

Treatment seeking behaviors related to gonorrhea among female sex workers in 7 cities in Indonesia

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Abstrak

Latar belakang: Gonore merupakan salah satu infeksi menular seksual yang menjadi permasalahan besar kesehatan terutama pada wanita penaja seks (WPS) di Indonesia. Tujuan dari artikel ini adalah untuk melihat hubungan antara pola pencarian pengobatan gonore.

Metode: Data berasal dari studi potong lintang dengan responden WPS yang dipilih secara cluster random sampling dari 7 kota (Timika, Yogyakarta, Kupang, Samarinda, Pontianak, Makassar dan Tangerang) di Indonesia pada tahun 2007. Diagnosis gonore berdasarkan hasil pemeriksaan Polymerase Chain Reaction (PCR) menggunakan Amplicor CT/NG dari Roche yang telah disetujui oleh World Health Organization (WHO) sebagai alat skrining gonore.

Hasil: Proporsi responden yang menderita gonore sebesar 26.1% (404/1750). Persentase penderita gonore yang melakukan upaya pengobatan terdistribusi hampir sama dengan yang mengunjungi fasilitas kesehatan / dokter dengan yang membeli obat sendiri. Subyek yang melakukan pengobatan tradisional memiliki risiko 44% lebih tinggi menderita gonore dibandingkan dengan subyek yang melakukan pengobatan di fasilitas kesehatan / dokter [risiko relatif suaian (RRa) = 1,44; P = 0.044]. Sedangkan subyek yang tidak diobati dibandingkan dengan yang berobat ke fasilitas kesehatan / dokter lebih berisiko 55% menderita gonore (RRa = 1.55; P = 0.002).

Kesimpulan: Wanita penaja seks yang melakukan maupun yang tidak pengobatan tradisional dibandingkan dengan yang mengunjungi fasilitas kesehatan/dokter memiliki risiko yang lebih tinggi menderita gonore. (*Health Science Indones 2013;2:87-92*)

Kata kunci: gonore, wanita penaja seks, Indonesia

Abstract

Background: Gonorrhea is one of sexually transmitted infections that have become a major health problem especially among female sex workers (FSW) in Indonesia. The objective of this article is to identify the relationship between treatment seeking behaviors, the sites of study and gonorrhea among FSW.

Methods: The data that analyzed derived from cross sectional study and the respondents were direct FSW (1286) and indirect FSW (464) chosen by cluster random sampling from 7 cities in Indonesia in 2007. Endoservical swab were collected from respondents who fulfilled the inclusion criteria. The Diagnosis of gonorrhea confirmed in accordance with the results of PCR by Amplicor CT / NG from Roche which has high sensitivity and has been approved by The World Health Organization (WHO) as a screening test.

Results: The proportion of respondents who had gonorrhoea was 26.1% (404/1750). The subjects had and who did have Gonorrhea were similarly distributed with respect to frequency of mode of treatment in term of health facility /medical doctor and buying drug by herself. Compared with those who had mode of treatment at health facility /medical doctor, those who had traditional treatment had 44% high risk to be gonorrhoea [adjusted relative risk (RRa) = 1.44; P = 0.044]; and those who had not treated had 55% more risk to be gonorrhea (RRa = 1.55; P = 0.002).

Conclusion: Female sex worker who had traditional treatment, and did not have treatment had higher risk to be gonorrhea compared to subjects who visited health facility/medical doctor. (*Health Science Indones 2013;2:87-92*)

Key word: gonorrhea, female sex worker, Indonesia

Treatment seeking behavior is a determinant of the success controlling sexually transmitted infections (STI). Effectiveness of the STI's management can reduce HIV incidence. During this time, many patients with STI's symptoms are still seeking for treatment beyond STI clinics such as private clinics, pharmacies, drug stores, pharmacies, and traditional medicines.^{1,2} In addition, type of female sex workers (FSW) also affected the incidence of gonorrhea infection. Direct female sex worker is a woman whose main job as a sex worker only. Indirect FSW is a woman whose main job is not a sex worker but covertly with another jobs, such as, massage parlor or waitress in a bar.³ Compared with indirect FSW, direct FSW will be easily accessible by the STI clinics.

