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An Investigation on Female Sexual Workers (FSWs) Knowledge, Attitude and Practice towards HIV/AIDS in Makassar, Indonesia

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Abstract **Background:** In Indonesia, HIV/AIDS is still a public health problem and approximately 620.000 people living with HIV/AIDS in this country. Female sexual workers (FSWs) as one of the groups in HIV cases are more ten times more likely to acquire HIV than the general population. This study aimed to find out the description of the knowledge, attitudes and practice of FSWs in Makassar about HIV/AIDS. **Methods:** This was observational research by using a descriptive approach. There were 255 FSWs recruited as respondents chosen by stratified random sampling. An Interviewer-administered questionnaire was designed to collect data about knowledge, attitude and practice on HIV/AIDS. **Results:** Overall, more 50% of respondents could provide the correct answers about HIV/AIDS transmission and prevention. One of the preventions that have not been known by most of them was blade and shaver sharing. Concerning attitude, most respondents had a positive attitude towards HIV / AIDS, but there were still 38.0% who agreed not to make friends with HIV patients and 28.2% respondents agreed not to offer condoms to clients who seem healthy. The condom offer was higher than condom use for clients that is 60.0% and 54.1% respectively. **Conclusion:** more than 50% of respondents could provide correct answers about basic knowledge of HIV/AIDS and more than 50% FSWs had a positive attitude. AIDS eradication commission of Makassar needs to provide any information on HIV/AIDS not only for FSWs but also for clients.

Keywords: *HIV/AIDS, knowledge, female sexual worker*

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1. Introduction

HIV/AIDS epidemy is still one of the social and public health problems in the world. In 2017, about 36.9 million people living with HIV[1]. UNAIDS (2011) reported that in some countries, HIV epidemy concentrated in a population with the highest risk HIV infection [2].

One of the high-risk population to HIV infection is female sex workers (FSWs) [3], which is suggested to be ten times more likely to acquire HIV than the general population [4]. Sex workers are those who provide or exchange sex to earn money or nonmonetary item [5,6,7]. FSWs are classified mostly as direct (those who work in brothels and street - based sex workers) or indirect (such as women working in karaoke bars or massage parlours).

Sex workers are considered as an essential contributor toward HIV heterosexual transmission rate because their behaviour is a bridge of spreading HIV to the general population[8]. A significant rate of HIV/AIDS among sex workers has been recorded as compared to the general population within a country. The transmission of HIV/AIDS often happens among sex workers before spreading into the general population [9]. Baral's study (2012) showed that the HIV/AIDS prevalence on sex workers during 5 years times span (2007 to 2011) in 50 countries found that overall prevalence is 11.8%. Sub Saharan Africa is a country with the highest prevalence, followed by Eastern Europe, Latin America and the Caribbean, as well as Asia. Meanwhile, the lowest HIV/AIDS prevalence was the Middle East and North Africa [6].

Individual factors, personal, organisation, social (community) and structural are factors that cause sex workers to have a vulnerability to acquire HIV [10]. Individual factors include characteristic, behaviour and cognitive. The cognitive aspect includes knowledge, attitude and an individual perception that influence behaviour and health. Sexual behaviour particularly condom use is a significant determinant to HIV infection on female sex workers [10]. UNAIDS (2002) revealed that one of factors that increase the vulnerability of sex workers to HIV infection is limited access to information and prevention means [9]. Besides knowledge, FSWs attitude give a contribution of HIV risk as well.

Knowledge will influence attitude, even though adequate knowledge does not always form a positive attitude [11].

Studies have been conducted to measure the cognitive factors among FSWs. In Vietnam 85.2% of respondents could provide correct answers related to HIV/AIDS transmission, and the percentage of condom use was 90% [12]. This study supported UNAIDS finding (2010) that showed that incidence and prevalence of HIV in some countries with high HIV case decreased because of the increase of comprehensive knowledge [13].

