International Journal of STD & AIDS
http://std.sagepub.com/

High rates of sexually transmitted diseases among male transvestites in Jakarta, Indonesia

M R Joesoef, M Gultom, I D Irana, J S Lewis, J S Moran, T Muhaimin and C A Ryan

Int J STD AIDS 2003 14: 609
DOI: 10.1258/095646203322301068

The online version of this article can be found at:
http://std.sagepub.com/content/14/9/609

Published by:
SAGE
http://www.sagepublications.com

International Journal of STD & AIDS 2003; 14: 609–613

ORIGINAL RESEARCH ARTICLE

High rates of sexually transmitted diseases among male transvestites in Jakarta, Indonesia

M R Joesoef MD[1], **M Gultom** MD[2], **I D Irana** MD[3], **J S Lewis** MS[1], **J S Moran** MD[1], **T Muhaimin** MD[3] and **C A Ryan** MD[1]

[1]*Division of STD Prevention, Centers for Disease Control and Prevention, MS-E04, 1600 Clifton Road NE, Atlanta, GA 30333, USA;* [2]*HIV/AIDS Prevention Project, Jakarta;* [3]*Ikatan Ahli Kesenhatan Masyarakat Indonesia (IAKMI), Jakarta, Indonesia*

Summary: Many male transvestites (*waria*) in Jakarta, Indonesia engage in unprotected receptive anal and oral intercourse with homosexual and bisexual men for pay. Although this behaviour clearly puts them at risk of sexually transmitted diseases (STDs), including HIV infection, little is known about the prevalence of STD among them. To learn the STD prevalence and its risk factors, we conducted an STD prevalence survey among *waria* in North Jakarta, Indonesia. From August to December 1999 we offered screening for rectal and pharyngeal infections with *Neisseria gonorrhoeae* (Ng), *Chlamydia trachomatis* (Ct) by DNA probe (GenProbe PACE 2) and for *Treponema pallidum* (Tp) by non-treponemal and treponemal serological tests. Of 296 participants (median age 28 years), 93% reported having been paid for sex. A total of 96% reported having had oral sex (median five times/week) and/or anal sex (median three times/week) in the last week. Ng was found in the rectum of 12.8% and the pharynx of 4.2%; Ct was found in 3.8% and 2.4%, respectively. A total of 43.6% had reactive non-treponemal and treponemal tests. Of the 129 with positive treponemal tests, 42.6% had non-treponemal test titres greater than 1:8. In the logistic regression model, *waria* who were younger ($\leqslant$25 years old) had a significantly 3.5 times risk of Ng and/or Ct infections than older *waria* ($>$25 years old). Because only 12% of *waria* stated that they consistently used condoms during any sex act, it is important to warn them that STD/HIV transmission can occur with either anal or oral sex and that the risk of either anal or oral transmission can be reduced by condom use. In addition, high rates of asymptomatic syphilis and rectal gonorrhoea warrant a periodic screening and treatment for these infections in this population. Because *waria* have the highest rates of HIV and their clients consist of homosexual and bisexual men, successful prevention efforts in *waria* could help curb the spread of the epidemic.

Keywords: STD, syphilis, transvestites, Indonesia

Introduction

According to UNAIDS/WHO, Indonesia is considered a country with a low-level HIV epidemic[1]. A low epidemic is defined as a low prevalence of HIV in high-risk populations ($<1\%$)[1,2]. However, in Jakarta, Indonesia male transvestites (*waria*) have the highest level of HIV prevalence (6%) among groups studied to date[2]. Previous studies have also shown high rates of HIV in transvestite population in other countries[3–5]. In the Dominican Republic, male transvestites had the highest level of HIV prevalence (34.4%) when compared to homosexual, gigolo, or bisexual men[3]. In Rio de Janeiro, Brazil, 64% of transvestite sex workers were HIV positive[4], and in Asunción, Paraguay, 27% of male transvestite sex workers were HIV positive[5].