The research conducted in Laos showed one-third of FSW who suffered an infection of the reproductive organ and STI did not seek any treatments. Whereas, the others was acquired from the drop-in center (53%), hospitals (23%), private clinics (12%), pharmacies (9%), and herbalist (2%).² Treatment seeking behaviors among FSW are varies and do not follow the standard guidelines. Thus, the infection persists and leads to antibiotic resistances in which complicates the efforts to reduce the incidences.^{2,4}

Data in Indonesia about treatment seeking behavior among FSW is very limited, most of the data only show FSWs who are treated at health facilities, in proportion of direct and indirect respectively at 45% and 43%. They did not reveal the treatment seeking behaviors of other FSWs which were not treated at health facilities.⁵

The results of the prevalence study of STI and reproductive tract infections in 10 cities within Indonesia in 2005 revealed 69% of direct FSW and 57% of indirect FSW had been infected with one or more sexually transmitted infections, the proportion of indirect FSW were smaller than the direct FSW in almost all cities.⁶

The objective of this article is to identify the relationship between treatment seeking behaviors, the sites of study and gonorrhea among FSW.

METODE

The data analyzed in this article was derived from the survey of reproductive tract infections among FSW in Kupang, Samarinda, Pontianak, Yogyakarta, Timika, Makassar, and Tangerang in 2006-2007 that conducted by National Institutes of Health Research and Development, Sub Directorate of AIDS and

STI, Directorate General of Disease Control and Environmental Health and Global Fund.

The purpose of the survey is to define the prevalence of gonorrhea, chlamydia, syphilis, herpes simplex type – 2, trichomoniasis, vaginosis bacterialis, and candidiasis among FSW in 7 cities and to determine demographic characteristics and high risk behaviors of FSW. It was subsequent of the previous survey in 2003 and 2005 in 13 different cities in Indonesia. The result obtained from 2007 was expected to complete the previous survey data.⁶

The targets of cross sectional study in 2007 were direct and indirect FSW with inclusive requirements as follows: (1) age 15-50; (2) not menstruating and (3) not pregnant.

The first step, the Researcher composed a sample frame using the data from district health services and non-governmental organization (NGO) to outreach prostitutes' localizations. If the mapping results indicate numbers of samples exceed than expected, so the first 250 FSWs who came and met the inclusive criterion will be recruited as respondents. Secondly, the FSWs were invited to participate in the survey. The invitations were distributed by NGO to the pimps.

Implementation of the survey itself was preceded by interviewing selected respondents with women researchers from NIHRD accompanied by the clinic doctors at the specific field clinic, ensuring the confidentiality of respondents. Then doctors and midwives examined and took two endocervical samples to be used for microscopic, culture and PCR examination. Once it was done, the doctor and a woman researcher from NIHRD gave counsels and medicines to the respondent in accordance with the results of physical examinations and simple laboratory results.

The first endoservical swab was used for microscopic examination and culture. The microscopic examination was conducted in place as a presumptive diagnoses and guide of treatment. The presumptive diagnoses of gonorrhea according to the World Health Organization (WHO) established by direct microscopic examination of endocervical or urethral discharge body with gram staining. It will be found as gram-negative intracellular diplococci. A definitive diagnosis of infection by the WHO is to find colonies of *Neisseria gonorrhoeae* in bacterial growth medium.

Whilst the second endoservical swab for PCR sent to Integrated Laboratory, Centre for Biomedical and Pharmaceutical, NIHRD, within 4-8°C in two days.

PCR duplex examination used the Amplicor CT/NG test from Roche based on the principle of Nucleic Acid Amplification Technique (NAAT) that has been approved by the WHO as a screening tool. Diagnosis of gonorrhea in this article uses PCR technique.

Information about risk factor was obtained through interviews used a structured questionnaires. The risk factor that explored in this study includes those related to socio demographic, history of previous STI, sexual behavior, and treatment seeking behavior.

The process of entry, editing, cleaning and data analysis was conducted at the Centre Biomedical and Pharmaceutical. Data Analysis used STATA version 9.0, with Cox regression method hierarchy backward elimination (BHE).

This survey received ethical approval from Ethics Committee, NIHRD, and permit of research implementation from Ministry of Home Affair.

RESULTS

Table 1 shows that there 26.1% (404/1750) of our subjects had Gonorrhea. Subjects had and who did have Gonorrhea were similarly distributed with respect to age, education, and marital status.

