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Risk Factors for Human Immunodeficiency Virus: Blood Transfusion, Injecting Drug Use, Piercing, and Tatto in Indonesia

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Abstract

BACKGROUND*:* Human immunodeficiency virus (HIV) is still a public health problem worldwide. HIV transmission occurs through several modes of transmission. One of the intermediaries for transmission is through blood transfusions, IDU (injecting drug use) with sharing needles or not (sterile), especially among injecting drug users, as well as piercing and tattoos.

AIM: The purpose of the study was to analyze risk factors for HIV: Blood transfusion, IDU, piercing, and tatto in Indonesia.

METHODS: The research design was cross-sectional. The population of all individuals with HIV who are included in the blood transfusion, IDU, piercing, and tattoo users at the Kompeda City Surabaya Foundation is 183 people with 100 respondence using simple random sampling technique. The instrument used is a questionnaire. The data were analyzed by double linear regression test.

RESULTS: The results of multivariate analysis showed that blood transfusion (p = 0.01), injecting drug use (p = 0.00), piercing (p = 0.01), and tattoo (p = 0.01) factors significantly influenced the incidence of HIV. R Square of the five factors is 0.000.

CONCLUSION: Risk factors such as blood transfusions, injecting drug use (IDU), piercings, and tattoos are factors that cause HIV. Preventive efforts can be made to prevent HIV risk factors through education by implementing the health promotion model about HIV/AIDS as well as prevention and transmission that can suppress the spread of HIV/AIDS.

Introduction

In the modern era of globalization, the era and the sophistication of technology, the more widespread the application of lifestyle by humans in everyday life. In another sense, lifestyle can have a positive or negative influence on those who run it; one of the negative impacts in modern circles today is drug use among teenagers or adults, including psychocotherapeutic abuse using injecting drug use (IDU), the use of risky needles as well found in the use of tattoos and piercing. This is quite a very negative impact on the current generation, because the misuse of unsterilized needles can cause serious impacts for its users, one of which is exposure to infectious diseases that can cause the spread of the HIV virus (Humam Immunodeficiency Virus) or AIDS (Acquired Immunodeficiency Virus) [1].

HIV can spread rapidly once it enters a community of injecting drug users. The IDU population (IDU) is estimated to be 0.2–0.5% of the world's population and more than 45% are newly infected with HIV. In Eastern European countries, it is 40% and 36% in the Philippines [2]. The prevalence of HIV in people who inject drugs is very high among the general population. The prevalence of IDU in the survey of IDU in the world is very high in South Africa at 12.4% and 42.9% in Kenya, due to the increasing use of heroin in sub-Saharan Africa [3], [4]. Based on the 2019 SIHA report in Indonesia, the group at risk occupies a positive percentage of HIV, by taking an HIV test (12,119) people, 409 people are found to be HIV positive with a percentage (92.19%) found with IDU cases (31.37%), have tattoos (33.1%) and have piercings (29.2%). The percentage of HIV cases found in July-September 2020 based on risk factors for homosexuals 26.5%, heterosexuals 17.3%, and injection needle use 0.4%. The presentation of HIV cases was reported in the population groups of FSW 3.9%, MSM 25.2%, waria 1.2%, IDUs 0.4%, WBP 1.2%, and pregnant women 16.5% [5]. The number of reported AIDS cases since December 2019 is 1254 people and 9,981 HIV cases. From the estimation results, it is assessed that the number of people living with HIV/AIDS (PLWHA) in East Java reaches 63,581 people and is designated as an area with concentrated HIV prevalence along with (five) other provinces, namely DKI Jakarta, Papua, Bali, Riau, and West Java. The scale of the HIV epidemic is clustered, with a consistent prevalence of 5% in certain subpopulations (high-risk

groups), such as the injecting drug user (IDU) group (in multiyear observations, species-specific measurement). Heterosexual cases (79.5%) appeared to be the highest risk factor in the transmission of HIV/AIDS cases, followed by injecting drug use (IDU) with 1713 (11.8%) cases and tattoos, according to the survey report. There were 558 cases (3.9%), followed by piercing users. 5.4%). prevalence HIV patients are the most in Lumajang as many as 3385 people (45.1%), Surabaya 2321 people (36.3%), and Banyuwangi as many as 1.12 people (19.1%) [6], [7]. Based on data obtained from Kompeda of Surabaya, it was obtained data from foundation officers that from December 2020, the total number of HIV sufferers was 83 people, namely, 37 men (44.5%) and 46 women (55.4%) with the causative factor being 30 cases of blood transfusion. Prevalence HIV based on blood transfusion 30 patients (36.1%), IDU 38 patients (45.8%), tatto 12 patients (14.4%) and piercing 3 patients (2.6%).