In Indonesian society, the role of *waria* as entertainers goes far back to the 12th century of Hinduism kingdom. During that time, the *waria* were revered as singers, dancers, and comedians entertaining the nobles. In the modern time, *waria*'s occupation extended beyond entertainment to hairdressers, beauticians, and sex workers. Many *waria* in Jakarta, Indonesia engage in unprotected receptive anal and oral intercourse with homosexual and bisexual men for pay. Although this behaviour clearly puts them at risk of HIV/STD infection, little is known about the prevalence of STD and its sexual risk behaviour, especially among those who live close to the harbour north of Jakarta. Because STD can be used as an indicator

Correspondence to: Dr M R Joesoef
E-mail: mrj1@cdc.gov

for high-risk behaviour and behavioural information directs the provision of services, we conducted a survey of STD and its associated risk factors among *waria* in north Jakarta.

Methods

The study population consisted of 296 *warias* who were mostly recruited from North Jakarta (an estimated 400 *warias* live in North Jakarta). We established a clinic in North Jakarta specifically to serve *waria*. From August to December 1999, we invited *waria* (whether symptomatic or not) to this clinic for free primary health care services and health education. Of the 323 *warias* recruited, 27 refused to participate in this survey. The Institutional Review Board at the Centers for Disease Control and Prevention and the Ethics Committee at the Indonesia Ministry of Health approved this survey.

A team of outreach workers who worked closely with *waria*, recruited *waria* for the survey and explained and obtained consent for participation. Trained interviewers administered the questionnaires at the clinic in the form of multiple choice and open-ended questions. This questionnaire consisted of questions on demographic and socioeconomic characteristics (age, birth place, education, working as sex worker, and fee per sex act), sexual behaviour characteristics (age at first sexual intercourse, age at first paid intercourse, duration in commercial sex industry, and frequency of oral or anal sex in the last week), and condom use (ever used condom, frequency of condom use in the last month with steady partners or clients).

At the clinic, a team consisting of a dermatovenereologist, a nurse, and a laboratory technician examined participants and collected specimens. The examination included genital, rectal, perianal, and oropharyngeal examinations for ulcers, warts, and discharges. Participants were tested for rectal and pharyngeal infections with *Neisseria gonorrhoeae* (Ng) and *Chlamydia trachomatis* (Ct) by DNA hybridization probe (GenProbe PACE 2, San Diego, CA, USA) and for *Treponema pallidum* (Tp) by RPR (rapid plasma reagin) non-treponemal (Becton Dickinson Microbiology System, MD, USA) and treponemal (Determine, Abbott Laboratories, IL, USA) serological tests. We also collected specimens from the urethra, rectum, and pharynx for Ng culture. Because of problems with contamination, we did not include the results of Ng culture in the analysis.

We used the following statistical analyses: Chi-square or exact test for univariate analysis and logistic regression model for multivariable analysis treating infections of gonorrhoea and/or chlamydia and syphilis seroreactivity (seroreactivity for treponemal test and RPR titre $>1{:}8$) as separate response variables. In our analysis, we separated the infections of gonorrhoea and chlamydia for syphilis seroreactivity because the gonorrhoea and chlamydia infections reflected current infections while the syphilis seroreactivity reflected both current and past (inadequately treated) infections. We adjusted the logistic regression analysis with socio-demographic variables (age, level of education) and known risk factors of STD (frequency of oral and/or anal sex and use of condom). Because most *warias* engaged in both oral and anal sex, we were unable to separate *waria* who used only oral or anal sex in the last week. We also computed the odds ratios (ORs) with their 95% confidence intervals (95% CIs).

Results

Most *warias* were young, had a low-income and originated from outside of Jakarta (Table 1). About one-third had equal or less than elementary education. A total of 41.9% had steady partners. Of those with steady partners, only 12.1% always used condoms with steady partners in the last month. Only 11.6% reported always using condoms with clients in the last month. Almost all *warias* (93.2%) worked as sex workers. They started having intercourse early (median age of 15 years) and working as sex workers at a young age (median age of 18 years). Of those who reported sexual activities in the last week, 94.4% had both oral and anal sex.