Compared with direct FSW, the indirect FSW more likely had 18% more risk to be gonorrhea [crude relative risk (RR) = 1.18; 95% confident interval (CI) = 0.95 – 1.46; P = 0.118].

Table 2 shows that subjects had and who did have Gonorrhea were similarly distributed with respect to frequency of special medical check-up for the last 3 months, Clinical symptoms, and Condom used. However, those who never used condom used compared with who always condom used more likely had higher risk to be gonorrhea.

Table 3 (our model) reveals that mode of treatment and site of study were dominant risk factors related to Gonorrhea.

Table 3 shows that subjects had and who did have Gonorrhea were similarly distributed with respect to frequency of mode of treatment in term of health facility / medical doctor and buying drug by herself. In addition subject who had and did not have gonorrhoea were similiary distributed in Serang and Kupang.

Compare with those who had mode of treatment at health facility /medical doctor, those who had traditional treatment had 44% high risk to be gonorrhoeae [adjusted relative risk (RRa) = 1,44; P = 0.044]; and those who had not treated had 55% more risk to be gonorheae (RRa = 1.55; P = 0.002).

Table 1. Several demographic characteristics and risk of gonorrhea

	Gonorrhea				Crude relative risk	95% confidence interval	P
	Negative (n=1346)		Positive (n=404)				
	n	%	n	%			
Age							
15-20 years	95	73.1	35	26.9	1.00	Reference	
20-24 years	372	78.9	99	21.1	0.78	0.53-1.14	0.208
25-29 years	369	76.2	115	23.8	0.88	0.60-1.28	0.517
30-34 years	240	75.5	78	24.5	0.91	0.61-1.35	0.647
35-39 years	165	80.1	41	19.9	0.73	0.47-1.16	0.189
40-50 years	105	74.5	36	25.5	0.94	0.59-1.51	0.823
Education							
Never	262	74.8	88	25.2	1.00	Reference	
Elementary school	436	76.6	133	23.4	0.92	0.71-1.21	0.596
Junior high school	609	78.6	166	21.4	0.85	0.65-1.10	0.224
Senior high school and above	39	69.6	17	30.4	1.20	0.71-2.02	0.477
Marital status							
Married	235	74.8	79	25.2	1.00	Reference	
Never married	232	76.6	71	23.4	0.93	0.67-1.28	0.664
Divorced	774	48.0	218	21.0	0.87	0.67-1.12	0.303
Type of female sex worker							
Direct	1003	78.0	283	22.0	1.00	Reference	
Indirect	343	73.9	121	26.1	1.18	0.95-1.46	0.118

Table 2. Frequency of special medical check-up, clinical symptoms, condom used and risk of gonorrhea

	Gonorrhea				Crude relative risk	95% confidence interval	P
	Negative (n=1346)		Positive (n=404)				
	n	%	n	%			
Frequency of special medical check-up for the last 3 months							
4-9 times	19	76.0	6	24.0	1.00	Reference	
2-3 times	139	76.8	42	23.2	0.96	0.41-2.27	0.938
1 time	291	80.8	69	19.2	0.79	0.34-1.83	0.597
Never	897	75.8	287	24.2	1.01	0.44-2.26	0.981
Clinical symptoms							
None	993	77.5	288	22.5	1.00	Reference	
Leucorrhea	353	75.3	116	24.7	1.10	0.88-1.36	0.386
Condom used							
Always	947	78.0	267	22.0	1.00	Reference	
Seldom	107	79.3	28	20.7	0.94	0.63-1.39	0.768
Never	292	72.8	109	27.2	1.23	0.98-1.54	0.062

Table 3. Relationship between mode of treatment, and risk of gonorrhea

	Gonorrhea				Adjusted relative risk*	95% confidence interval	P
	Negative (n=1346)		Positive (n=404)				
	n	%	n	%			
Site of study							
Kupang	229	91.6	21	8.4	1.00	Reference	
Samarinda	199	79.6	51	20.4	2.29	1.41-3.72	0.001
Pontianak	120	48.0	130	52.0	6.08	3.96-9.32	0.000
Makassar	197	78.8	53	21.2	2.06	1.25-3.35	0.004
Timika	205	82.0	45	18.0	2.05	1.26-3.35	0.004
Yogyakarta	176	70.4	74	29.6	3.16	2.00-4.98	0.000
Serang	220	88.0	30	12.0	1.34	0.79-2.28	0.267
Mode of treatment							
At health facility/medical doctor	1069	77.8	306	22.2	1.00	Reference	
Buying drug by herself	129	79.2	34	20.8	1.00	0.73-1.39	0.953
Traditional	72	72.7	27	27.3	1.44	1.01-2.07	0.044
Not treated	76	67.3	37	32.7	1.55	1.17-2.05	0.002