However, Bruce (2011) revealed that good knowledge about HIV/AIDS on FSWs was not always applied to safe sex behavior [14]. For instance, a study in China showed that most of the sex workers in China had good knowledge about HIV/AIDS, in which 90% of respondents have ever heard about AIDS, and 83.1% knew that HIV transmitted through having sex with people living with HIV/AIDS. However, consistent condom usage was relatively low [15]. A study in Phnom Penh, Cambodia found that almost all of the FSWs (97.4%) have ever heard about HIV/AIDS, and most of them knew that condom was used to prevent HIV, but one-quarter of them did not always use a condom [16].

On the contrary, research in Kathmandu, Nepal revealed that knowledge of FSWs was very low, but condom use of clients significantly increased [17]. A study which participated 237 FSWs in Somalia showed that only 6,9% who was able to answer correctly basic knowledge on HIV/AIDS, and 38.4% who ever heard about sexually transmitted infection disease [18].

Indonesia as the most populous Muslim country, the sex industry is technically illegal although generally it is tolerated (19 in 20). The sex industry in Indonesia is becoming complex. It is followed by increasing of Indonesian population mobility, the pace of life, rising income and challenge to accept more. Increasing mobile population is an opportunity for infidelity. Besides, stalls to purchase sex are near the railway station and terminal [21]. Those who work in the sex industry, biologically, structurally and behaviourally are more likely to acquire HIV and thereby transmit HIV at a higher rate than the general population [6].

In Indonesia, there were about 620.000 people with HIV status in which 48.000 of them were new infection cases at the same time [22]. A research carried out in 3 big cities in Indonesia (Jakarta, Bandung and Surabaya) in 2002 by involving 204 female sex workers suggested that the number of sex workers who had ever heard Sexually Transmitted Diseases (STDs) was 74.8% and most of them (60.5%) known that sexual intercourse was the most significant way of HIV transmission. Another finding of the research, although most of the sex workers had ever heard STDs and know HIV transmission. However, condom usage was still low. For a 2 week-period, only 5.8% of sex workers consistently use a condom, and the number decreased to 1.4% after observing for 4 weeks [23]. A study in 2014 about condom usage on exit clients in Makassar, revealed that 87.1% respondents have ever heard HIV/AIDS but only 30% of them who used condoms in the last sexual contact [24].

Integrated behaviour and Biology Survey conducted by the Ministry of Health Republic of Indonesia (2011) showed that HIV prevalence on direct female sex workers was 9% while on indirect female sex workers was 3%. The same study shows that the number of FSWs who had comprehensive knowledge about HIV/AIDS was still very low, that is 15% and 16% on direct FSWs and indirect FSWs, respectively [25].

Makassar is the capital of South Sulawesi province and it is the fourth biggest city in Indonesia and the biggest one in the East of Indonesia with the number of population based on population projection for 2017 was 1.489.011 people [26]. Nowadays, Makassar is growing rapidly in various fields both physical and social. It causes either a positive effect or negative effect. In addition, the growth is followed by encouraging people to came to Makassar to look for a job in various sectors including working as a female sexual worker. Social agency of Makassar estimated that there were about 800 FSWs in 2011.

The number increased to 1.789 based on the survey result of Makassar's AIDS Eradication Commission in 2014. The high number of FSWs in Makassar affect the number of HIV/AIDS cases apparently. As a big and metropolitan city, Makassar has the highest number of HIV/AIDS in South Sulawesi Province. The finding of a new case of HIV in 2015 in Makassar is 655 cases consisted of 451 male and 214 females [27]. As a risky group to acquire and spread HIV, FSWs in Makassar should be provided with adequate information about HIV/AIDS to apply safe sex behaviour. Therefore, research on FSWs in Makassar was conducted to find out about their knowledge, attitude and practice on HIV/AIDS. Practice of this study is condom offer and usage of FSWs clients in the last contact sexual. The result of this research could be used as a basis in creating a significant or prompt intervention for improving knowledge and behaviour change on FSWs in Makassar so that HIV prevalence both the key population and the general population could be decreased.

