



The Risk Factors of HIV Incidence in Demak Regency in 2019

Ulfi Angraini[✉], Widya Hary Cahyati, Dyah Rini Indriyanti

Universitas Negeri Semarang, Indonesia

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Abstract

HIV (Human Immunodeficiency Virus) is the virus that causes AIDS (Acquired Immuno Deficiency Syndrome) which attacks the human immune system and weakens the body's ability to fight any disease. One of the districts in Central Java, namely Demak Regency, is one of the areas that are quite high in HIV incidence and every year in that place has increased, therefore the aim of this study is to analyze the factors that influence the incidence of HIV in Demak Regency in 2019. This study used a cross sectional approach which was strengthened by interviews. The populations in this study were people who had tested HIV and were registered at the Demak District Health Office in 2019 and obtained 126 people. In this study, the sample was purposive sampling; with a total are 106 respondents. The instrument in this study was the provision of a questionnaire on sexual behavior, environment and socioeconomic status. After the data is obtained, it is analyzed by bivariate, univariate and multivariate. The results of this study indicate that there is a significant relationship between sexual behavior factors with a P-Value of 0.008, OR = 3.235 and a CI of 1.334 - 7.844. Besides that, socioeconomic status is also a risk factor associated with the HIV incidence with a P-Value of 0.001, OR = 0.253 and a CI of 0.111 - 0.575. Meanwhile, social environmental factors were not related to HIV incidence because the P-Value was 0.102, OR = 0.511 and CI was 0.227 - 1.149. However, the independent variable can only explain by the model 23.1% and there are other factors that influence the risk of HIV incidence.

[✉]Correspondence Address:

Kampus Pascasarjana UNNESJalan Kelud Utara III Semarang,
Indonesia

E-mail: Ulfianggraini07@gmail.com

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INTRODUCTION

Health is something that is needed from every individual at the beginning of life and human's growth. There is a change in mindset about the current healthy paradigm in treating a disease into maintaining or keeping health, so we do not get sick. Therefore, it is necessary to disseminate efforts to understand the community about disease, and the way to prevent it (Kana et al., 2016).

Human Immunodeficiency Virus (HIV) is a virus that attacks the immune system in the body. HIV can gradually develop into Acquired Immune Deficiency Syndrome (AIDS), a disease syndrome that occurs due to the destruction of the immune system. AIDS can lead to mortality in People Living with HIV-AIDS (PLWHA) due to infection with various diseases characterized by opportunistic infections (Jiang et al., 2013).

This occurs because this virus attacks CD4 cells in the immune system which are an important component in fighting infection, resulting in reduced immune substances, a process that occurs about 5-10 years after the body is infected with HIV (Widoyono, 2011). The HIV virus infects helper T lymphocytes via CD4 surface receptors (Cluster of differentiation 4). CD4 is a single chain as a marker of immune system health status. CD4 will bind to MHC II to form a bond which will then bind to the HIV virus so that RNA material will enter into T-helper lymphocytes. The HIV virus is able to convert RNA into DNA so that T helper lymphocytes become damaged which results in a decrease in CD4 and a weakened immune system (Nurmawati et al., 2019). Agistin (2017) in his research explained that the spread of HIV / AIDS is not merely a health problem, but has implications that touch almost all aspects such as human life, politics, economy, social, ethnicity, religion and law and even the real impact, sooner or later.

According to WHO's data (2017), 36,900,000 people in the world are living with HIV / AIDS infection. The countries with the

highest HIV / AIDS infection were Africa 25.700.000 people, Southeast Asia 3.500.000 people, the United States 3.400.000, Europe 3.200.000, West Pacific 1.500.000 people, East Meditirania 350.000 people. Data related to HIV / AIDS in Indonesia can also be said to be worried. Since 2005 to March 2019, the number of reported HIV cases reached 338.363 people, and the number of AIDS cases reported since it was first discovered in 1987 to March 2019 has reached 115.601 people (Directorate General of P2P Ministry of Health RI, 2019). Based on this number, it is estimated that Indonesia will face a tough challenge ending of the AIDS epidemic. It is as a public health threat which is one of the goals of the Sustainable Development Goals (SDG's) with the target's achievement in 2030 by ensuring a healthy life and encouraging the welfare of all people of all ages (Osborn et al., 2015).

Central Java is one of the provinces that is in the fifth position with the highest number of HIV / AIDS cases in Indonesia, and for the last five years it is known that there has been an increase in the number of cases every year. The development of the amount of HIV / AIDS cases in Central Java province in 2014-2018 is known to have always to be a significant increase. Previously, the number of HIV cases in 2014 was 1399 cases in 2018 that had reached 2564 cases. Meanwhile, the number of AIDS cases in 2014 was 1081 cases and it has reached 1854 cases in 2018 with the number of deaths caused by HIV / AIDS is 225 cases (Central Java Province Health Office, 2018).