The prevalence of syphilis seroreactivity (seroreactivity for both RPR and treponemal tests) was

Table 1. Selected socio-demographic characteristics and sexual behaviours of *waria* in Jakarta, Indonesia

Characteristics	% (*n*)
Median age—years	28
Born in Jakarta	19.0 (56)
⩽Elementary school education	39.2 (116)
Has a steady partner	41.9 (124)
Worked as sex worker	93.2 (276)
Median age at first intercourse—years	15
Median age at first paid intercourse—years	18
Median duration of paid sex—years	9
Had oral sex in the last week	96.2 (202)
Median frequency of oral intercourse/week	5
Had anal sex in the last week	96.1 (199)
Median frequency of anal intercourse/week	3
Median fee per sex act—US$	1.25
Ever used condom	67.6 (200)
Used condom in the last month with steady partner	
Always	12.1 (15)
Often	6.5 (8)
Seldom	12.9 (16)
Sometimes	12.9 (16)
Never	55.7 (69)
Used condom in the last month with clients	
Always	11.6 (32)
Often	12.7 (35)
Seldom	19.9 (55)
Sometimes	12.7 (35)
Never	43.1 (119)

Table 2. Prevalence of STD by site among *waria* in Jakarta, Indonesia

Prevalence	% (*n*)
Gonorrhoea	
Rectum	12.8 (37)
Pharynx	4.2 (12)
Either	15.9 (46)
Chlamydia	
Rectum	3.8 (11)
Pharynx	2.4 (7)
Either	6.2 (18)
Syphilis serologic reactivity*	43.6 (129)
RPR	
1:2	16.3 (21)
1:4	28.7 (37)
1:8	12.4 (16)
>1:8	42.6 (55)

*Seroreactivity for both rapid plasma reagin (RPR) and treponemal test

very high (43.6%) (Table 2). Of those with syphilis seroreactivity, 42.6% had RPR titres greater than 1:8. Of six *warias* with ulcers, five *warias* had syphilis seroreactivity. Of those with syphilis seroreactivity, 60.5% reported never having had any ulcers. The prevalence of gonorrhoea was also high, especially in the rectum (12.8%). Of those with rectal gonorrhoea, 91.9% did not report anorectal symptoms (pain during intercourse or rectal discharge). The prevalence of rectal chlamydia was 3.8%. Of those with rectal chlamydia infections, none reported anorectal symptoms (pain during intercourse or rectal discharge). The prevalence rate of rectal infection was higher than pharyngeal infection.

The combined prevalence of rectal and pharyngeal gonorrhoea and/or chlamydia infections was 18.3% and was similar by level of education, frequency of sex in the last week, median fee per sex act (data not shown), and frequency of condom use with clients in the last month (Table 3). In the logestic regression analysis, we found that *warias* equal or younger than 25 years old had a 3.5 times higher risk of gonorrhoea and/or chlamydia infections than those older than 25 years (Table 3). In contrast, syphilis seroreactivity (seroreactivity for treponemal test and RPR titre >1:8) was less common among young *waria*—13.8% in *waria* equal or younger than 25 years old and 21.7% in *waria* older than 25 years old; an adjusted odds ratio of 0.5. *Warias* who engaged in sexual intercourse more than four times a week had a 2.2 higher risk of syphilis seroreactivity than those who had sex equal or less than four times per week.

Discussion

Most *warias* reported frequent, unprotected anal and oral sexual intercourse for pay. The prevalence of syphilis serologic reactivity was very high and infections with gonorrhoea and/or chlamydia were high. Daili *et al.* in 1998 also reported high rates of syphilis serologic reactivity (67.9%) and pharyngeal infections of gonorrhoea (19.2%) and chlamydia (10.3%) among *warias* from east and centre of Jakarta[6]. The higher rates in the study of Daili might be due to differences in study population. In the present study, we recruited *waria* from the community and referred them to a general clinic setting while Daili recruited *waria* at an STD clinic setting. It is possible that recruitment and referral to the general clinic setting might attract more asymptomatic *waria* than recruitment at the STD clinic setting. The Daili study reported that 28% of *waria* had symptoms (pain during intercourse) while only 5% of the *waria* in the present study