*Adjusted each other between variable listed on this table and type of female sex worker

DISCUSSION

There are several limitations in this study. Firstly, it only conducted in seven cities that selected purposively so the results could not describe Indonesia. Secondly, there might be biases on the frequency of treatment and treatment seeking behavior of respondents in the last three months. However, several efforts have been made to minimize the bias such as the interviewers were local health workers who know the record of most of the respondents.

Prevalence of gonorrhea infection among FSW in 7 cities in Indonesia defined by using PCR method was 26,1% (404/1750) meanwhile in the period of 2001-

2007 the prevalence of gonorrhea in Bangladesh (35.5%), China (37.8%), Papua New Guinea (31%). [6] Joesoef who conducted a research in Surabaya in 1997 found that the prevalence of gonorrhea at 24%, [7] whilst researched in Kramat Tunggak, Jakarta conducted by Lesmana et al. in 1996 reveal prevalence of gonorrhea about 30.5%. [8] Integrated Biology and Behavioral Surveillance (IBBS) conducted by Sub Directorate AIDS and IMS of Ministry of Health in 19 cities within Indonesia in 2007 revealed that prevalence of gonorrhea among direct FSW about 32%, followed by transgender (29%), man sex with man (20%) and Indirect FSW (14%). [9] Recent study of IBBS in 11 provinces within Indonesia in 2011 revealed that the highest

prevalence of gonorrhea was among direct FSW about 38%, followed by other risk groups which is transgender (29%), man sex with man (21%), and indirect FSW (19%).⁵ Compared with our study, the IBBS data was higher. It shows that prevalence of gonorrhea in Indonesia remains high and need to be controlled.

Proportion of gonorrhea among direct FSW (22.0%) was lower than indirect FSW (26.8%). Multivariate analysis showed that type of FSW also affected incidence of gonorrhea. The indirect FSW more likely had 18% more risk to be gonorrhea [crude relative risk (RR) = 1.18; 95% confident interval (CI) = 0.95 – 1.46; P = 0.118]. The research that conducted in Cambodia, in 2011, revealed about 48,7% of direct FSW, which is diagnosed by clinical and laboratory presumptive examination had cervicitis, while in indirect FSW about 65,2%. But prevalence of gonorrhea among direct FSW (9,8%) was higher compared to indirect FWS (3,8%).^[10] IBBS, 2011 showed that the highest prevalence of gonorrhea could be found among direct FSW (38%), compared than other risk group, while proportion of gonorrhea among indirect about 19%.⁵

Multivariate analysis reveal site of study were dominant risk factors related to Gonorrhea. Table 3 shows that subjects had and who did have Gonorrhea were similarly distributed with respect to frequency of mode of treatment in term of health facility/ medical doctor and buying drug by themselves.

Proportion of gonorrhea who did not treated (32.7%) almost the same that found in Laos, that one-third respondents with sexually transmitted infection were untreated. In Laos 2% respondents visited herbalist to cure the infections. Compare with those who had mode of treatment at health facility /medical doctor, those who had traditional treatment had 44% high risk to be gonorrhea [adjusted relative risk (RRa) = 1.44; P = 0.044]; and those who had not treated had 55% more risk to be gonorrhea (RRa = 1.55; P = 0.002).

In this survey, 32.7% FSW who did not treated and 27.3% FSW who did traditional treatment had infected by gonorrhea, its proportion was higher than FSW who treated in health facility / medical doctor. If FSW infected with gonorrhea services their clients without using condoms correctly, it will transmit the infection to the clients and to the spouse of their clients. The transmission will continue and the incidence of gonorrhea remains higher. In contrary

the higher proportion of FSW without gonorrhea were found among FSW who seek treatment in health facility / medical doctor and buying medicine by themselves respectively, 77.8% and 79.2%.

