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UNDERSTANDING HEALTH RISK ASSESSMENT IN FEMALE SEX WORKERS (FSW) AND ITS RELATIONSHIP WITH THE FREQUENCY OF SEXUAL TRANSACTIONS

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ABSTRACT

Female sex workers carry out sexual transactions that pose a high risk to their health. They experience a high risk of health problems, especially transmission of sexually transmitted infections. There are various factors that female sex workers (FSW) carry out sexual transactions with frequent frequency, such as poverty, gender inequality, and limited access to productive assets. This study aims to determine the associated between the frequency of sex transactions and health risks. This research uses a quantitative approach with a cross-sectional design. The population of this study was all female sexual workers (FSW), with a sample size of 162 taken by *purposive sampling*. The results of this study show that the majority of FSWs have had a sexual transaction frequency more than two times in the last week, amounting to 79.5%, with a prevalence of high health risks of 75.9%. Based on the multivariate test, it is known that the frequency of sexual transactions is associated with health risks after controlling for the variables age and length of time as a FSW with an Adjusted Odds Ratio of 3.467 (1.415-8.494). Health risks FSW who engage in sexual transactions more than two times have a risk of 3.467 (1.415-8.494) times experiencing high health risks compared to female sex workers who engage in sexual transactions less than two times after controlling for age and length of time as female sex workers. When carrying out work in sexual exploration, FSW should continue to use sexual protective equipment and carry out regular health checks, especially for sexually transmitted infections.

Keywords: female sexual workers, sexual transactions, sexually infections, HIV

Introduction

Female sex workers are one of the key population groups at high risk of contracting HIV. UNAIDS (United Nations Programme on HIV/AIDS) data shows that almost 2 million new people are infected with HIV every year, and this also includes women. The increased risk of HIV in women is mostly those who engage in sexual transactions in exchange for material support and other benefits.[1,2] Women who choose work as female workers are influenced by poverty, especially in poor countries, gender inequality and limited access to productive assets.[3,4]

Extreme poverty in women appears to be closely linked to infectious diseases and risky sexual behavior.[5] Women are the group most frequently affected by Sexually Transmitted Infections (STI) and HIV/AIDS and are the main cause of death for women aged 15-44 years throughout the world. Young women aged 15-24 years are three times more likely to contract HIV than men and account for 31% of all new HIV infections.[1]

The burden of HIV among female sex workers globally is enormous. HIV transmission is influenced by various factors such as macrostructure, biology, and individual. Other factors can also influence HIV transmission, such as migration, stigma, criminalizing laws, violence, access to condoms, HIV testing, partner factors, and sexual networks.[6] Induces health risks in this group, such as illness due to sexually transmitted infections, unwanted pregnancies, and even death due to unsafe abortion behavior.[7,8]

The incidence of unintended pregnancy among female sex workers in low, and middle-income countries is estimated at 27 per 100 person-years. Research shows that unintended pregnancies in female sex workers can lead to sex work-related complications, including loss of clients, violence from partners, and financial burdens.[9,10] Sex workers face major barriers in accessing health and social services. Other problems that arise experienced by female sex workers are stigma, criminalization, giving birth to stillborn babies, low birth weight, prematurity, neonatal abstinence syndrome, behavioral, and emotional problems, and discrimination in schools.[7,11,12]

Female sex workers in low- and middle-class countries face 12 times higher health risks and infections compared to women of the same age who do not engage in sex work. This increased risk is related to the behavior of drinking alcohol before engaging in sexual transactions, financial dependence and indications of gender-based power dynamics because men remain dominant.[13,14] Selling or exchanging sex was also significantly associated with drug use and was particularly associated with sex-related drugs, including methamphetamine, poppers, and Viagra.[15,16]

Palembang City is one of the large cities in South Sumatra with a prevalence of sexually transmitted infections in female sexual workers of 0.7%. In 2021-2022, data on female sexual workers in the city of Palembang is 3153 people from the outreach of the Intan Maharani Foundation, while the estimated data for female sexual workers in 2023 is 3053.[17] The frequency of sexual transactions and sexual commercialization increases health risks and violence for both male

and female sexual workers. Adolescent boys and young men who have a history of transactional sex are significantly more likely to experience violent victimization than those who do not have a history of transactional sex, especially intimate partner violence.[18] Transactional sex is often stigmatized in society because it is still taboo and poses risks to women's health. Female sexual workers are a risk group who have health problems due to their sexual activities, therefore related research needs to be carried out.This research explains in detail the health risks of female sexual workers and the frequency of sexual transactions carried out.

Methods

This research uses a quantitative approach with a cross-sectional design. This research analyzes the relationship between the frequency of risk section transactions and the health of female sexual workers in Palembang City. The population of this study was all female sexual workers (FSW). The population boundaries in this research are FSWs who can be reached by the Intan Maharani Foundation and the Sriwijaya Plus Foundation which oversees work and community activities that can be reached by researchers.

