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ORIGINAL ARTICLE

Intention Toward Pre-exposure Prophylaxis Use Among Female Sex Workers From Rural Area: A Cross-sectional Study in Jember, Indonesia

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ABSTRACT

Introduction: HIV transmission among Indonesian female sex workers (FSW) remains a concern. The pre-exposure prophylaxis (PrEP) as one of the HIV transmission prevention methods was limited in urban areas. The issue about PrEP will be available in rural areas of Jember, Indonesia. The related sector needs more preparation to respond to it. This study aims to determine the intention toward PrEP use among FSWs and its influencing factors (sociodemographic, PrEP-related knowledge, motivation, and self-efficacy) in rural areas. **Materials and methods:** This study used a cross-sectional approach. One hundred thirty-eight (138) FSWs were involved and were reached using purposive sampling. Data was collected using close-ended questionnaires and analysed using the Spearman bivariate correlation. **Results:** This study showed that only 31.2% of respondents intend to use PrEP. Several sociodemographic factors are significantly related to the intention to use PrEP among FSW, including age ($p=0.013$), recent education ($p<0.001$), length of time serving commercial sex ($p=0.003$), history of receiving PrEP information/education ($p=0.027$), and PrEP-related self-efficacy ($p<0.001$). Therefore, the factors of marital status ($p=0.261$), the experience of HIV testing ($p=0.232$), knowledge of PrEP ($p=0.127$), and motivation related to PrEP ($p=0.093$) were not significantly related to the intention to use PrEP. **Conclusion:** The intention toward PrEP use among FSWs is still low and significantly influenced by their self-efficacy. Efforts are needed to optimise the intention of FSW to use PrEP, such as increasing awareness of the dangers of HIV, socialising the importance of using PrEP when it is available, giving information about PrEP, and providing support so the motivation increases.

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Keywords: Female sex worker, Intention, Motivation, Pre-exposure prophylaxis, Self-efficacy

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INTRODUCTION

Reports of HIV and AIDS cases in Indonesia continue to increase yearly [1], [2]. Until now, HIV AIDS cases are still a problem for society and the government because there has been no significant reduction in new cases. World Health Organisation (WHO) states that one of the key populations that are most at risk of HIV infection is female sex workers (FSW) [2]. Indonesia, a middle-income country, still faces many FSWs [2], especially in rural areas. According to a previous study, FSWs in low- and middle-income countries had a 13.5 times higher risk of HIV infection than women of the same reproductive age [3]. The Health Office of Jember reports that the FSW population is estimated to be more than 2,600. Although this number is smaller than other key populations, such as men having sex with men [4], the FSW in Jember has a high turnover, and their

customers usually change, which makes the spread of HIV challenging to control.

The Ministry of Health of the Republic of Indonesia has established a national HIV AIDS prevention strategy [2] to control HIV transmission. The approach to prevent HIV transmission through behavioural programs is still the main program. Unfortunately, there is a slow process to change FSW behaviour. Meanwhile, drug prevention is a strategy that has effectively reduced HIV transmission [5]. Pre-exposure prophylaxis (PrEP) emerged as a biomedical prevention strategy for HIV transmission using drugs [6], [7], [8], [9]. The use of PrEP has also been mentioned in the 2020-2024 national strategy and action plan [2]. The PrEP prevention program in Indonesia has not been implemented optimally and evenly. PrEP is still challenging in Indonesia because not all health services give it freely, and the price is too high [10]. Until now, PrEP has only been found in urban areas or big cities.

Jember, as a rural area, also strives to prevent an increase in HIV AIDS cases. Based on information

from non-governmental organisations that focus on overcoming HIV in Jember, it is known that PrEP will be available in Jember in 2023 for free. All sectors must make various preparations to implement PrEP services. Although previous research has identified the desire of key populations to use PrEP, the information provided still needs to be improved, especially in Jember. The majority of FSWs had never heard of PrEP before. The certainty of FSW's knowledge about PrEP has yet to be discovered [10].

