

Type of female sex worker and other risk factors of syphilis

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Received: November 15, 2015; Revised: November 19, 2015; Accepted: November 24, 2015

Abstrak

Latar belakang: Sifilis termasuk salah satu dari penyakit infeksi menular seksual kronis disebabkan kuman *Treponema pallidum* yang dapat menyebabkan kecacatan pada penderita dan anak yang dilahirkan. Tujuan analisis ini adalah untuk melihat hubungan tipe dan lama kerja sebagai Wanita Pekerja Seks (WPS) dengan kejadian penyakit sifilis di 7 kota di Indonesia.

Metode: Data dari Survei WPS menggunakan kuesioner terstruktur di 7 kota (Kupang, Samarinda, Pontianak, Yogyakarta, Timika, Makassar dan Tangerang) di Indonesia tahun 2007, desain potong lintang dan responden dipilih secara cluster random sampling dari WPS langsung dan tidak langsung yang memenuhi kriteria definisi operasional. Diagnosa Sifilis ditegakkan dengan pemeriksaan laboratorium Rapid Plasma Reagent (RPR) dan *Treponema pallidum* Haemagglutination Assay (TPHA).

Hasil: Sebanyak 1750 responden ikut dalam penelitian dan 12,2% terindikasi sifilis. Kota Makassar mempunyai prevalensi yang tertinggi sebesar 55,2%. WPS yang berlokasi di luar pulau Jawa memiliki risiko terinfeksi sifilis 3,16 kali lebih tinggi dibandingkan dengan WPS yang berlokasi di pulau Jawa [risiko relatif suaian (RRa) = 3,16 ; P = 0,000]. Tipe WPS tidak langsung memiliki risiko 46% lebih banyak untuk terinfeksi sifilis dibandingkan dengan WPS langsung (RRa = 1,46 ; 95%; P = 0,002), sedangkan WPS yang mencari pengobatan ke dokter memiliki risiko 58% lebih besar dibandingkan yang berobat ke sarana kesehatan langsung (RRa = 1,58; P = 0.006).

Kesimpulan: Lokasi WPS yang berada di luar pulau Jawa, tipe WPS tidak langsung memiliki risiko lebih tinggi untuk terinfeksi penyakit sifilis. Wanita pekerja seks yang mencari pengobatan ke dokter menyebabkan penyakit terindikasi lebih tinggi dibandingkan jika berobat ke sarana pelayanan kesehatan lainnya. (*Health Science Journal of Indonesia 2015;6:132-6*)

Kata kunci: sifilis, wanita pekerja seks, Indonesia

Abstract

Background: Syphilis is one of the chronicle sexual transmission diseases which is caused by *Treponema pallidum* bacteria that can cause disability in patients and babies born. This analysis aims at looking at the relationship type and work duration as Female Sex Workers (FSW) and the syphilis cases within 7 cities in Indonesia.

Methods: The data was taken from Survey on FSW using a structured questionnaire in 7 cities (Kupang, Samarinda, Pontianak, Yogyakarta, Timika, Makassar and Tangerang) in Indonesia in 2007, the cross-sectional design and respondents are selected by cluster random sampling directly and indirectly towards the WPS who fulfill the operational definition criteria. Syphilis diagnosis was confirmed by laboratory tests Rapid Plasma Reagents (RPR) and *Treponema pallidum* Haemagglutination Assay (TPHA).

Results: There were 1750 respondents who participated in the study and about 12.2% were infected with the syphilis. Makassar has the highest prevalence about 55.2%. The WPS who are located outside of Java have the syphilis infection risk about 3.16 times higher than the WPS located in Java (adjusted relative risk (RRa) = 3.16; P = 0.000). The indirect WPS had 46% more risk for syphilis infection compared to direct WPS (RRa = 1.46; P = 0.002), whereas the FSW who seek treatment from doctor have a risk about 58% tmore risk compared to the direct health facilities treatment [RRa = 1.58; P = 0.006].

Conclusion: The location of FSW which is outside of Java, the FSW does not directly have a higher risk of being infected with syphilis. Female sex workers who seek the doctor treatment are able to be indicated earlier rather than they are who seek treatment to other health care facilities. (*Health Science Journal of Indonesia 2015;6:132-6*)

Keyword: Syphilis, Female Sex Worker, Indonesia

The high prevalence of Sexual Transmitted Infections (STI) and Reproductive Tract infections (RTI) for population in a region, it is known to be the first sign of the spreading risk of HIV, though HIV prevalence in a region is very low. Diseases which belong to IMS or ISR are like, syphilis, gonorrhea, trichomoniasis, clamidiasis, bacterial vaginosis, candidosis, HSV2. Some clinical manifestations of STI are genital sores on syphilis, cancrroids, and herpes simplex virus type – 2. STI which can lead HIV transmission. This is proved that the STI control programs have effectively reduced the HIV in population.^{1,2}

The total prevalence of syphilis on high-risk groups based on a survey in 2005 within 10 cities in Indonesia is about 9%, while the prevalence in each city varies.³ According to the research on rural population in Africa in 1991-1994, it showed the prevalence of syphilis in men about 7.5% while women are about 9.1%.⁴

The huge problem caused by the disease requires special attention to overcome. Early detection by serology accompanied by the management of the patient is expected to stop the chain of transmission and reduce the prevalence of syphilis in Indonesia. Epidemiologically, some demographic factors affect the syphilis case. The education level leads the FSW to have basic knowledge to quickly understand about healthy life, clean, and safe behavior. Therefore, a risk of being infected with sexually transmitted diseases will certainly be reduced.