2. Materials and Method

2.1. Study Design

This was observational research by using a descriptive study approach. This study aimed to know a description of the knowledge, attitude and practice of FSWs in Makassar about HIV/AIDS. This research was conducted in certain places in Makassar such as bars, brothels, massage parlours, and salons. The data was collected about a month in September 2014. Before conducting the survey, a data collection about the number of bars, brothels, massage parlours, and salons was carried out. Based on the data collection, it was known that 128 hotspots spread at nine sub-districts. Of 128 hotspots, there were 1.789 FSWs and they were considered as a population in this study. Based on the number of the population, this research recruited 255 FSWs as sample chosen by stratified random sampling.

2.2. Data Collection

Data was collected by using an interviewer-administered questionnaire. The questionnaire consisted of

some questions related to knowledge, attitude and practice on HIV/AIDS. Knowledge and attitude aspect focus on transmission and prevention of HIV/AIDS. Meanwhile, practice focus on offering and condom use. Condom usage in this study was condom use of clients in which FSWs provided the information. Data collection encompassed respondents' characteristics as well, such as age, education and length of working as FSW. Before doing an interview, an interviewer needs to get consent from respondents.

3. Result

In this study, most of the respondents (45.49%) are in the range age of 20 to 39 years. Around 2% is under 20 years, and 1% is more than 49 years old. Majority of respondents still had a low education level. Almost half of the respondents completed their study from Junior high school (41.96%). There were even respondents who have never attended formal education (5.10%). The number of FSWs who finished their study from an academy or university 1.57% (Table 1).

Almost half of the respondents have been working for less than one years, but some of them have been working for more than nine years.

Concerning knowledge, most of the respondents knew that HIV is a cause of (63.50%) and there were still 36,5% FSWs did not know it (Table 2). Majority of respondents (89.8%) gave a correct answer that AIDS is a communicable disease, there were 3.1% respondents said that HIV/AIDS could not transmit and did not know (7.1%). The number of FSWs who answer correctly that HIV transmit by doing unsafe sexual intercourse was very high that was 92.1%, but there were still 1.3% said that it could not transmit through sexual intercourse and the answer did not know (6.6%). For transmission by sharing syringe, as many 74.7% answers correctly, false (3.9%) and 21.4% did not know. In term of transmission through blood transfusion, there were 67.7% gave the correct answer, false (4.4%), and 27.9% did not know the transmission.

Table 1. Characteristic of FSWs, Makassar, Indonesia 2014

Characteristics	n	%
Age (year)		
15 – 19	6	2,35
20 – 29	116	45,49
30 – 39	104	40,78
40 – 49	26	10,20
>49	3	1,18
Education		
No School	13	5,10
Primary school	35	13,73
Junior High School	107	41,96
Senior High School	96	37,65
Academy/University	4	1,57
Length of working as FSW		
< 1 year	109	42,75
1 – 3 years	85	33,33
4 – 6 years	35	13,73
7 – 9 years	9	3,53
>9 years	17	6,67

Table 2. Knowledge of Respondents about HIV/AIDS

Knowledge	n	%
The aetiology of AIDS		
AIDS is caused by HIV		
Yes	162	63,50
Did not know	93	36,5
Transmission		
HIV/AIDS is a communicable disease		
Yes	229	89,8
No	8	3,1
Did not know	18	7,1
HIV transmits by doing sexual intercourse		
Yes	211	92,1
No	3	1,3
Did not know	15	6,6
HIV can transmit by sharing a syringe		
Yes	171	74,7
No	9	3,9
Did not know	49	21,4
HIV can transmit through blood transfusion		
Yes	155	67,7
No	10	4,4
Did not know	64	27,9
HIV can transmit from mother to child		
Yes	128	55,9
No	14	6,1
Did not know	87	38,0
Prevention		
Be Faithful with one partner.		
Yes	137	53,7
Did not know	118	46,3
Condom use		
Yes	193	75,7
Did not know	62	24,3
No sharing syringe		
Yes	135	52,9
Did not know	120	47,1
No sharing razor blade and shaver equipment		
Yes	93	36,5
Did not know	162	63,5

The number of respondents who knew about mother to child transmission was high enough (55.9%), false (6.1%) Dan 38.0% FSWs did not know that HIV can transmit from mother to child.

