from the model was the number of partner sex partners with $p = 0.290$ because it was not statistically significant.

Table 4. Result of Multiple *Logistic Regression* of The most affecting Factors the incidence of HIV/AIDS in Pati Regency

No	Variabel	B
1.	Sexual Behaviour	21.547
2.	Socioeconomy	1.404
3.	Injecting drug user	20.513
	Constant	-21.026

Information: $p < 0.05$

The results above, shows that all variables have a significant effect on the incidence of HIV / AIDS (Y). This is because all variables have p -value $< \alpha$ (0.05). From the results, it turns out the highest Odds Ratio is found in the consistency of condom use is 8.204. Thus consistency of condom use is the most influential factor to the incidence of HIV / AIDS compared to other factors. This study is supported by a study conducted by Sudirman in Alor NTT with $p = 0.00$ smaller than $\alpha < 0.05$ indicates there is influence between socioeconomic status with HIV / AIDS incidence in work area of Puskesmas Moru, Sub District of Southwest Alor, Alor District.

There is a relationship between sexual behavior, socioeconomic and the history of HIV / AIDS in the family because in the south, most of the people work as fishermen, drivers and work out of town, so couples who live apart affecting free sex behavior and transmit HIV to their legal partner at home. The number of coffee shops that proved to provide women sex workers who make it easier to do prostitution. Factors that do not affect HIV / AIDS in the southern region of Pati Regency such as access to health care, consistency of condoms, and visit the localization due to access to the place of health services is good, the means of transportation and provision of health services is adequate.

South Multivariate Candidate Variable Selection

Table 5. Multivariate Analysis of Factors that affecting the incidence of HIV/AIDS in Pati Regency

No	Variable	P value	OR
Sexual Behavior			
1.	Consistency of Condom use	0.022	6.6
2.	Socioeconomic	0.007	10.8
3.	Prostitution visit	0.002	13.4
4.	Access to health care services	1.0	1.0
5.	Injecting drug user	0.663	0.68
6.	HIV/AIDS history in family	0.54	2.1
7.		0.002	15.0

The result of multivariate analysis showed the variables that have been shown to influence the incidence of HIV / AIDS was consistency of condom use ($p = 0.010$), history of STI ($p = 0.007$), and history of HIV in couple ($p = 0.003$). Variables with $p > 0.05$ were excluded from the model was the number of partner sex partners with the value of $p = 0.290$ because it was not statistically significant.

Table 6. Result of Multiple *Logistic Regression* of The most affecting Factors the incidence of HIV/AIDS in Pati Regency

No	Variabel	B	Nilai p	Exp (B)/OR
1	Consistency of Condom use	3.177	0.41	23.971
2.	Socioeconomic	21.571	0.998	2E+009
3.	HIV/AIDS history in family	21.643	0.998	3E+009
	Constant	-23.405		

Information : $p < 0.05$

The above results show that all variables have a significant effect on the incidence of HIV / AIDS (Y). This is because all variables have p -value $< \alpha$ (0.05). From the results it turns out the highest Odds Ratio is found in the consistency of condom use is 8,204. Thus consistency of condom use is the most influential factor to the incidence of HIV / AIDS compared to other factors. The results of this study are in match with study conducted by Maria Amelia Guterres in Timor Leste which states that inconsistent condom use is a risk factor for HIV / AIDS with OR = 3.308 ($p = 0.002$; 95%) and conflicted with Sumini's research in Pontianak with value OR = 0.16 ($p = 0.003$; 95%) 28,53

The use of condoms is not 100% can prevent the transmission of HIV, but can minimize the transmission. Factors that lead to ineffective condoms such as condom quality, condom expired date, incorrect attachment of condoms, wrong disposable condoms, and excessive sex activity. According to the prevailing procedure unit of condom products on the market if in 1000 no condom can be passed the substance with 5 micron of weight. The problem is that many condoms are not as effective as its function because torn or miss (out of the accidentally slip out from testis). Added some lubricant can decrease condom rates tear, but increase the number of condoms slipped.

The study conducted by Riska Ovany in Semarang shows that several factors influencing condom use are low condom offering capacity (OR: 26.63), fixed customer (16.68) and no customer support (7.4) 34. While a study by Irwan Budiono in Argorejo resocialization semarang shows that the consistency of condom use is only 62.9%, consistency of condom use are influenced by knowledge, attitude, access of STI and HIV information, customer perception and the pimp support.

Based on field study, it shows that Respondents did not know that their sex partners had been infected with HIV / AIDS and their HIV positive did not check the condom condition before they use it whether it is torn, leaked, expired date and the way of disposing the condoms. Some people work as sex workers, admitting they have difficulty offering condoms to their customers due to low transaction value, even though they know inconsistency in using condoms is a risk for HIV / AIDS.