Meanwhile, it is known that people at higher risk of HIV infection have a lower intention to use pre-exposure prophylaxis [8], [11]. Although the effectiveness of PrEP has been proven to reduce HIV transmission, there is still much doubt regarding its efficacy [12]. Individual desires are also influenced by knowledge and motivation to do something [13], [14]. A previous study revealed that the intention to use PrEP is influenced by self-efficacy [14], [15]. Self-efficacy is self-confidence in one's ability to organise or do things supporting health [16], [17]. According to Pender's Health Promotion Model (HPM), a behaviour change process is essential, with self-efficacy as the centre. The results of other studies show that FSWs have a high intention to use PrEP, especially in urban areas. Meanwhile, studies in rural or remote areas, especially in Indonesia, are still very limited.

To summarise, the health office and sectors involved in preventing HIV transmission, especially in Jember, need to identify the situation before the policy on PrEP is implemented. The most important case to study is how intent female sex workers are to use PrEP, especially in rural areas. This study aims to determine the intention toward PrEP use among FSWs and its influencing factors (sociodemographic, PrEP-related knowledge, motivation, and self-efficacy) in rural areas. Hopefully, this study can become information for policymakers who prepare FSWs to use PrEP in order to prevent HIV transmission.

MATERIALS AND METHODS

Design, population, and study sample

This cross-sectional study was approved by the IIUM. The study design is quantitative: analytical descriptive with a cross-sectional approach. The population number of FSWs was unrevealed clearly. The sample was approached using a purposive sampling method with the sample size determined through the G*Power test, resulting in 138 female sex workers in Jember, Indonesia. Criteria for respondents include being able to read and write, never been tested positive for HIV or not tested positive for HIV or tested for HIV but didn't know the result, and not seeing a history of receiving information about PrEP.

Data collection

The data was collected using closed-ended questionnaires consisting of 5 sections. The first part consists of sociodemographic data containing age, marital status, formal education, length of time as a female sex worker, history of HIV testing, HIV status, and history of receiving information about PrEP.

The second part is a questionnaire to assess PrEP-related knowledge adapted by Amtiyaz [10] from Holt et al. [18]. The questionnaire consists of 12 items with a score of 3 if the answer is correct, 2 if the answer is wrong, and 1 if the answer is don't know. The questionnaire has been declared valid based on the content validity index test with I-CVI = 0.916 [8]. FSW's PrEP-related knowledge was categorised as high if the score was 31-36 and low if the score was <30.

The third part is a questionnaire to assess PrEP-related motivation adapted from Qu et al. [15]. The questionnaire consists of 11 items, 5 favourable and 6 unfavourable statements. The answer choices for statement items use a Likert scale in 5 ranges: never, rarely, sometimes, often, and always. Favourable statements are scored 1-5 from never to always. Unfavourable statements are scored 5-1 from never to always. The questionnaire has been declared valid based on the content validity index test with I-CVI=1. FSW's PrEP-related motivation is categorized as high if the score is 34-55 and low if the score is 11-33.

The fourth part is a questionnaire to assess PrEP-related self-efficacy adapted from Qu et al. [15]. The questionnaire consists of 8 statements. The answer choices for statement items use a Likert scale in 5 ranges: very unsure, not sure, somewhat sure, sure, and very sure. Answers to statement items are scored 1-5 from very unsure to very sure. The questionnaire has been declared valid based on the content validity index test with I-CVI=1. FSW's PrEP-related self-efficacy was categorised as high if the score was 25-40 and low if the score was 8-24.

The fifth part, the questionnaire to assess intention toward pre-exposure prophylaxis, was adapted by Amtiyaz [10] from Eisingerich et al. [19]. The questionnaire consists of 6 statement items. The answer choices for statement items use a Likert scale in 4 ranges: strongly disagree, disagree, agree, and strongly agree. Answers to statement items are scored 1-4 from strongly disagree to agree strongly. The questionnaire has been declared valid based on the content validity index test with I-CVI=0.916. Intention toward pre-exposure prophylaxis use is categorised as high if the score is 13-24 and low if the score is 6-12.

