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ORIGINAL RESEARCH ARTICLE

Male sex workers in Antwerp, Belgium: a descriptive study

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Summary: The objective of this study was to describe the prevalence of sexually transmitted infections (STI), sociodemographic and behavioural characteristics in a population of male sex workers (MSW) in Antwerp, Belgium. Between September 1999 and March 2004, 129 MSW were reached by Gh@pro, an outreach programme providing preventive health care, free STI check-up and hepatitis B vaccination, to sex workers (SW). Sera were collected from 121 men, urine samples from 115 men and a questionnaire was filled in by 43 MSW. In 45.5% of MSW one or more STI were diagnosed (including hepatitis B), 76% on laboratory testing at first screening, 9% through symptomatology at first visit. The prevalence of HIV was 10.8%, hepatitis B virus (HBV) infection 28.9%, syphilis 12.5%, gonorrhoea 1.7% and *Chlamydia trachomatis* 9.7%. More than 50% of non-immune MSW completed their three-dose hepatitis B vaccination course. Prevalence of STI is concordant with published data on MSW; this population clearly requests and deserves particular attention and approach. There is an important difference in sociodemographic and behavioural characteristics between MSW working in the red light district and those working on the street. Health promotion should be tailored to the different subpopulations and outreach appears to be a successful tool.

Keywords: sexually transmitted infections, male sex worker, outreach programme

Introduction

Sex workers (SW) are at risk for sexually transmitted infections (STI). They are considered a core group of disease transmitters.[1] Effective preventive and curative STI services for SW are key to the control of infections in order to protect their health, their partners and the community.[2] Such services include peer education, emphasis on consistent condom use and addressing larger psychosocial, economic and human rights issues. As a consequence, increased condom use and reduction in STI have been reported in these settings.[3]

Several prevalence studies show that male sex workers (MSW) have higher prevalence rates of STI, different sexual behaviour and different demographic characteristics than female sex workers (FSW).[4–6]

This article describes the prevalence of STI and demographic, behavioural and morbidity data in the male population of SW, in comparison with the FSW in the city and Province of Antwerp.

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Materials and methods

Setting

The Health House for Antwerp Prostitutes, Gh@pro, designed as an outreach programme, offers free and anonymous screening for STI, as well as free immunization against hepatitis B when indicated. Apart from the consultation at the site of the Health House, an outreach team of doctors and nurses visits daily the workplaces of the SW in the city and Province of Antwerp. All consultations and medical acts can be performed on the spot. Anonymity is guaranteed and all consultations are free of charge.[7,8] During the first contact with new attendees, offering information on safe sex techniques and risk behaviour is the main purpose. A blood sample and urine sample are taken in order to test for HIV, hepatitis B serology, syphilis, gonorrhoea and *Chlamydia trachomatis*. On a second visit, testing results are discussed and, if indicated, hepatitis B vaccination is started. Following

consultations are planned according to the need to follow-up. During one of the visits of the health professionals, a questionnaire is completed on profession-related subjects. Between September 1999 and 1 March 2004, 129 MSW were identified and their data were analysed retrospectively in this description. The number of reached MSW increased gradually in time, starting sporadically and increasing since the fall of 2001, when the Health House started the cooperation with Boys-project, a social care centre for MSW in Antwerp.

Sampling

Serum samples are screened for anti-HIV (type 1, including subtype 'O', and type 2), anti-HBc and anti-HBs antibodies by direct chemoluminescence on ADVIA Centaur® (Bayer, Leverkusen, Germany). HBsAg is screened using MEIA on AxSYM® (Abbott, Illinois, USA). Serum samples are screened for syphilis using fluorescent treponemal antibody (FTA-abs) (Trep-Spot IF® – bio-Mérieux, Paris). If necessary (FTA-Abs $\geqslant 1/100$) activity is confirmed by rapid plasma reagin using Reditest® (Biokit SA).

Urine samples (first voided) are screened for *Neisseria gonorrhoeae* and *C. trachomatis* using the polymerase chain reaction (PCR) technique (Cobas Amplicor® – Roche, Basel, Switzerland). Positive screening for *N. gonorrhoeae* is confirmed by real-time PCR. Hepatitis B vaccination is performed with Engerix B (GlaxoSmithKline Biologicals, Rixensast), except for the year 2002 when HB-VAX-II (Aventis Pasteur-MSD, Lyon) was used.