The study aims at identifying the risks of the dominant factors for syphilis in Female Sex Workers, within seven cities in Indonesia in 2007.

METHODS

Data is taken from a complete study on FSW survey within 7 cities in Indonesia in 2007, cross-sectional design and the respondents were selected by random cluster sampling directly and indirectly towards the FSW who fulfill operational definitions criteria. Data were collected from seven cities; that is Kupang, Samarinda, Pontianak, Yogyakarta, Timika, Makassar and Tangerang. Total sample

collected in 1750 respondents consist of 1286 respondents (73.5%) direct FSW and 464 respondents (26.5%) indirect FSW. The direct FSW means their profession is only as female sex workers. Whereas an indirect FSW is a person who have other profession rather than female sex workers, for example barkeeper, escort girl at karaoke, or a masseur in a massage parlor. The 2007 survey was actually the continuation from the previous one conducted in 2003 and 2005 in 13 different cities; hopefully it can complete the previous data.

The inclusion criteria of respondents who participated in this study, mainly direct and indirect female sex workers, aged about 15-50 years, not being menstruation and pregnant.

Before conducting the study, the preparation of the samples was done by using secondary data from the Local Health Office and non-governmental organizations that had been working as an outreach in localization. If the mapping results obtained more respondents than expected, then we invited 250 female sex workers to be the respondent who came first and fulfill the qualifications.

The implementation of survey was preceded by interviews with the respondents, followed by a physical examination. Blood samples were screened for syphilis using Rapid Plasma Reagin (RPR) and Treponemal Pallidum Haemagglutination Antibody (TPHA), as a nontreponemal serological test and treponemal serologic test respectively. Respondents was diagnosed as syphilis when the results of RPR titer $\geq 1:2$ and positive TPHA. Once the laboratory test results obtained, the respondents received treatment as well as counselling sessions.

Information on risk factors was obtained through interviews with a structured questionnaire. Exploring the risk factors includes the factors related to the type and work duration as FSW, clinical history, and behavioral treatment. Data were analyzed using STATA version 9 with Cox regression.

This study has obtained permission from the Ethics Commission, NIHRD and the Ministry of Home Affairs.

RESULTS

Table 1 shows that the Syphilis prevalence in 7 cities is 12.3 % (214), and the highest one occurs in indirect FSW which is about 19.2% (89). The greatest proportion of syphilis was found in Makassar which is about 55.2% (138) and mostly occurs in indirect FSW about 53% (87). Other cities have lower prevalence of syphilis around below 10% and the lowest was found in Samarinda which about 0.8% (2). While in Tangerang city, all respondents are direct FSW.

Furthermore, table 1 shows the risk of FSW who have multiple anonymous sexual partners 7% higher compare with FSW who do not have multiple anonymous sexual partners. The FSW who has been working less than 3 months have

higher risk of syphilis compared to the WPS who has been working more than 3 months.

In Table 2, it shows a model of analysis results, about how to seek the treatment, type of FSW, and the location of FSW become the dominant factor on the risk of syphilis.

About the way the FSW get the treatment, for those who come to the health facilities have about 1.49 times higher risk of syphilis rather than those who seek treatment to a special treatment for syphilis [adjusted relative risk (RRa) = 1.49; Confident Interval (CI) = 1.07 to 2.06 P value = 0.017].

Furthermore, indirect FSW have a risk of 85% higher to suffer syphilis rather than direct FSW (RRa = 1.85; CI = 1.45 to 2.36; P value = 0.000).

Table 1. Correlation of sexual partners, periods of being FSW with the risk of syphilis

	Syphilis				Crude relative risk	95% confidence interval	P
	Negative (n=1536)		Positive (n=214)				
	n	%	n	%			
Cities							
Samarinda	248	99.2	2	0.8	1.00	Reference	-
Timika	245	98.0	5	2.0	2.5	0.48-12.88	0.273
Pontianak	243	97.2	7	2.8	3.5	0.73-16.84	0.118
Yogyakarta	240	96.0	10	4.0	5	1.09-22.81	0.038
Tangerang	224	89.6	26	10.4	13	3.08-54.77	0.000
Kupang	224	89.6	26	10.4	13	3.08-54.77	0.000
Makassar	112	44.8	138	55.2	69	17.08-278.66	0.000
Multiple anonymous sexual partners							
No	771	88.2	103	11.2	1.00	Ref	-
Yes	765	87.3	111	12.7	1.07	0.82-1.40	0.596
Periods of being FSW							
0-3 months	209	90.9	21	9.1	1.00	Ref	-
3-12 months	411	89.2	50	10.8	1.19	0.71-1.97	0.508
>12 months	916	86.5	143	13.5	1.48	0.93-2.33	0.904