HIV transmission factors occur when the exchange of body fluids with an HIV-infected person. One of the intermediaries for transmission is using used syringes that are alternately or not (sterile), this risk is high, especially among injecting drug users. Needles that have been used by other people will leave blood residue, if the person is infected with HIV, the blood containing the virus left on the needle can move to the body of the next needle user through the injection wound. The HIV virus can in fact live in a syringe for up to 42 days after first contact depending on temperature and other factors [8], [9].

The researcher's solution in this study was to provide informative and educative by applying health promotion model (HPM) to respondents related to HIV/AIDS in health promotion, this was done with the aim of increasing respondents' awareness regarding the prevention and transmission of HIV/AIDS. Based on the importance of HIV prevention, the authors aimed to evaluate HR risk factors for HIV: blood transfusion, injecting drug use (IDU), piercing, and tattoos in Indonesia."

Materials and Methods

The research design used in this study is analytic because it aims to find the relationship between two variables and was cross-sectional, which is a type of research that emphasizes the measurement time or observation of independent and dependent variables only once at a time [10]. This study aims to analyze the Risk factors for HIV: blood transfusion, injecting drug use (IDU), piercing, and tattooing in Indonesia. This research has been passed the ethics test by the Ethics Commission of Universitas Nahdlatul Ulama Surabaya No 178/EC/KEPK/UNUSA/2021.

One hundred individuals positive for HIV that addressed Kompeda Foundation, Surabaya, Indonesia, between January to August 2022 were included in the tested group. The instrument used is questionnaire. Data analysis is using double linear regression test.

Results

The obtained results show that 71% of the tested subjects are males with predominance of young ages (15–19 years) (Table 1). The demographic results show that 51% have secondary high school education level, 37% are employed, and 55% have a single status.

Table 1: Demographic parameters of HIV-infected subjects (n = 100)

No	Variable	n (%)
1.	Age (years)	
	<14	8 (8)
	15–19	58 (58)
	20–24	9 (9)
	More than 25	25 (25)
2.	Gender	
	Male	71 (71)
	Female	29 (29)
3.	Level of education	
	Elementary school	11 (11)
	Primary high school	38 (38)
	Secondary high school	51 (51)
4.	Employee	
	Employee	37 (37)
	Unemployee	6 (63)
5.	Marital status	
	Single	55 (55)
	Married	45 (45)

Based on Table 2, the results obtained from the analysis with the statistical double linear regression test showed that blood transfusion (p = 0.01), IDU (p = 0.00), piercing (p = 0.01), and tattoo (p = 0.01) factors significantly influenced the incidence of HIV. R Square of the five factors is 0.000.

Table 2: Risk factors for HIV: blood transfusion, injecting drug use (IDU), piercing, and tatto

Variable	p	r-square
Blood transfusion	0.01	0.000
Injecting drug use (IDU)	0.00	
Piercing	0.01	
Tatto	0.01	

Discussion

The results showed that the risk factors for HIV were blood transfusion, injecting drug use (IDU), piercing, and tattooing. This is in line with Tun's research (2015), IDUs comprise a group of individuals who use illegal drugs (narcotics) by being injected through a syringe into the bloodstream [10]. The narcotics used are included in the type of narcotics Group 1, namely heroin, amphetamines, and cocaine, at low levels known

as putaw which is the most consumed by injection drug users (IDU) [10], [11], [12].

According to Sayood, *et al*., (2022) Humam Immunodeficiency Virus (HIV) is a virus that can infect and damage the immune system (immunity) in the human body. HIV attacks key components of the immune system such as macrophages and CD4 lymphocytes. One of the increased risks of HIV transmission through the use of injecting needles, which is often associated with several factors, namely, the duration of injection drug use and sharing needles, community viral load (the average amount of HIV in the blood in the injecting population) [13], [14], [15]. Increasing onsidering that drug users often have other risky behaviors such as unprotected anal and vaginal sex, tattoos, and piercings. Lazuardi, *et al*., (2012) explain that the increase in new cases of Human Immunodeficiency Virus (HIV) caused by injecting drug users (IDUs) is quite large. HIV can spread rapidly among injecting drug users and can increase HIV prevalence. There are several factors that cause IDUs to become one of the populations that have a high risk of HIV transmission, namely, the behavior of using used syringes, and using contaminated or contaminated equipment [16].

Based on Susilowati's research (2018), it shows the proportion of HIV and AIDS incidence in the case group of respondents with injecting drug or IDU status (48.1%) and control group respondents who use injecting drugs (22.5%) while the proportion of cases from respondents with the status of not using injection drugs (51.9%). The results of research with Chi-square tests show, it is known that there is an effect of injecting drug use status on the incidence of HIV and AIDS (OR 3192, 95% C1 1574 < 6473, Value 0.0001). Shows meaning HIV based on IDU as a cause of HIV. Epidemiologically, the status of injecting drug use has a 3.192 times greater risk of the incidence of HIV and AIDS [17].

