



Analysis of Risk Factors for Commercial Sex Workers and the Prevalence of the Human Immunodeficiency Virus (HIV)

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Abstract

Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) are one of the biggest health problems in the 21st century. HIV/AIDS cases continue to soar, one of which is due to the practice of prostitution because commercial sex workers (CSW) are a group at high risk of contracting HIV/AIDS. Dolly, the largest localization at Surabaya, has already been closed by the government to decrease the transmission of HIV. The research method is based on laboratory examination using the Rapid Test Immunochromatography method, with the subject of examination being women who live around Dolly localization. This method has the advantages of fast inspection time (only around 15-30 minutes), is easy to do, do not use special tools, and is quite sensitive. The number of women who were HIV positive was 1.4%, and the numbers who were HIV negative was 98.6%. The association between the risk variables for CSWs and HIV status was then determined using the Spearman correlation test. Statistical analyses revealed a significant relationship between CSW status and HIV prevalence with a significance value of 0.05 ($p=0.025$; $CI=95\%$). Since the correlation coefficient is positive, a rise in CSWs' active status can also increase HIV prevalence.

Introduction

In general, the incidence of AIDS and the Human Immunodeficiency Virus (HIV) has grown during the past ten years. According to Ministry of Health data, 543,100 persons with HIV as of March 2022. Based on information and reports from 2010 to March 2022, East Java has 71,909 cases, making it one of the five provinces with the highest number of HIV infections (Fitri Anis Annisa & Azinar, 2021). According to Central Statistics Agency figures for 2019, HIV cases are more prevalent in the city of Surabaya (Suherwan, 2018). It is so that prostitution by commercial sex workers can take place at a venue for entertainment in Surabaya's Dolly neighborhood. One of the key contributors to the spread of HIV is this circumstance (Naully & Romlah, 2018). Previous studies suggested that the pattern of condom usage in the

Surabaya dolly localization region enhanced HIV prevalence (Miftahul Khairoh, 2016). Condom usage is one basic preventive measure that may be performed, but the major safeguard that should be implemented is refraining from having unrestricted intercourse (Merati et al., 2021). There's a strong correlation between that region's free sex practices and the use of this condom.

The government has now formally ended dolly localization. Improvements are being made to the Dolly neighborhood as part of ongoing efforts to make it better, including efforts to make the region's residents HIV-free. It is the decision on sustainable development objectives made as a consequence of the agreement of 193 United Nations members to end the HIV/AIDS epidemic in 2030, known as the Sustainable Development Goals (SDGs) (Shannon et al.,

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2018). Although the government has declared Dolly's localized area to be closed, there are still active types of clandestine prostitution there. Prostitution is conducted at boarding homes and a few inns outside of the localized area, as opposed to before, when it was done openly. Because HIV/AIDS-infected prostitutes had the ability to covert phenomenon of prostitution is genuinely problematic and raises additional concerns from the standpoint of HIV/AIDS prevention (Daulay, 2018). The outcomes of the scenario investigation showed that many local people exploited as free boarding houses and locations for illegal prostitution in the Dolly localization region. Like two sides of a coin, the Dolly region closure policy has rendered HIV transmission and spread uncontrollably since the periodic monitoring program has diminished, it has covered the condition of the Dolly area, which is presently closed, but it is not precisely the case.

Economic and sociocultural variables are also significant in this situation. It can contribute to an increase in HIV incidence in addition to the risk factor of working in commercial sex. Previous studies showed that the biggest influences on someone's decision to choose a career as a commercial sex worker are economic and sociocultural variables (Frank et al., 2019). Long-term research on these variables yields findings that are closely correlated with the prevalence of HIV. In contrast to these risk factors, there are a number of additional variables that might result in an increase in HIV prevalence, such as CSWs' active status and their length of time as prostitutes. Based on this context, researchers worked to determine the HIV prevalence status in the new settlement region and to assess the etiological variables' potential to enhance the prevalence of the virus as well as their potential carrying capacity.

Method

The University of Surabaya Health Research Ethics Committee has approved this study as ethically acceptable and assigned it registration number 58/KE/XI/2022. This study has a cross-sectional design and is an observational analytical study. HIV status was the dependent variable in this study; the independent variables were prostitution risk

factors (FR), CSW status (ST) (active or retired), CSW tenure (LM), age at first sex (HS), and frequency of routine healthcare visits (FRP). By capillary blood drawn from the fingertip, an HIV fast screening kit is used to check a patient's HIV status. If two stripes emerge in the test, the subject is diagnosed as HIV positive, and the opposite is true. To measure the independent variables, a guided questionnaire was used, which the study participants completed with the help of the research team. Numerous question items in the survey included open, scaled, and closed response options. It is allocated to the FR and ST variables for questions with closed answer types, the FRP variable for questions with scaled response types, and the HS and LM variables for questions with open answer types.

All women of adult age in the Put Jaya Village region made up the study's population (18-65 years). This study employed a non-probability selection strategy with a purposive sampling method, which implies that participants were chosen based on traits connected to previously known population traits. In this instance, the risk factors for becoming a prostitute. On November 10, 2022, data collection was done with 72 individuals. The collected data were tabulated and coded by the research requirements, and the non-parametric Spearman correlation test was used to analyze the data using the SPSS v.25 programs.