One of the districts that is included in the highest category of HIV / AIDS cases is Demak District with the cumulative number of HIV / AIDS cases in 2017, 64 cases died and in 2018 458 cases with 70 cases died (Demak Health Office, 2018). The increasing in HIV cases today is very worrying, especially if there is no attention and vigilance in the society. This can threaten the life of the nation's future generations; endanger social and economic development; and national safety. Then, it can affect demographics by decreasing life expectancy (Margawati, 2015).

According to Handayani (2018), the incidence of HIV / AIDS is influenced by behavior such as free-sex, men like men, drugs. Health services such as the availability of infrastructure, the role of health workers. It can from the environmental conditions such as the influence of peers, the role of the family, the role of the community, government policies, and race. Besides, on genetics can be influenced by things such as breastfeeding and normal delivery. Behavior is very important in carrying out everything, especially in the case of HIV, according to Notoadmojo (2010), a person's behavior can be influenced from within and from outside of himself. The factors that influence or shape human behaviors are called determinants. In addition to behavior, the stigma against people living with HIV / AIDS because the family feels ashamed if they find out that one of the family members is an HIV sufferer so that PLWHA and it is also excluded from the family. Fear of being treated differently makes it difficult for PLWHA to bridge themselves with others and s/he is afraid to share their experiences, even to declare themselves sick (Sohn, 2012).

Apart from sexual behavior and social environment factors, there are socioeconomic factors. In order to fill their needs, there are not a few certain groups of people who practice deviating religious norms, moral norms and violating laws such as practicing prostitution or providing a place or means of prostitution practice to fill the demands of their life needs (Suparjo, 2016).

Socioeconomic status is related to a person's ability to earn income in order to fill the needs of life, the ability of people to earn income will affect the quality of their life. Previous research states that work status is related to the quality of life of PLWHA (Kusuma, 2011; da Costa, 2014; Jadhav, 2017).

The factors that influence the incidence of HIV / AIDS include sexual behavior. Other factors that may be at risk of HIV / AIDS are the social environment and socioeconomic status. Therefore, the risk factors for the HIV / AIDS incidence in Demak

Regency, Central Java in 2019 will be analyzed in this study.

METHOD

This study used a cross sectional approach. The populations in this study were people who had tested HIV in Demak district, Central Java in 2019. The populations are 126 with details of 49 HIV positive people and 77 people who had tested HIV but the results were negative. In addition, the sample in this study used purposive sampling with respondents who were willing to be interviewed and at the age of 18-55 years, therefore the sample in this study were 106 people.

The dependent variable in this study was the risk of HIV incidence, while the dependent variable was sexual behavior, the role of the social and economic environment. In this study, it was using primary data on the independent variable, as well as secondary data, namely the risk of HIV incidence taken from the Demak district office.

Before collecting the data, the Ethical Clearance was conducted at *Universitas Negeri Semarang*. The techniques used in data collection in this study were questionnaires and interviews and data collection from the health department. The data analysis technique in this study used univariate analysis, bivariate analysis using the chi square test and multivariate analysis using logistic regression.

RESULTS AND DISCUSSION

The results of the univariate research conducted in Demak district, Central Java in 2019 on the risk of HIV incidence with the samples were 106 people who had tested HIV and were recorded at the health office are presented in Table 1.

Table 1 Description of Risk Factors of HIV Incidence in Demak Regency in 2020

Type	Frequency	Percentage (%)
HIV Positif	42	39.6

Negatif	64	60.4
Sexual Behaviour		
Risk	67	63.2
Non-risk	39	36.8
Social Environment		
Risk	68	64.2
Non-risk	38	35.8
Economics Level		
High	59	55.7
Low	47	44.3

with a frequency almost 40% for HIV positive. From the univariate result data, it can be seen that sexual behavior and sexual environment are at risk which causes a high population to undergo HIV incidence testing. Meanwhile, the economic status in Demak Regency in this study is classified as high with the criteria of income exceeding the minimum wage for work in Demak Regency.

Whereas, in the bivariate results by using the chi square test which indicates the relationship between sexual behavior, social environment, and economy to HIV risk is shown in Table 2:

From Table 1, it is found that the HIV positive sample is less than the negative one

Table 2. Chi Square Test Results of HIV's Risk Factors in Demak Regency in 2019

Type	HIV		P Value	OR (95% CI)
	Positif	Negatif		
Sexual Behaviour				
Risk	33	34	0.008	3.235 (1.334 – 7.844)
Non-risk	9	30		
Social Environment				
Risk	23	45	0.102	0,511 (0.227 – 1.149)
Non-risk	19	19		
Economics Level				
High	15	44	0.001	0,253 (0.111 – 0.575)
Low	27	20		

In table 2, the results of the research to see the relation between sexual behavior and HIV risk in Demak district in 2019 that was tested by using the *chi-square* test found that the P-value was 0.008, which means that it was less than the significance value applied to this study, which was 0.05. This means that there is a relation between sexual behavior and HIV incidence in Demak district. There is a relation; if it is seen from the statistical risk, the sexual

behavior of 33 HIV positive people had a greater percentage than 34 people whose

risky sexual behavior but negative. It is because the sample of this study was more HIV negative.