The minimum sample calculation in this study uses the hypothesis test formula for the difference between two proportions using cross sectional study with a sample size of 162 people.[19] Samples were taken using a non-random technique, namely purposive sampling. The main independent variable in this study is the frequency of sexual transactions and the dependent variable is health risk. Murtono's modified research instrument was used to determine the health risks of female sexual workers with a total of 10 questions.[20] The measurement results are divided into 2, namely high health risk with a cut off ≥ mean and low health risk with a cut off < mean. The main independent variable is frequency of sexual transactions (last 1 week). Information about sexual frequency was asked using a structured questionnaire, measuring results are divided into 2, namely ≥ 2 times and < 2 times. Variables that have the potential to be confounding are age, education level, income as FSW, reasons for becoming female sex workers, and length of time as female sex workers.

Bivariate statistical analysis was applied to the Chi-square test to determine the relationship between frequency of sexual transactions and health risks. To find out confounding factors, a multivariate analysis was carried out using a multiple logistic regression test. The significance of the multivariate analysis was an alpha of 5%. If the p-value <0.05 means the independent variable is able to significantly predict compliance with the use of sexual protective equipment. This research has been approved by the ethical review committee of the Faculty of Public Health, Universitas Sriwijaya with reference number: 280/UN9.FKM/TU.KKE/2023

Results

Based on Table 1, the results of this study provide an overview of the characteristics of individuals with an average age of 29 years, where the majority are aged ≥ 19 years. In this study, female sexual workers were also found at a very young age, namely 15 years old and the oldest was 46 years old. Based on the last level of education completed, respondents were distributed from all levels of education with the majority of respondents having completed high school at 50%, but there was also 1 person who had completed tertiary education.

Table 1. Demographic Characteristics of Female Sex Workers

Variable	Frequency	Percentage (%)
Age		
≤ 15 years	1	0.6
16- 18 years old	3	1.9
≥ 19 years old	158	97.5
Age (Years): Mean-Median (Min-Max)	29.20-28(15-46)	
Last education		
No school	4	2.5
Finished elementary school	51	31.5
Finished middle school	25	15.5
Finished high school	81	50.0
Higher Education	1	0.6
Work other than as FSW		
Laborer	4	2.5
Self-employed	33	20.4
Worker's salon	18	11.1
Massage service worker	13	8.0
Housewife	1	0.6
Cafe/hotel/restaurant workers	44	27.2
Karaoke/Bar worker	39	24.1
Not yet working/Not working	10	6.2
Income is not as FSW (Mean-Median)	1.04 million – 700 thousand	
Married Status		
Not married yet	28	17.3
Marry	39	24.1
Divorced	53	32.7
Death divorce	42	25.9
Income from sexy transactions		
Low (<minimum wage)	40	24.7
High (≥ minimum wage)	122	75.3
Income from transactions (section / million): Mean-Median (Max-Min)	4.6 -4.5(2.0-8.5)	
Status of residence		
At home with parents	66	40.7
Rent	96	59.3
Been FSW for a long time		
<6 months	44	27.2
6 months-1 year	41	25.3
1-3 years	32	19.8
≥ 3 years	45	27.8
Frequency of sexual transactions (last 1 week)		
≥ 2	76	53.1
< 2	86	47.9
Health risks		
High risk	123	75.9
Low risk	39	24.1

Table 1 showed that apart from being FSW, 27.2% of respondents also have other jobs as cafe/hotel/restaurant workers, 24.1% karaoke/bar workers and 20.4% as entrepreneurs. Respondents working as non-FSW workers earn an average monthly income of 1 million rupiah. The proportion of respondents based on marital status; the majority of respondents were divorced at 32.7%. An interesting thing in the research was that 24.1% of FSWs continued to carry out sexual transactions with other men while they were married. The proportion of FSW who still live with their parents is 40.7% and the majority of them have worked as FSW for ≥ 3 years, 27.8%. Based on sexual frequency in a week, the majority of them carry out transactions ≥ 2 times and the majority of them have a high health risk of sexually transmitted infections amounting to 53.1%.

Table 2. Predictors of Health Risks of Female Sexual Workers

Variable	Health Risks				*p value*	OR (95% CI)
	High Risk		Low risk			
	n	%	n	%		
Frequency of sexual transactions (last 1 week)						
≥ 2 times	18	60.0	12	40.0	0.003	1.326
< 2 times	105	79.5	27	20.5		(0.978-1.798)
Age (years)						
≥ 18	122	77.2	36	22.8	0.044	0.324
< 18	1	25.0	3	75.0		(0.059-1.771)
Level of education						
Low	65	81.3	15	18.8	0.167	1.149
High	58	70.7	24	29.3		(0.965-1.368)
Income as FSW						
Low	122	76.3	38	23.8	**0**.425	1.525
High	1	50.0	1	50.0		(0.380-6.114)
Reasons to become FSW						
Economy	40	80.0	10	20.0	0.915	1.050 (0.430-2.564)
Work	20	58.8	14	41.2	0.017	2.940 (1.213-7.125)
Environment	63	80.8	15	19.2	-	*reff*
Been a FSW for a long time(months)						
< 6 months	29	65.9	15	34.1	0.106	0.827
≥ 6 months	94	79.7	24	20.3		(0.657-1.043)