Today's teenagers often follow the latest trends so as not to be called outdated, many young people have made tattoos and piercings a lifestyle. In the past, tattoos were commonly used by men and painted on body parts such as hands, feet, or back, but now tattoos have become a trend, women's make up. This needs to be watched out for considering that lifestyle includes a lifestyle that is at high risk of being infected with HIV [18], [19].

According to LeBlanc *et al.*, (2012) tattoo which is body painting is a product of drawing activities on the skin of the body using a needle-like tool or sharpened object made of flora. The picture is decorated with colorful pigments [20]. According to Awofeso (2010), Tattooing is believed to be a symbol and a means to reveal the rulers of nature, a form of respect for ancestors, believed to be able to ward off evil spirits, and ward off disease or the spirit of death as a form of self-expression, identity, and self-actualization as a form of rebellious attitude toward social values that exist in society, or a group as well as initiation of a phase of life that is considered capable of overcoming periods of illness and grief [21], [22].

Piercing is an act of inserting objects into the body using tools such as needles or more in the form of a gun, if in the past body piercing was used as a cultural or traditional ritual, now piercing is a lifestyle (life style) for its users, they use it anywhere they want, the most common is in the ear. Not a few uses on the face, such as eyebrows, nostrils, lips, chin, and tongue area and even piercings on the forehead, bridge of the nose [23], [24].

According to Larney (2010), the use of contaminated needles in tattooing can be a risk factor for HIV transmission, the number of tattoos and the size of the tattoo can also affect the transmission of pathogens, the more and wider a tattoo will increase the risk of contracting the disease because the manufacturing process requires injection. This results in a higher frequency of contaminated needles being exposed to the blood [25], [26].

In addition to tattoos, piercing is also a teenager's lifestyle that has a significant influence on HIV infection. As with tattoos, the principle of transmission of pathogens in the piercing process is through the needle used. The cleanliness of the needles used in the process is very important. Piercing is a body art activity that is more often done with the aim of using jewelry. The piercing procedure is also easier than tattooing so it can be done anywhere and by anyone. This makes it difficult to control the spread of pathogens through the piercing process [27]. Based on research by Naully and Romlah (2018), among them, there are teenagers with tattoos and body piercing. The majority of these teenagers have more than 1 tattoo/piercing and often move between tattoo/piercing studios, not even a few who tattoo or pierce their bodies with the help of friends and makeshift tools. The results showed that there were 16 respondents (10%) tattoo users with HIV (6.2%) with a value of (0.1347) and 25 respondents (5.8%) of piercing users with HIV (8.3%) with a value of (0.1119). The statistical analysis results show that the use of tattoos and piercings is one of the adolescent lifestyles that have a significant effect on HIV infection [28].

In social life, drug behavior using injection needles, tattoos, and piercing is increasingly rampant, the importance of awareness and education of medical personnel and environmental sympathies about the dangers of HIV/AIDS. By providing HPM related to HIV/AIDS and inviting someone to behave well and realize how important their health status is to prevent HIV/AIDS transmission [29]. A person with good behavior will be more likely to take advantage of available health services to ensure that his health is in good condition and if there is a problem with his health, prevention and treatment will be carried out as soon as possible [30].

The use of needles without proper sterilization such as tattoos can also theoretically transmit HIV, HIV transmission in tattoos is associated with the use of needles, materials, and other tattoo-making tools

such as tattoo-making tools that are contaminated with blood from previously tattooed people. The risk of this transmission increases in people who have many tattoos on their bodies and in people who are tattooed by unprofessional tattooists. One needle prick from an HIV-infected person can cause HIV transmission by 0.2–0.4%. [31], [32].

Theoretically, HIV can also be transmitted through users of shared and unsterile piercing tools. Research in Montreal, Canada, on adolescent girls (14–25 years) mentions a history of using tattoos 1.8 times the risk and the use of piercing 1.6 times the risk of HIV infection compared to those who do not use tattoos and piercings. [24], [33], [34], [35], [36].

Human immunodeficiency virus (HIV) risk factors: Blood transfusions, injecting drug use (IDU), piercings, and tattoos, in addition young boys were more prone to tattooing and piercing and hence being infected, or that the single status is yet again a factor.

Conclusion

Risk factors that have been shown to have an effect on incidence of HIV and AIDS in this study are blood transfusion, injecting drug use (IDU), piercing, and tatto. Preventive efforts can be made to prevent risk factors for HIV through education with the application of HPM regarding HIV/AIDS and prevention and transmission that can suppress the spread of HIV/AIDS.

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