Table 3. Percentage of *waria* with Ng/Ct*, syphilis† and their odds ratios by selected characteristics

	Ng/Ct*		Syphilis†	
Characteristics	% (*n*)	Adjusted‡ odds ratios (95% CI)	% (*n*)	Adjusted‡ odds ratios (95% CI)
Age (in years)				
⩽25	29.2 (113)	3.5 (1.7–7.0)	13.8 (116)	0.5 (0.3–1.1)
>25	11.4 (176)	1.0 (—)§	21.7 (180)	1.0 (—)§
Education				
⩽Elementary	16.5 (115)	1.0 (—)§	21.6 (116)	1.0 (—)§
Junior school	16.1 (81)	0.7 (0.3–1.7)	20.9 (86)	1.2 (0.5–2.7)
⩾High school	22.6 (93)	1.2 (0.5–2.6)	12.8 (94)	0.5 (0.2–1.3)
Frequency of sex last week				
0 to 4/week	18.7 (139)	1.0 (—)§	14.9 (141)	1.0 (—)
>4/week	24.3 (103)	1.3 (0.6–2.5)	25.2 (107)	2.2 (1.1–4.3)
Condom use last month with clients				
Often to always	18.3 (120)	1.0 (—)§	18.9 (122)	1.0 (—)§
Seldom to never	19.5 (1490)	1.3 (0.7–2.6)	19.5 (154)	1.3 (0.8–2.3)

*Includes rectal and/or pharynx infections of gonorrhoea and chlamydia
†Includes seroreactivity for treponemal test and rapid plasma reagin titre >1:8
‡Adjusted for other characteristics in the table
§Reference group

had symptoms (pain during intercourse). We are not aware of other published gonorrhoea or chlamydia prevalence among male transvestites elsewhere.

Among homosexual men, gonorrhoea infections in the rectum and pharynx are often asymptomatic[7,8]. Merino *et al.* reported that 66% of anorectal gonorrhoea and 89% of pharyngeal gonorrhoea were asymptomatic[7]. Janda *et al.* reported that 62% of anorectal gonorrhoea and 89% of oropharyngeal gonorrhoea were asymptomatic[8]. In the present study, we found that 92% of *waria* with rectal gonorrhoea and 100% of *waria* with rectal chlamydia were asymptomatic. Because we did not ask *waria* about symptoms related to pharyngeal infections, we do not know the proportion of *waria* with asymptomatic pharyngeal infections. We expect this proportion was high as well. We found that among *waria* with syphilis seroreactivity, a high proportion of them (60.5%) reported never having had any ulcers.

The high proportion of asymptomatic carriers represents a public health problem that could be addressed by a screening programme. However, for a screening programme to be cost-effective the prevalence of the morbidity should be sufficiently high and cost of the laboratory testing should be low. In this population, syphilis seroreactivity and rectal gonorrhoea infection were sufficiently high (43.6% and 12.8%, respectively) and the laboratory tests for detecting these morbidities are relatively simple and inexpensive. RPR test is simple and inexpensive and GenProbe testing for rectal gonorrhoea is relatively simpler and less expensive than culture (GenProbe testing can be batched for high volume; ideal for a screening programme). In addition, Lewis *et al.* have shown that GenProbe testing for rectal and pharyngeal gonorrhoea is as good as culture[9]. In summary, our findings underscore the importance of periodic syphilis and rectal gonorrhoea screening and treatment as parts of the prevention efforts.

The finding that the risk of current gonorrhoea and/or chlamydia infections was 3.5 times greater in younger *waria* was consistent with the findings of another study among men in South Carolina, USA[10]. We did not find any published studies on the relationship between age and gonorrhoea/chlamydia among male transvestites. In contrast to gonorrhoea and/or chlamydia infections, we found a higher prevalence of syphilis seroreactivity in older *waria* than younger *waria*. However, this increased prevalence of seroreactivity in older *waria* reflects both past and current infections. For current syphilis infection, a study by Lopez-Zetina *et al.* reported a higher syphilis incidence among drug users less than 45 years old in Los Angeles, USA[11]. Taken together the findings imply that prevention efforts should be targeted to this young *waria* population who are at higher risk for active infections.