In the results of the study which showed a significant relationship between sexual behavior and the risk of HIV incidence, according to the research by Arfiyeni (2019) which produced a bivariate analysis using the *chi square* test, it was found that there was a

significant relation between economic status and sexual behavior. It is because sexual behavior is inseparable from good knowledge to determine which ones are good or bad at the risk of HIV, according to research from Zarani (2015), the lack of knowledge one can be risk in sexual behavior is much than those who have good knowledge. There is a relation between sexual behavior and the risk of HIV incidence also according to research by Zeth (2010) which resulted in a high incidence of HIV / AIDS because the lack of public knowledge about risk factors for HIV / AIDS, free sex behavior, consumption of hard drinks, drugs, as well as the decline in religious values. In addition, HIV transmission occurs through needles of used HIV / AIDS sufferers, medical equipment, narcotics, blood transfusions, and placental connections between the fetus and the mother with HIV infection (Demartoto, 2019).

Still on the table 2, the results of the *chi square* analysis on the social environment obtained a P-value is 0.102, it means more than a significant value of 0.05, so it can be concluded that there is no relation between the social environment and the risk of HIV incidence. If it is analyzed from the distribution of data, the environment at risk is still a lot of people who are negative in HIV test results

The results show that there is no relation between the social environment and the HIV incidence because people with deviant behavior will not tell about what was done to the surrounding environment. This is because people think that PLWHA are people who have bad behavior, such as sex workers, drug users, and homosexuals. This makes people reject and hate that community (Shaluhiah, 2015). Not only that, according to Anggina (2019) stigma and discrimination against people living with HIV / AIDS are challenges, if it is unsolved. It has the potential becomes an obstacle in efforts to solve HIV and AIDS problems. Discrimination happened by people living with

HIV / AIDS both in the health service unit, workplace, family environment and in the general public must be a priority for HIV and AIDS prevention efforts. Therefore, the existence of discrimination creates openness and support for PLWHA, making it unrelated to the risk of HIV incidence due to environmental anxiety.

In table 2, it can be seen that the results of the relation between the economic status of respondents and the risk of HIV show that the results of the *chi square* analysis showed a P-value of 0.001, which means that it is less than the significant value of 0.05. Thus, it can be concluded that there is a relation between economic status and HIV risk in Demak district in 2019.

The results of the economic relation and the significant risk of HIV incidence, it is because there are people with low economies who have sexual relations with women in four prostitutes who often have sexual intercourse with partners who change in a day in 3 times. This is in accordance with Harnanti's (2018) research states that one of the HIV incident is changing partners during sex. Not only that, Nasution's research (2019) shows that economic inequality can make a person engage in deviant behavior, an economic level that is below average, will cause someone to do anything that can bring additional income such as being a female commercial sex worker. In addition, transmission from mother to child, also known as vertical transmission that is the most common cause of HIV infection in children, often occurring during pregnancy, birth or breastfeeding (Wightman, 2016). Hence, the environment has not contaminated children who got the HIV. In short, the results of the multivariate test with logistic regression are shown in Table 3:

Tabel 3. The Summary of Multiple Logistics Regression Tests

Variables	B	Wald	P	OR	95% CI
Sexual Behaviour	1.208	6.293	0.008	3.235	(1.334 – 7.844)
Social Environment	-0.507	1.264	0.102	0.511	(0.227 – 1.149)
Economics Level	-1,378	9.756	0.001	0.253	(0.111 – 0.575)
Constant	-0,185	0.128			
Log likelihood = 122.536					
Nagelkerke R ² = 23.1%					

From table 3, it can be seen that the greatest influence is on social behavior. Furthermore, the Nagelkerke R² value of 23.1% means that the independent variable explains the model by 23.1%. In other words, there are still variables that have not been studied that affect HIV, namely 76.9%.

The results showed that of the three independent variables (sexual behavior, the social environment, socioeconomic level), the most related statistically was socioeconomic status ($p = 0.001$). It is because men often change partners in relatively inexpensive places. Thus, they do not think about checking whether they have a disease or not due to economic pressure. This is supported by Rosenstock (2011) that states the perception of the willingness or severity of a disease causes of a person to have an attitude to do a treatment effort. To prevent the HIV incidence, the Health Belief Model (HBM) explains that the possibility of an individual taking preventive action depends on two health beliefs or assessments, namely the perceived threat of pain and consideration of advantages or disadvantages, threatening, seriousness, and consideration of the advantages and disadvantages of the recommended behavior (Pujiyanti, 2010). In addition, the results show that low family income causes low levels of education and difficulty accessing information about HIV / AIDS (Tasa et al., 2016). Meanwhile, research conducted by Nasution et al (2019) shows that economic inequality can make a person perform deviant behavior. Besides, the economics levels that are below

average will cause someone to do whatever can be the additional income.

CONCLUSION

The results showed that the risk factors of HIV incidence that had been studied were influenced by sexual behavior and economics level. While the social environment did not affect the risk of HIV incidence in Demak district in 2019. However, the variables studied could explain only the model in 23.1%. Besides, there are others factors that influence the risk of HIV incidence.

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