Results

Demographics and sexual identity

From September 1999 to March 2004, 129 MSW on a total of 1120 SW were reached in different settings. MSW in Antwerp, Belgium can be divided into two main groups with different demographic, behavioural and morbidity data: one group consisting of mainly transsexuals or transvestites, working in the red light district (window prostitution), the other group soliciting on the street or in the city park, not exclusively transsexuals or transvestites. Additionally, two men who work in escort or private houses and three men who do not longer work in prostitution were included. Of the 129 MSW, 43 agreed to complete our standard questionnaire (33.3%).

The population of the Province of Antwerp consists of 1,661,119 people (1 January 2003) with an estimated number of 2000 SW in the inner city of Antwerp (455.000 inhabitants, 2004), according to the Antwerp police department statistics. The proportion of MSW is unknown.

The 129 MSW originate from 25 different countries (Table 1), 27.9% having Belgian nationality.

Table 1 Origin, mean age and sector of male sex workers (MSW) in Antwerp

Origin	No. (%) of MSW	Mean age (years)	Sector (%)
Western Europe	41(31.8)	28.6	S: 28 (68.3) W: 10 (24.4) P/E: 2 (4.9) NL: 1 (2.4)
Eastern Europe	29 (22.5)	20.6	S: 28 (96.6) W: 1 (3.4)
South America	47 (36.4)	31.3	S: 20 (42.6) W: 25 (53.2) NL: 2 (4.3)
Middle East /North Africa	5 (3.9)	29.4	S: 5
Africa	3 (2.3)	24.3	S: 3
Unknown	4 (3.1)	38.8	W: 3 (75) S: 1 (25)
Total	129 (100)	28.1	S: 85 (66) W: 39 (30) P/E: 2 (1.5) NL: 3 (2.5)

The sector is divided into four categories (S: Street; W: Window; P/E: Private houses and escort; NL: no longer)

The mean age is 28.1 years (range: 12–58; median 26.5). Fifty-three men are transsexuals or transvestites (41.1%), while 76 (58.9%) are not. The latter are men who identify themselves mostly as hetero- or bisexuals, less common as male homosexuals.

All MSW working in the red light district are transsexual or transvestite and originate mostly from Western Europe or South America. Their mean age is 33.8 years (range 21–58, median 31.5) ($n = 39$).

Men soliciting on the street are mostly young. Their mean age is 23.5 years (range 12–40, median 22) ($n = 85$); a small proportion of them are transsexual or transvestite. Eleven boys admitted to be of minor age, all originating from the Balkans, mostly Romany gypsies.

Prevalence of STI

Overall, in 45.5% of MSW one or more STI were diagnosed (including hepatitis B), through laboratory testing or clinically.

Twenty of the 129 MSW (15%) consulted Gh@pro because of specific STI-related symptoms, 12 at first visit and eight during the further study period. Mictalgia was the most common problem (12/20), in two cases combined with white discharge. The latter two were diagnosed with gonorrhoea, three others had *C. trachomatis* infection and the remaining seven non-gonococcal urethritis (NGU). All gonorrhoea infections, two chlamydia infections and four NGU occurred in MSW working in the street. Five MSW complained of penile lesions, of whom three were with a painless sore and were diagnosed with syphilis (two in the red light

district), two with painless multiple lesions had warts (both in the street area) and one with painful lesions was diagnosed as herpes genitalis (street area). One MSW working in the street consulted with a viral syndrome and was diagnosed with HIV seroconversion.

In all, 76% of STI were diagnosed through testing at first visit (Table 2), 24% via testing at later visits. If we exclude hepatitis B virus (HBV) infection, since most HBV-positive persons originate from highly endemic regions and therefore not all hepatitis B infection can be considered as STI, still 31.4% were positive for one or more STI ($n=38$).

Multiple STI diagnoses were uncommon ($n=8$; 6.6%). They were mostly present in HIV-positive men with signs of previous syphilis infection. Three men with multiple STI diagnosis had a recent *C. trachomatis* infection, of which one had an acute syphilis infection, two had serological signs of previous syphilis infection and one of them is HIV-positive.