A high proportion of *waria* (96.1%) engaged in anal sex in the last week with a high frequency (median of three times/week). Summary analysis of studies from Europe and USA indicate that, per-act, HIV infectivity of receptive anal sex is about 20 times greater than vaginal sex[12]. *Waria* also tended to initiate sex with adolescent, a vulnerable group. With this high rate of high-risk behaviour and syphilis seroreactivity *waria* clearly have the potential for HIV acquisition and transmission[13]. In addition, a high proportion of *waria* (96.2%) also engaged in oral sex with a greater frequency (median of five times/week) than anal sex. Per-act risk of HIV infectivity through unprotected receptive anal and oral sex with HIV positive or unknown status partners was 0.27% and 0.04%, respectively[14].

Although anal sex poses a great risk of STD/HIV infection than oral sex, a recent study has shown that unprotected oral sex between men might be responsible for as many as 8% of HIV infections[15]. In animal experimentation, six out of seven rhesus monkeys became infected with simian immunodeficiency virus (SIV) after non-traumatic oral inoculation with cell-free SIV[16]. In addition, several strains of SIV can infect both adult and neonatal rhesus monkeys after oral exposure[17]. In Brighton, Bristol, London, and Manchester, the syphilis epidemic was largely driven by unprotected oral sex[18]. In Singapore, female sex workers usually perceived that they had low vulnerability to HIV and STD if they engaged in oral sex and were therefore less likely to ask clients to use condoms[19]. There had been an increase in oral sex and pharyngeal gonorrhoea as a result of a successful condom promotion for vaginal sex among female sex workers[20]. The increase in oral sex and pharyngeal gonorrhoea, concomitant with a decrease in cervical gonorrhoea suggest that sex workers engaged in unprotected oral sex, which was perceived to be safer, when clients refused to use condom during vaginal sex[20]. In Bali, Indonesia, none of the clients of female sex workers used condom during oral sex[21]. As in women, in men who have sex with men oral sex is often unprotected[22,23].

In the present study, only 12% of *waria* consistently used condoms during any sex act. We did not have information on condom use during oral sex, but it is expected to be lower than 12%. In addition, *waria* engaged in oral sex more often than anal sex. Thus, in the prevention campaign, in addition to stressing the importance of condom use during anal sex, it is important to warn that STD/HIV transmission can also occur with oral sex and the risk of oral transmission can be reduced by condom use. If a condom cannot be used, ejaculation outside of the mouth may lessen the risk of STD/HIV transmission[24]. In addition, factors associated with an increased risk of oral transmission such as oral trauma, sores, inflammation, allergy, concomitant STD, and systemic immune suppression should also be conveyed in the prevention campaign. Because *waria* have the highest documented rates of HIV and their clients

consist of homosexual and bisexual men, successful prevention efforts in *waria* could help curb the spread of the epidemic.

Acknowledgements: The US Naval Medical Research Unit 2 in Jakarta provided laboratory support for this study. This work was supported by the US Agency for International Development Mission in Jakarta, Indonesia.

References

1 UNAIDS/WHO. Working Group on Global HIV/AIDS and STI Surveillance. Guidelines for Second Generation HIV Surveillance, 2000:24–5

2 Abednego H, Manaf A, Yasan S, Wibisono B, Lazzardi B. Current situation and trend of HIV/AIDS epidemic in Indonesia. *XII International Conference on AIDS*. Geneva, July 1998 [abstract no. 13150]

3 Taber SR, de Moya EA, Holmes KK, *et al.* Sexual behaviors and risk factors for HIV infection among men who have sex with men in the Dominican Republic. *AIDS* 1996;**10**:201–6

4 Surratt HL, Inciardi J, Telles P, McCoy V, Weatherby N. HIV risks among transvestites and other men having sex with men in Rio de Janeiro: a comparative analysis. *XI International Conference on AIDS*. July 1996 [abstract TU.C.2403]