Data was collected in June-July 2023 and given to

respondents who met the criteria. The research was conducted directly or face-to-face after the respondent agreed to participate in this research. Before they filled out the questionnaire, the researcher briefly explained the definition of PrEP. Ethical clearance was declared by The Ethical Committee of Medical Research Faculty of Dentistry Universitas Jember, with registration number 2038/UN25.8/KEPK/DL/2023. All data was kept confidential.

Statistical analysis

The data was analysed using data processing software. The results of the descriptive analysis are presented in frequency and percentage tables to identify the sociodemographic data, PrEP-related knowledge, PrEP-related motivation, PrEP-related self-efficacy, and intention toward pre-exposure prophylaxis use among female sex workers. Correlation analysis was carried out to examine the relationship between the sociodemographic data, PrEP-related knowledge, PrEP-related motivation, PrEP-related self-efficacy, and intention toward pre-exposure prophylaxis use among female sex workers. The statistical test of correlative analysis uses Spearman's correlation coefficient with a significant level of 0.05.

RESULTS

One hundred thirty-eight female sex workers were willing to be respondents and filled out the questionnaire completely. According to Table I, most of respondents were in the age range 21-30 years (41.3%), the majority of respondents were widows (79.7%), most of respondents' educational background was in the junior high school category (41.3%), the majority of respondents had been done HIV-test (82.6%), the majority of respondents said their HIV status was negative (79%) with the remainder not knowing the results, the majority of respondents had never heard of PrEP (88.4%), and almost all respondents had never received education about PrEP (92.8%).

Table I: Demographic data of respondents (N=138)

Variables	n	%
Age (in year)		
< 21	12	8.7
21-30	57	41.3
30-41	46	33.3
41-50	22	15.9
> 50	1	0.8
Marital status		
Married	18	13.0
Unmarried	10	7.3
Divorced	110	79.7
Formal educational background		
No education	2	1.5
Unfinished elementary school	20	14.5
Elementary school	41	29.7
Junior high school	57	41.3
Senior high school	18	13.0

CONTINUE

Table I: Demographic data of respondents (N=138) (CONT.)

Variables	n	%
Length being female sex worker (in year)		
< 1	45	32.6
1-5	67	48.5
5-10	19	13.8
>10	7	5.1
Previous HIV-test		
Yes	114	82.6
No	24	17.4
HIV status		
Negative	109	79.0
Unknown	29	21.0
Heard about PrEP before		
Yes	16	11.6
No	122	88.4
Get Information about PrEP before		
Yes	10	7.2
No	128	92.8

Table II reports that most respondents have low PrEP-related knowledge (96.4%), low PrEP-related self-efficacy (59.4%), and low intention toward pre-exposure prophylaxis use (68.8%). In contrast, most respondents had high PrEP-related motivation (85.5%).

Table II: PrEP-related knowledge, PrEP-related motivation, PrEP-related self-efficacy, and intention toward pre-exposure prophylaxis use among female sex workers in rural areas of Jember, Indonesia (N=138)

Variables	n	%
PrEP-related knowledge		
High	5	3.6
Low	133	96.4
PrEP-related motivation		
High	118	85.5
Low	20	14.5
PrEP-related self-efficacy		
High	56	40.6
Low	82	59.4
Intention toward pre-exposure prophylaxis		
High	43	31.2
Low	95	68.8

Results from correlation analysis, Table III show several factors are significantly related to the desire to use Pre-Exposure Prophylaxis as prevention of HIV transmission among female sex workers, including age ($p=0.013$), level of education ($p<0.001$), length of time serving sex commercial ($p=0.003$), history of obtaining PrEP information ($p=0.027$), and self-efficacy regarding PrEP ($p<0.001$). In contrast, the factors of marital status ($p=0.261$), HIV testing experience (0.232), knowledge about PrEP ($p=0.127$), and motivation regarding PrEP ($p=0.093$) were not significantly related to the intention toward PrEP use. The highest correlation coefficient is PrEP-related self-efficacy ($r=0.492$), a moderate correlation. The higher their self-efficacy, the higher their intention to use PrEP.