Research in Uganda in 2007 explored the predictor factors of using traditional medicine among patients with sexually transmitted infection revealed that the respondents believed traditional medicines prevent STI, and completely cure STI.¹¹

The IBBS 2011 revealed that majority of indirect female sex worker did not visit STI clinics in the last three month. And treatment seeking behavior to health facility had decreased compared to IBBS 2007 data that 45% direct FSW and 43% indirect FSW visited health facilities.^{5,9}

Many factors influence treatment seeking behavior of STI patients, which are (1) The infection was asymptomatic or perception of illness, (2) stigma and discrimination, and (3) constrain and obstacles in accessing sexual health services.¹²

In addition, subjects who had and did not have gonorrhoeae were similarly distributed in Serang and Kupang. Subject who distributed in other site of study had higher risk than distributed in Kupang and Serang. There could be some possibilities that the proportion of gonorrhea in these two locations were lower than others. First, The FSWs in those locations visited the health facility / medical doctor to perform treatment of STI. Secondly, even there were no symptom of STI among the FSW, they came to health facility / medical doctor to consult their reproductive health. Another possibility was the condom usage as the prevention of STI. It showed socialization of the STI and how to treat the STI correctly among FSWs is very important to decrease the incidence of gonorrhea. So the program needs higher effort to reduce the risk of gonorrhea among high risk groups in other 5 sites.

In conclusion, female sex worker who had traditional treatment, and did not have treatment had higher risk to be gonorrhea compared to subjects who visited health facility/medical doctor.

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REFERENCES

1. Zachariah R, Nkhoma W, Harries AD, et al. Health seeking and sexual behaviour in patients with sexually transmitted infections: the importance of traditional healers in Thyolo, Malawi. *Sexually Transmitted Infection*. [Internet]. 2002 Apr;78:127–9. Available from: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1744435&tool=pmcentrez&rendertype=abstract>
2. Phrasisombath K, Thomsen S, Sychareun V, et al. Care seeking behaviour and barriers to accessing services for sexually transmitted infections among female sex workers in Laos?: a cross-sectional study. *BMC Health Serv. Res.* [Internet]. BioMed Central Ltd; 2012;12(1):37. Available from: <http://www.biomedcentral.com/1472-6963/12/37>
3. Harcourt C, Donovan B. The many faces of sex work. *Sex. Transm. Infect.* [Internet]. 2005 Jun [cited 2013 Nov 7];81(3):201–6. Available from: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1744977&tool=pmcentrez&rendertype=abstract>
4. Bradley H, Asbel L, Bernstein K, et al. HIV testing among patients infected with *Neisseria gonorrhoeae*: STD surveillance network, United States, 2009–2010. 2012;2009-10.
5. Directorate General of Disease Control and Environmental Health Ministry of Health Indonesia. *Integrated biology and behavioral surveillance 2011*. Jakarta: The Directorate General; 2011.
6. Center for Biomedics and Pharmacy, National Institutes of Health Research and Development. Report of survey of reproductive tract infection among female sex workers in Kupang, Samarinda, Pontianak, Yogyakarta, Timika, Makassar and Tangerang 2006-2007. Jakarta: The Center; 2008. Indonesian.
7. Joesoef MR, Knapp JS, Idajadi A, et al. Antimicrobial Susceptibilities of *Neisseria gonorrhoeae* strains isolated in Surabaya, Indonesia. *Antimicrob. Agents Chemother.* 1994;38:2530–3.
8. Lesmana M, Lebron CI, Taslim D, et al. In vitro antibiotic susceptibility of *Neisseria gonorrhoeae* in Jakarta, Indonesia. *Antimicrob. Agents Chemother.* 2001;45:359–62.
9. Ministry of Health of Indonesia. Trends analysis of risk behavior of HIV in Indonesia, report of integrated biology and behavioral surveillance in 2007. Jakarta: The Ministry. 2009.
10. Ministry of Health of Cambodia. Evaluation of the STI management protocol for female sex workers in Cambodia. The Ministry; 2011.
11. Nuwaha F, Muganzi E. Predictors of use of traditional medicine by patients with sexually transmitted infections in Southwest Uganda. *J Altern Complement Med.* 2008;14:733–9.
12. Bureau PR, Nations U. Promoting health-seeking behaviours and quality of care [Internet]. Available from: <http://unesdoc.unesco.org>