Table 2. Relationship among dominant factor, and risk of syphilis

	Negative (n=1536)		Positive (n=214)		Adjusted relative risk*	95% confidence interval	P
	n	%	n	%			
	Seeking treatment						
Public Health Facilities	1217	88.5	158	11.5	1.00	Reference	-
Clinic	132	81.0	31	19.0	1.49	1.07-2.06	0.017
Get own medicine	92	92.9	7	7.1	0.45	0.22-0.93	0,032
Without treatment	95	84.1	18	15.9	1.10	0.70-1.71	0.672
Type FSW							
Direct	1161	90.3	125	9.7	1.00	Reference	-
Indirect	375	80.8	89	19.2	1.85	1.45-2.36	0.000
Location							
Java	493	98.6	7	1.4	1.00	Reference	-
Outside Java	1043	83.4	207	16.6	11.61	5.50-24.49	0.000

*Adjusted each other among variables listed on this table

Meanwhile, in terms of the location, compared with FSW located in Java, the FSW located outside Java has a 11.61 -fold risk for syphilis infection (ARR = 11.61 ; CI = 5.50 to 24.49, P = 0.000).

DISCUSSION

In this research, the region of study only covers 7 selected cities so that the analysis is not sufficient to represent Indonesia. Another limit is about the serological examination of syphilis which is not able to distinguish the stages of syphilis, though it has been recognized to have a high sensitivity and specificity.^{2,5}

Syphilis prevalence found in this study is about 12.3%. That was a bit higher than the prevalence of syphilis in direct WPS based on the Integrated Biological and Behavioral Survey (IBBS) in 2011 and 2009 which were carried out in several different cities in Indonesia. According to IBBS prevalence, direct FSW is greater than indirect FSW. The syphilis prevalence in this study is different with prevalence of syphilis on IBBS due to the location and time of research.^{6,7}

According to the various results of analysis, it shows that the respondents who try to find treatment to health care facilities have higher risk of syphilis about 11.5 times than other respondents (ARR = 11.5; Confident Interval (CI) = 1.14 to 2.20 P value = 0.006). Research in Ghana and Uganda shows the severity and symptoms of disease will affect people with syphilis to seek medical facilities.⁸ The primary and secondary syphilis shows the symptoms that may cause the respondent to visit health facilities including genital ulcers and eruption of the skin.^{2,5}

Most women suspend their willing to seek treatment since they thought that they suffered normal limits of symptoms.⁹ The painless lesions in the genital will arouse them seeking the treatment. The research conducted by Malek et al. in Pittsburg in 1999-2002 showed the most IMS patients suspended the examination after 7 days of suffering the symptoms.⁹

In this study, it is found that type of FSW also affects the syphilis cases significantly. Indirect

female sex workers (FSW) have the risk about 19.2 times of suffering from syphilis compared to direct FSW (RRa = 19.2; CI = 1.14 to 1.86; P = 0.002). Several studies in other countries show some different patterns. Research conducted by Li et al. Liuzhou, China showed a greater risk of syphilis found in FSW who work to offer their service on the street rather than the FSW who only receive calls for services over the phone.¹¹ However, during 2009-2012 it showed different results from the study conducted in Shenzhen. In the study, it did not reveal any significant relationships between the types of FSW with the syphilis cases. This is due to the research that claims that the direct FSW who works on the street are those who work in a salon and a small club, while indirect FSW are largely a group of FSW who work in hotels, karaoke bars and nightclubs, so it is not be able to be compared directly in this study.¹

The indirect FSW have the greatest risk of syphilis rather than the direct one since they are not reached by the STI control program in Indonesia. The prostitution covered by other profession, like masseur and escort bar and karaoke, cause difficulties to be recognized by health professionals and outreach.¹⁰

Based on this study, it is found that the respondents from outside Java have the high risk of suffering from syphilis about 3.16 times rather than the respondents who live in Java. This pattern is similar to the studies found in China, which indicates that the respondents in a region also give influence towards the syphilis case related to the FSW mobility and the availability of health facilities.¹¹

The FSW group is one of the high-risk populations which becomes a source of infection transmitted diseases including syphilis. The data obtained from population studies can be used to overcome the STI.¹²

In conclusion, the location of work for FSW which are outside Java shows the high risk of being infected with syphilis rather than those who work in Java. Then, it also about comparison for direct and indirect FSW, those

who seek treatment immediately to the doctor may be indicated easily rather than those who seek treatment in health care facilities.

Acknowledgment

The authors wish to thank all subjects who participated in this study, Syphilis research team laboratory, data management and data collection, and Center for Biomedical and Basic Tecnology of Health for funding this research.

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