Table III: Factors associated with intention toward pre-exposure prophylaxis use among female sex workers in rural areas of Jember, Indonesia (N=138)

Variable	Intention toward pre-exposure prophylaxis use				Total		p	r
	High		Low					
	n	%	n	%	n	%		
Age (in year)							0.013*	-0.211
< 21	2	1.5	10	7.2	12	8.7		
21-30	12	8.7	45	32.6	57	41.3		
30-41	20	14.5	26	18.8	46	33.3		
41-50	9	6.5	13	9.4	22	15.9		
> 50	0	0	1	0.8	1	0.8		
Marital status							0.261	-0.354
Married	5	3.6	13	9.4	18	13.0		
Unmarried	1	0.8	9	6.5	10	7.3		
Divorced	37	23.8	73	52.9	110	79.7		
Formal educational background							<0.001*	0.354
No education	1	0.7	1	0.7	2	1.5		
Unfinished elementary school	11	8.0	9	6.5	20	14.5		
Elementary school	19	13.8	22	15.9	41	29.7		
Junior high school	10	7.2	47	34.1	57	41.3		
Senior high school	2	1.4	16	11.6	18	13.0		
Length being female sex worker (in year)							0.003*	-0.249
< 1	6	4.3	39	28.3	45	32.6		
1-5	26	18.8	41	29.7	67	48.5		
5-10	8	5.8	11	8.0	19	13.8		
>10	3	2.2	4	2.9	7	5.1		
Previous HIV-test							0.232	0.102
Yes	38	27.5	76	55.1	114	82.6		
No	5	3.6	19	13.8	24	17.4		
HIV status							0.069	0.155
Negative	38	27.5	71	51.4	109	79.0		
Unknown	5	3.6	24	17.4	29	21.0		
Heard about PrEP before							0.258	-0.097
Yes	3	2.2	13	9.4	16	11.6		
No	40	29.0	82	59.4	122	88.4		
Get Information about PrEP before							0.027*	-0.188
Yes	0	0.0	10	7.2	10	7.2		
No	43	31.2	85	61.6	128	92.8		
PrEP-related knowledge							0.127	0.130
High	5	3.6	0	0.0	5	3.6		
Low	90	65.2	43	31.2	133	96.4		
PrEP-related motivation							0.093	-0.144
High	78	56.5	40	29.0	118	85.5		
Low	17	12.3	3	2.2	20	14.5		
PrEP-related self-efficacy							<0.001*	0.492
High	54	39.1	2	1.4	56	40.6		
Low	41	29.7	41	29.7	82	59.4		

*Significant correlation, Spearman test with $\alpha=0.05$

DISCUSSION

This study revealed that over half of respondents had low intention toward pre-exposure prophylaxis (PrEP) use. The low intention is related to not receiving adequate information or counseling. Previous studies revealed poor knowledge and understanding of the risk and prevention of HIV and AIDS lead to low awareness of PrEP use [20]. The other studies explained that the intention to use pre-exposure prophylaxis to prevent HIV transmission can be influenced by knowledge about pre-exposure prophylaxis [9], [14], [15], [21]. Despite this, many respondents still intend to use PrEP. This finding is slightly different from previous research [19], which showed that more than half of respondents

strongly agreed that they wanted to use PrEP when it was available and when it was available immediately.

In contrast to the current study, PrEP-related knowledge among FSWs was not significantly related to their intention to use PrEP. The absence of a relationship in this study may have occurred because most FSWs had never heard of or received adequate information about PrEP. This limited information has an impact on their knowledge [22]. Current study results show that most respondents still need higher PrEP-related knowledge because most have low knowledge. Whether a person's level of knowledge is high or low will influence their attitude toward preventing HIV transmission [20], [23]. In addition, the poor knowledge and understanding

of the risk and prevention of HIV and AIDS lead to low awareness of PrEP use [20]. The need for more information from health providers to FSWs in rural areas may be influenced by the unavailability of PrEP in their areas.

According to our findings, respondents' age significantly influences the intention of PrEP use. Previous studies also revealed that age influences the intention of PrEP use [10], which may happen because most respondents were 21-30 years old. Meanwhile, our findings show that the older the respondents, the lower their intention to use PrEP. FSWs in early adulthood tend to still think about their future, so they have the desire to use PrEP. Using PrEP allows them to survive and not be infected with HIV.