Table 2 also showed knowledge respondents about the prevention of HIV/AIDS. As many 53.7% said that we need to be faithful with one partner, and 46.3% did not know the prevention method. There were 75.7% FSW know that condom usage is one of the ways to prevent HIV and 24.3% did not know. Prevention by no sharing syringe, correct answer (52.9%) and did not know (47.1%). Meanwhile, the number of respondents who did not know the prevention by no sharing blade and shaver was very high (63.5%) and only 36.5% knew about that.

In term of attitude (Table 3), the majority of respondents agree (83.1%) that HIV/AIDS can be prevented by using a condom, disagree (8.6%) and did not know (8.2%). There 57.3% respondents disagree that FSWs did not need to offering condom to clients who seem healthy but there were still some respondents (28.2%) who agree, and 14.5% did not know. Avoiding HIV/AIDS patients and did not make friends with them, most of the

respondents disagreed (54.1%), agree (38.0%) and did not know (7.8%). The number of respondents who agree that FSWs and clients should VCT test were very high (91.0%), disagree (5.9%), and did not know (3.1%).

Table 3. Attitude toward Transmission and Prevention HIV/AIDS

Statement	n	%
HIV can be prevented by using a condom		
Agree	212	83,1
Disagree	22	8,6
Did not know	21	8,2
Condom do not need to be offered to clients who seem healthy		
Agree	72	28,2
Disagree	146	57,3
Did not know	37	14,5
HIV/AIDS patients should be avoided		
Agree	97	38,0
Disagree	138	54,1
Did not know	20	7,8
FSWs and clients should do VCT test		
Agree	232	91,0
Disagree	15	5,9
Did not know	8	3,1

Table 4. The behaviour of Offering and condom use in the last sexual contact of FSWS

Behaviour	n	%
Offering condom in the last sexual contact		
Yes	153	60,0
No	102	40,0
Clients used a condom in the last sexual contact with FSWs		
Yes	138	54,1
No	117	45,9
A party who supplied condom in the last sexual contact		
FSW	128	50,2
Boss	27	10,6
Client	15	5,9
A condom was not available	85	33,3

Offering condom to clients in the last sexual contact was done by most of FSWs (60.0%), but there were still 40.0% who did not offer condom to clients (Table 4). Meanwhile, although the number of FSWs who offered condom was high enough but the number of clients who used a condom was still lower (54.1%). In term of the party who supplied condom in the last sexual contact, mostly condom was supplied by FSWs (50.2%), clients (5.9%) and 33.3% respondents said that condom was not available at the time.

4. Discussion

This section will highlight about how knowledge and attitude of FSWs about HIV/AIDS. Moreover, it will elaborate offer and condom usage of FSWs' clients**.**

4.1. Knowledge and Attitude toward HIV/AIDS

This study suggested that the majority of respondents have a low education level i.e. only graduated from junior high school. However, FSWs' knowledge about HIV/AIDS was good enough. Respondents in this study are categorised as having a good knowledge if they can answer the cause of AIDS correctly and know the transmission of the virus, particularly through unsafe sexual contact and syringe sharing for drugs.

Overall, more than half of the respondents can give the correct answer of the questions on HIV AIDS. The results of this study is similar to study in the city of Dessie, Ethiopia, that 64.7% of FSW had good knowledge about HIV [28]. Research in China showed the same results as well, in which 60.8% of respondents gave the correct answers related to HIV/AIDS knowledge [8]. However, the different results from research conducted by Kritika in Somalia, where only 6.9% of respondents had basic knowledge about HIV / AIDS, and only around 1/3 of them had heard about STDs [18].

Regarding knowledge of the modes of transmission of HIV/AIDS, this study suggested that there were two HIV transmission methods which have not been still known yet by some respondents, namely transmission from mother to child and blood transfusion transmission. Furthermore, there were still some FSWs said that HIV could not be transmitted by both ways. A research in Shiraz, Iran, also found the same thing that there were still some respondents who did not know that HIV could spread from mother to child [29].