West Multivariate Candidate Variable Selection

Table 7. Multivariate Analysis of Factors that affecting the incidence of HIV/AIDS in Pati Regency

No	Variable	P value	OR
1.	Sexual Behavior	0.002	26.6
2.	Consistency of Condom use	0.076 0.010	5.4 12.0
3.	Socioeconomic	0.670	1.4
4.	Prostitution visit	0.338	2.5
5.	Acess to health care services	0.534 1.0	2.22 1.0
6.	Injecting drug user		
7.	HIV/AIDS history in family		

Multivariate analysis result showed, a variable that have been shown to influence the incidence of HIV / AIDS was consistency of condom use ($p = 0.010$), history of STI ($p = 0.007$), and history of HIV in couple ($p = 0.003$). Variables with $p > 0.05$ were excluded from the model, the number of partner sex partners with the value of $p = 0.290$ because it was not statistically significant.

Table 8. Result of Multiple Logistic Regression of The most affecting Factors the incidence of HIV/AIDS in Pati Regency

No	Variable	B	P value	Exp (B)/ OR
1.	Sexual Behavior	2.661 0.936	0.78 0.503	14.31 2.55
2.	Socioeconomic	-		
	Constant	1.377		

Information: $p < 0.05$

The results above show that all variables have a significant effect on the incidence of HIV / AIDS (Y). It is because all variables have $p\text{-value} < \alpha (0.05)$. From the results it turns out the highest Odds Ratio is found in the consistency of condom use is 8,204. Thus consistency of condom use is the most influencing factor to the incidence of HIV / AIDS compared to other factors.

This study is similar to that conducted by Siti Musyarofah in Kendal, a multi sex partner relationship with HIV / AIDS incidence with OR = 23.32 ($p = 0.03$) and study by Sumini in Pontianak show that sexual behavior with more than 1 person can be a risk factor for HIV / AIDS ($p = 0.040$, OR = 2.36).

A study by Erlendis Simanjuntak in Medan show that there is a relationship between free sex with the incidence of HIV / AIDS ($p = 0.000$). Respondents who had free sex have 9.966 times higher risk than respondents who do not have free sex.

Sexual behavior with more than 1 person caused greater exposure to the HIV, more sex partners means the greater the exposure of STI / HIV transmission. Switching sex partners will make the transmission go faster.

CONCLUSSION

The most affecting factor of HIV/AIDS incidence on West Pati Regency is injecting drug user ($p = 0.002$ OR= 36.0), on the North side is socioeconomic factors ($p = 0.002$ OR= 10.0), on the south side is consistency of using condom ($p = 0.002$ OR= 13.4), on the west is sexual behavior ($p = 0.010$ OR= 12.0). Factors

that do not affecting the incidence of HIV/AIDS on the west Pati Regency are consistency of using condom (p= 0.361 OR= 2.3), socioeconomic factors (p= 0.531 OR= 2,25), prostitution visit (p= 0.361 OR= 2.33), Access to health care services (p= 0.53 OR= 2.25), HIV/AIDS history in the family (p= 1,0 OR= 1.0), on the north are consistency of using condom (p= 0.148 OR= 4.8), prostitution visit (p= 1.0 OR= 1.0), Access to health care services (p= 1.0 OR= 1.0), injecting drug user (p= 1.0 OR= 1.0), on the south are sexual behavior (p= 0.022 OR= 6.6), prostitution visit (p= 1.0 OR= 1.0), Access to health care service (p= 0.66 OR= 0.68), injecting drug user (p= 0.54 OR= 2.16), on the west side are consistency of using condom (p= 0.361 OR= 2.3), Socioeconomic (p= 0.531 OR= 2.25), prostitution visit (p= 0.361 OR= 2.33), access to health care services (p= 0.53 OR= 2.25), HIV/AIDS history in the family (p= 1.0 OR= 1.0).

Consistently using condoms while having sex with other than their legal partner, check whether the condom is leak or not before using it, expired date, carefully open the condom pack to keep the condom from tearing, and putting on the tip of the condom when finished. Have one legal partner to avoid contracting HIV / AIDS. Immediately check into the nearest hospital or health care facility if experiencing symptoms of HIV / AIDS. Conduct an HIV test if the partner is infected with HIV and use a condom every time they have sexual intercourse with the partner to avoid the transmission of HIV / AIDS from a partner. Improving information and education communications (IEC) on the factors that affect the incidence of HIV / AIDS with counseling and posters or leaflets that are easier to access by involving the influential public figures from the community. Make specific policies regarding the existence of street prostitution in order to be able to intervene in HIV prevention such as creating a new prostitution that makes sex workers and customers feel comfortable on using condoms or eliminated prostitution place. Conduct routine and comprehensive HIV / AIDS screening of MARPs for immediate prevention of STI and HIV / AIDS cases as soon as possible. Screening can be done at places key populations are gathered.

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