5 Cabello A, Sequera M, Vera ME, Cabral M, Moreno R, Kiefer R. HIV-risk in male and female sex workers in Asunción, Paraguay: the lack of self protection. *XI International Conference on AIDS*. July 1996 [abstract TU.C.2667]

6 Daili SF, Judanarso J, Harjandi B, Indriatmi W, Makes B. Beberapa penyakit menular seksual pada kelompok waria di Jakarta (Sexually transmitted diseases in transvestite population in Jakarta). *Proceeding National Congress of the Indonesian Dermatovenerologist Association*, Ujung Pandang, Indonesia, 1998:71–4

7 Merino HI, Richards JB. An innovative program of venereal disease casefinding, treatment and education for a population of gay men. *Sex Transm Dis* 1977;**4**:50–2

8 Janda WM, Bohnoff M, Morello JA, Lerner SA. Prevalence and site pathogen studies of *Neisseria meningitidis* and *N. gonorrhoeae* in homosexual men. *JAMA* 1980;**244**:2060–4

9 Lewis JS, Fakile O, Foss E, *et al.* Direct DNA probe assay for *Neisseria gonorrhoeae* in pharyngeal and rectal specimens. *J Clin Microbiol* 1993;**31**:2783–5

10 Aral SO, Soskoline V, Joesoef RM, O'Reilly KR. Sex partner recruitment as risk factor for STD: clustering of risky modes. *Sex Transm Dis* 1991;**18**:10–17

11 Lopez-Zetina J, Ford W, Weber M, *et al.* Predictors of syphilis seroreactivity and prevalence of HIV among street recruited injection drug users in Los Angeles County, 1994–6. *Sex Transm Infect* 2000;**76**:462–9

12 Halperin DT. Neglected risk factors for heterosexual HIV infection: anal intercourse, male circumcision, and dry sex. *XIII International Conference on AIDS*. Durban, South Africa, July 2000 [abstract TuPeC3477]

13 Royce A, Sena A, Cates W, Cohen MS. Sexual transmission of HIV. *N Engl J Med* 1997;**336**:1072–8

14 Vittinghoff E, Douglas J, Judson F, McKirnan D, MacQueen K, Buchbinder SP. Per-contact risk of human immunodeficiency virus transmission between male sexual partners. *Am J Epidemiol* 1999;**150**:306–11

15 Stephenson J. HIV risk from oral sex higher than many realize. *JAMA* 2000;**283**:1279

16 Baba TW, Trichel AM, An L, *et al.* Infection and AIDS in adult macaques after non-traumatic oral exposure to cell-free SIV. *Science* 1996;**272**:1486–9

17 Ruprecht RM, Baba TW, Liska V, *et al.* Oral SIV, SHIV, and HIV type 1 infection. *AIDS Res Hum Retrovir* 1998;**14**(Suppl): 103

18 UK Public Health Officials warning of HIV risk from oral sex. Access date July 9, 2001 [hiv.medscape.com/reuters/prof/2001/07/07.06/20010705publ002.html]

19 Lian WM, Chan R, Wee S. Sex workers' perspectives on condom use for oral sex with clients: a qualitative study. *Health Edu Behav* 2000;**27**:502–16

20 Wong ML, Chan RK, Koh D, Wee S. Increase in oral sex and pharyngeal gonorrhoea: an unintended effect of a successful condom promotion programme for vaginal sex. *AIDS* 1999;**13**:1981–2

21 Fajans P, Wirawan DN, Ford K. STD knowledge and behaviours among clients of female sex workers in Bali, Indonesia. *AIDS CARE* 1994;**6**:459–75

22 Meris RS, Dufour A, Alary M. Patterns of oral sex among men who have affective and sexual relationships with other men (MASM) in Montreal. *XII International Conference on AIDS*. Geneva, July 1998 [abstract no. 23117]

23 Silva S, Portella J, Longo PHP. Unprotected oral sex among men who have sex with men (MSM). *XII International Conference on AIDS*. Geneva, July 1998 [abstract no. 23142]

24 Robinson EK, Evans BG. Oral sex and HIV transmission. [Review]. *AIDS* 1999;**13**:737–8

(*Accepted 23 July 2002*)