In terms of prevention aspects, most respondents know several prevention ways. However, more respondents did not know that HIV transmission can be prevented by not sharing a razor blade and shaving equipment. Barbershops and beauty shops (salons) are places where HIV transmission could happen because the workers usually re-use sharp equipment such as razor blade or they do not clean shaving equipment properly [30]. Using of a contaminated razor blade is one of the transmission modes of HIV [31]. Clients of FSWs might be infected HIV from the barber shops, and then they risk to transmit HIV to FSWs when having unsafe sexual contacts.

In addition to knowledge, the attitude was another variable examined in this study. According to social psychologist, attitude is a tendency of a person whether like or not like an object or behaviour. The main principle of an attitude that it is subjective [32]. An attitude could influence behaviour. Consequently, people who have a positive attitude tend to show positive behaviour and conversely. However, people with a positive attitude could have negative behaviour.

In this study, most of the respondents had a good or positive attitude towards the transmission and prevention of HIV/AIDS. However, there were still some respondents who gave a negative attitude or agreed that guests who look healthy do not need to be offered using condoms and people living with HIV/AIDS should be avoided. The possible reasons of FSWs having negative attitude is they have poor knowledge about how HIV is transmitted and prevented, or they are very anxious and afraid of HIV. HIV could infect people through an exchange of any human fluid from infected people such as blood, breast milk, semen and vaginal secretion. People should not avoid infected individuals because HIV is not transmitted through ordinary activity every day such as shake hand, hugging, kissing, sharing

of personal equipment, sharing of food or drinking [33].

4.2. Offering and Condom Usage

Condom is a very effective way to prevent HIV infection as long as it is appropriately used. Besides HIV, PMS can also be prevented by using condoms [14,34]. In this study, respondents were asked questions about the supply and use of condoms at the last sexual contact. The meaning of sexual contact here was last sexual intercourse done before respondents were interviewed. The results showed the number of FSWs who offered condoms to their clients was high enough (60.0%). However, the clients who used condoms were lower (54.1%).

The awareness of FSWs to offer condoms was not good even though in this study most of FSWs correctly answered that the HIV could spread through sexual contact. Study in Makassar found that FSWs usually did not offer condoms to guests because they seem healthy. The lower number of condom use in clients is caused by the clients' uncomfortable feeling. Besides, sexual workers usually offered condoms, but the clients refused to use it. In these conditions, some FSWs usually keep providing a service to the clients due to economic factor, i.e. they need to earn money to survive and meet their needs. If the FSWs are not aware of their behaviour, HIV spreading will be easier. The higher the number of clients who did not use condoms when having sex, the higher the risk of HIV transmission in the general population is.

In this study, it was found that the awareness of FSW to provide condoms was very good. It could be observed from the number of FSWs who supplied condoms in last sexual contact. However, this awareness did not influence FSWs desire and ability to offer condoms to clients. Studies in Indonesia suggested that condom usage of clients was still low. Data from 1997-1998 showed that condom use of FSWs guests in Bali reached 69.9% [35]. Meanwhile, a research in Surabaya found that condom use in sex workers in Brothels only 14.0% [36]. A study in Timika revealed that the consistency of condom use was only 16% [37]. The low condom use clients can cause a higher risk of HIV transmission not only among sex workers and their clients but also the general population.

5. Limitation

In data analysis, this study did not separate between direct and indirect FSW. The condom use aspect did not also distinguish between regular and non-regular clients.

6. Conclusion

Most of FSWs could answer question correctly about transmission mode and prevention of HIV/AIDS. In addition, most of them had positive attitude towards HIV/AIDS. However, condom usage at the client was still low or has not reached 100%. Makassar AIDS Eradication Commission needs to provide HIV/AIDS information focus on transmission and prevention. The information should be shared not only for FSWs but also for the clients in Makassar so that they can apply safe sex behaviour. Further research on FSWs in Makassar is needed to know whether the cognitive aspects of FSWs will influence their behaviour and affect condom use of clients.

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