This study shows that the time FSWs have been selling sex also significantly influences the intention of PrEP use. Previous studies revealed that FSWs as a source of income lead to the intention to use PrEP [24]. Their high intention to use PrEP is due to their willingness to protect themselves from HIV transmission. A previous study also showed that employment status influenced respondents' knowledge of PrEP [11]. Their experience proves that even though they do not know about PrEP, some of them are aware that as female sex workers, they are at high risk of contracting HIV/AIDS. Although HIV testing experience was not significantly related to the intention of PrEP use.

In a previous study, FSWs were more at risk of contracting and spreading HIV than monogamous couples because FSWs were in contact with different clients [25]. By changing sexual partners, the risk of HIV transmission in FSW is higher than in monogamous couples who only have sexual relations with one person. Although in this study, FSWs' marital status was not significantly related to their intention to use PrEP, they are married. This finding needs special attention because those who have a partner have the potential to transmit HIV to their partner. They should be more aware of preventing HIV transmission. The more efficacy of preventing HIV, the more they behave to use PrEP.

FSWs with a higher risk of HIV infection [26] should have more interest in PrEP use. This study revealed that over half of respondents had low intention toward PrEP use. This finding needs consideration because PrEP helps FSW prevent HIV transmission, especially those at high risk of HIV infection [27], [28]. If PrEP is available in rural areas of Jember, FSW needs to participate in this program to get protection against transmission of HIV because PrEP is for free.

Concurrently, PrEP-related self-efficacy among respondents still needs to be higher. According to a previous study, self-efficacy influences a person's confidence to act [15]. This study shows that PrEP-related

self-efficacy significantly influences the intention of PrEP use. Many psychological studies show that self-efficacy is an essential factor influencing behavior initiation. Knowledge can help FSWs build correct health beliefs and increase their self-confidence [15].

Self-efficacy will drive motivation and action according to the situation. Most FSWs were highly motivated to use PrEP. In the Health Promotion Model theory, Pender explains that motivation is also one of the factors that can influence a person in behaviour that promotes their health [17]. This study shows that PrEP-related motivation did not significantly influence the intention of PrEP use. This result may show whether a person's high or low knowledge level will influence their attitude toward preventing HIV transmission. In the motivational construct, perceptions about PrEP and knowledge influence PrEP self-efficacy [15]. Because the more knowledge and the stronger PrEP-related motivation, the higher the PrEP self-efficacy [15].

This study revealed that some factors caused the low intention toward PrEP use among FSWs in rural areas. The main problem was that the PrEP still needed to be available in this area. The unavailability of PrEP may lead to some health providers not informing them to use PrEP. If FSWs don't know about PrEP, their PrEP-related knowledge is low. The low knowledge may influence their intention to use PrEP. In addition, their low self-efficacy may be the leading factor in their intention to use PrEP. As a result, this study proves the low intention toward PrEP use among FSWs in rural areas.

Some limitations in this study must be enhanced. This study is a cross-sectional study that only examined the level of intention of FSW toward PrEP use at the current stage and did not observe the dynamic change of intention toward PrEP use. Self-administered questionnaires were used. Some participants may have answered incorrectly regarding their current conditions, resulting in bias and missing data.

CONCLUSION

In conclusion, the intention toward PrEP use among FSWs is still low and significantly influenced by their self-efficacy. The intention toward PrEP was not significantly influenced by their knowledge of PrEP and motivation related to PrEP. The other factors are significantly related to the intention to use PrEP among female sex workers, including age, recent education, length of time serving commercial sex, history of receiving and PrEP information/education. Therefore, the factors of marital status and experience of HIV testing, knowledge of PrEP were not significantly related to the intention to use PrEP. Efforts are needed to optimise the intention of female sex workers to use PrEP, such as increasing awareness of the dangers of HIV, socialising the importance of using PrEP when it is available, giving information about

PrEP, and providing support so the motivation increases. In addition, the following study may explore FSW's perception of PrEP through a qualitative approach.

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