Result and Discussion

After coding the results of completing the questionnaire and checking for HIV status, the data analysis procedure was carried out. The number of women who were HIV positive was 1.4%, and the number who were HIV negative was 98.6%, according to the results of the quick screening method. According to the questionnaire's findings, out of 72 respondents, 55.5% of the women had CSW status, while 44.4% did not. 62.5% of the 55.5% of women who engage in prostitution are still in business, while 37.5% are retired. The average length of time as a prostitute is 6.7 ± 4.71 years, and the average age at which you had your first sexual encounter is 19.5 ± 4.02 years. According to data, 10.0% of people have their HIV checked more than eight times per year, 15.0% have their HIV

checked four to four times per year, 20.0% have their HIV checked once every two to three months, and 55.0% have their HIV checked just once per year. Table 1 provides an exhaustive summary of the inspection findings.

TABLE 1. General characteristics of research subjects (personal sources)

	N	Mean±SD
HIV Status:	72	
- Positive	1	
- Negative	71	
Prostitution Risk Factors:	72	
- Yes	40	
- No	32	
CSW Status:	40	
- Active	25	
- Retired	15	
CSW Tenue	40	6.7±4.71
Age at First Sex	40	19.5±4.02
Frequency of Routine Healthcare Visits:	40	
->8 times/year	4	
-5-8 times/year	6	
-2-4 times/year	8	
-≤ 1 time/year	22	

Source: Primary data, 2022

The association between the risk variables for CSWs and HIV status was then determined using statistical analysis of the study data that had been gathered. Utilizing the Spearman correlation test, statistical analyses revealed a significant relationship between CSW status and HIV prevalence with a significance value of 0.05 ($p=0.025$; CI=95%). Since the correlation coefficient is positive, a rise in CSWs' active status can also increase HIV prevalence. The risk factors for CSWs ($p=0.187$; CI=95%), duration of being a CSW ($p=0.128$; CI=95%), age at first sexual encounter ($p=0.221$; CI=95%), and frequency of medical visits ($p=0.180$; CI=95%) were all significant at $p>0.05$, but the findings of other factor tests were not. A complete description of the statistical test results in full can be seen in Table 2.

TABLE 2. Analysis of the association between CSW risk variables and HIV prevalence (personal sources)

		HIV
Prostitution Risk Factors	Correlation coefficient	0.106
	Significance	0.187
	N	72
CSW Status	Correlation coefficient	0.231
	Significance	0.025*
	N	72
CSW Tenue	Correlation coefficient	0.266
	Significance	0.128
	N	72
Age at First Sex	Correlation coefficient	0.105
	Significance	0.221
	N	72
Frequency of Routine Healthcare Visits	Correlation coefficient	0.119
	Significance	0.180
	N	72

Source: Primary data, 2022

According to data analysis findings, there is only a positive link between the prevalence of HIV and the active status of CSWs. There will undoubtedly be a rise in HIV prevalence in the region since more CSWs are working there. It is consistent with other research from several different nations that have shown that having CSWs in a community might raise the risk factors for HIV transmission. The prevalence of HIV rises as a result of CSWs' active status, according to research on prostitution hotspots in Vietnam (Zhang et al., 2020). According to studies, there are also comparable situations in several countries like Russia, Iran, Mexico, Lesotho, and China (Girchenko et al., 2015) (Shokoohi et al., 2016) (Gaines et al., 2013) (Grosso et al., 2018) (Huang et al., 2012). Because it is well known that CSWs may provide sex services up to ten times each day, the transmission that they carry out is enormous. CSWs may also choose to receive increased payment for not using condoms (Nhurod et al., 2010). CSWs with lower income may compromise their ability to decline risky sexual practices. They may be compromise not to use condoms in order to get more clients. CSWs with lower socioeconomic status are more likely to meet partners from lower socioeconomic status, which was reported to be a strong predictor of HIV seropositivity (Abdella et al., 2022). Previous studies claimed that immunopathogenesis, which takes place in tissue mucosa, is what causes alterations in immunity when penile-vaginal induction occurs alternatively and in large numbers (Mohammadi et al., 2022). Continuous penile-vaginal induction results in extensive alterations in the tissue mucosa, leading to inflammation there. Sexual intercourse may easily damage wall of an altered genital tract to facilitate entry of HIV into the body (Abdella et al., 2022). Due to the body's decreased immunity caused by inflammation, the virus uses this state to reproduce (Petrova et al., 2013).

Other risk variables, such as the duration of prostitution, the age at which a person has their first sexual encounter, and visiting a doctor, do not appear to be related to the incidence of HIV. Although this did not occur in our study, a positive correlation coefficient suggests that these variables may also affect changes in HIV

prevalence status. Previous research has shown that variables such as the length of time spent as a prostitute, lack of access to health screenings, level of education, and use of drug-injecting needles might increase the spread of infection (Lopez-Corbeto et al., 2022a)(Lopez-Corbeto et al., 2022b). According to further research, age affects how an illness spreads (Pérez-Morente et al., 2017). The maturity of a person's decision-making is influenced by each of these variables. Being a prostitute is a choice, but maturity defines a preventative lifestyle, starting with being aware of the hazards associated with using contraception and scheduling regular checkups with the doctor for health screenings. According to earlier research, using preventative measures will further decrease the spread of illness and lower the risk of unintended pregnancy (Folch et al., 2014).

CSWs face a higher burden of HIV infection and also face systematic barriers to accessing appropriate health services (Wilson, 2015). The role of community leaders and also religious leaders can influence people's behavior so CSWs can be accepted in society and access better health services (Tuba et al., 2023). There is a need to expand HIV testing around CSWs and intervention strategy such as preexposure prophylaxis to reduce the transmission of HIV (Nsanzimana et al., 2020).

Conclusion

A significant relationship was found between the status of commercial sex workers and HIV status. More education is needed for commercial sex workers so they don't get infected or infect HIV by always using condoms. Commercial sex workers need to learn how to negotiate condom use with their clients and increase diagnostic testing of HIV.

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