Note: "OR" = Odds Ratio; "CI" = Confidence Interval

Based on Table 2, the results of the bivariate test using the chi square test, results were obtained where the variables Frequency of Sexual Transactions (last 1 week) p-value (0.003), age p-value (0.044), and reasons for being female sex workers were proven to be significantly related to the health risks of FSW. Based on Table 3, the multivariate test with multiple logistic regression with a risk factor model, the results showed that the Frequency of Sexual Transactions was p-value (0.007) with Adj OR value of 3.467 (1.415 - 8.494) after being controlled for age and length of time as female sex workers. The results showed that age and length of time as a female sex worker proved to be confounding factors.

Table 3. Multivariate Analysis of Risk Factor Models of the Relationship between Frequency of Sexual Transactions and Health Risks

Risk factors	Category	β	p value	Adjust OR (95% CI)
Frequency of Sexual Transactions (last 1 week)	≥2times	1.243	0.00 7	3.467 (1.415 –8.494)
	<2 times			
Age	≥ 18 years old	-2.053	0.0 89	0.128 (0.012 -1.368)
	<18 years old			
Been FSW for a long time	≥ 6 months	-0.774	0.0 78	0.461 (0.195 - 1.089)
	<6 months			

Note: OR: Odds ratio, CI: Confidence Interval

Discussion

The results of this study indicate that the proportion of FSW who engage in sexual transactions ≥ 2 has a high risk to the FSW's health. Health risks for FSW who engage in sexual transactions ≥ 2 times have a risk of 3.467 (1.415-8.494) times experiencing high health risks compared to FSW who engage in sexual transactions <2 times after controlling for age and length of time as FSW. This research is in line with Fernandes et.al, stating that a history of multiple sexual partners and multiple sexual partners carries a high risk to health such as sexually transmitted infections (STI).[21]

The high health risks of female sex workers (FSW) also influence inconsistent condom use. Currently, there is a shift in the trend of sexually transmitted infections among FSW, with the prevalence of chlamydia decreasing and the prevalence of gonorrhea increasing. Therefore, it is necessary to promote the use of condoms during oral sex because oropharyngeal gonorrhea is often diagnosed and the potential spread of antimicrobial-resistant gonococci.[22]

Previous research also states that sexual transactions are increasing for sexual workers who use drugs and are significantly associated with health risks such as sexually transmitted infections. Sexual transactions are often carried out by people with opioid use disorder, especially among sexual minorities and commercial sexual workers which is associated with an increase in all sexually transmitted infections.[23] Current data confirms that women are more likely to engage in transactional sex. Possible factors that result in high levels of transactions among women are the feminization of poverty, experiencing childhood trauma, sexual violence and becoming homeless, which encourage transactional sex as a way to survive.[24,25]

The results of the study also showed that age and length of time as female sex workers were associated with health risks as confounders. This research is in line with Timohty et al who stated that increasing age is associated with an increase in sexual transactions carried out and also a higher risk to their health. Older women tend to engage in more sexual transactions than younger women with an average age of 35 years and a median age of 23 years.[24]

Female sex workers of productive age have a 30 times greater risk of contracting HIV compared to women of productive age who are not sex workers,[26] while previous research findings reveal that there are more female sex workers in the 18-24 year age group compared to the 25-39

year age group.[27] This research proves that the length of time you have been female sex workers a FSW is associated with health risks such as contracting HIV. This is in line with Chabata et al and Neufeld et al which stated that sexual workers who have long been at risk of experiencing HIV infection are higher than new female sexual workers. This was also discovered when conducting seroconversion examinations where female sexual workers who had been around for a long time had higher seroconversion compared to new female sexual workers.[28,29]

The potential for information bias may occur in this research because at the beginning of the interview the respondent did not openly want to answer the questions. To control bias, researchers try to explain the research objectives and the benefits of this research for society, especially key populations. It is hoped that the results of this research can be used in a wider population of female sex workers.

The weakness of this study was obtained at the beginning of the interview where respondents still had doubts and were less open in answering questions related to the frequency of sexual activity they engaged in thus influencing the information they wanted to obtain, while the strength of this study was that the sample size was large enough so that the research results could be generalized to the wider population of sex workers.

Conclusion

Frequency of sexual transactions was proven to be significantly related to health risks in sexual workers with age and length of time as female sex workers as confounding variables. Female sexual workers have experiences of verbal and physical harassment. FSW also has risky behavior such as alcohol consumption and drug use. Women sexual workers need to receive legal protection in carrying out their work so that they can prevent acts of violence and threats of death

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Conflict of interest

The authors declare that there is no conflict of interest.

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