In 32% ($n=41$) of included MSW, the STI check-up was repeated one to six times, depending on when they attended first the project. Half of those who had consecutive check-ups work in the red light district, 50% in street prostitution. In all, 60% originate from South America, the others from western and eastern Europe. At follow-up controls, four *C. trachomatis* infections were counted, one gonorrhoea, six syphilis cases and one HIV seroconversion.

The overall HIV prevalence rate was 10.8% ($n=13/120$). Twelve persons were HIV-positive at first screening. Five of them were aware of their serological status, and attended for further therapy and support. Six of the HIV-positive MSW are transsexual or transvestite, six homo- or bisexual, for one sexual identity is unknown. Eleven are from South-American origin, one is Western European, and of one man the nationality is not known.

Hepatitis B seromarkers of past infection were found in 35 men (28.9%), 20/35 originate from South America, Africa or Asia, 11 from Eastern Europe. Three Western European MSW had anti-HBc and/or anti-HBs antibodies. One had an acute HBV infection. Eleven men had been vaccinated against HBV, all in Belgium or France. Minors are vaccinated through the existing adolescent hepatitis B vaccination programmes in schools in Belgium (11–12 years).

Seromarkers for syphilis were found in 15 men, of whom nine had an active infection.

Gonorrhoea was symptomatically present in two men (19 and 28 years). One of them was re-infected after successful treatment. Chlamydia was positive in seven men at screening (6.1%). Four men were diagnosed with chlamydia infection during later controls ($n=4/41$, 9.1%), of whom one was a reinfection and three men had a first infection. Most probably all STI are profession-related.

Clinical diagnosis of other profession-related infections as non-infectious anal conditions and general problems were made in 22 men (Table 2).

Table 2 Serological results of first STI screening and other related health problems

Disease	Test	Number of positive tests on total tested No. (%)
Hepatitis B	HBsAg	4/121 (3.3)
	HBeAg	2/121 (1.6)
	Anti-HBc+anti-HBs	31/121 (25.6)
	Anti-HBc alone	4/121 (3.3)
	Anti-HBs alone*	11/121 (9.1)
HIV	Anti-HIV1	13/120 (10.8)
	Anti-HIV2	0
Syphilis	FTA (⩾100)	15/120 (12.5)
	VDRL (⩾4)	9/120 (7.5)
Gonorrhoea	PCR	2/115 (2.6)
Chlamydia	PCR	11/115 (9.6)
Hepatitis C	Former diagnosis	2/60 (3.3)
Herpes genitalis	Clinical diagnosis	1/129 (0.8)
Scabies	Clinical diagnosis	6/129 (4.6)
Lice	Clinical diagnosis	2/129 (1.6)
Non-gonococcal urethritis	Clinical diagnosis	7/129 (5.4)
Genital warts	Clinical diagnosis	1/129 (0.8)

*Vaccinated subjects according to anamnesis

HBsAg=hepatitis B surface antigen; HBeAg=hepatitis Be antigen; anti-HBc=hepatitis B core antibody; anti-HBs=hepatitis B surface antibody; FTA=fluorescent treponemal antibody; VDRL=Venereal Disease Research Laboratory; PCR=polymerase chain reaction

Hepatitis B immunization

More than half, 58% ($n=76$) of the MSW were not immune against hepatitis B and vaccination was offered. Excluding people who started their vaccination schedule after 1 October 2003 (and who could not yet have finished their vaccination course by 1 March 2004), 54.2% of non-immune MSW ($n=59$) completed the immunization schedule. There is no main difference between age groups regarding completion of the vaccination schedule, nor between working areas.

Questionnaire results

Out of 129 involved MSW, 43 agreed with the completion of a questionnaire. The interviews were taken between January 2001 and February 2004. Not every interview was fully completed.

Sociodemographic characteristics: More than 50% of the MSW participating in the survey were reached on the street, 39.5% in the red light district. In the studied population of 129 MSW, 66% worked in the street and 30% in the red light district.

Not half of the 43 MSW had Belgian nationality (37%). The MSW with other origin were residing in Belgium for a median time of 3.8 years (range one month–13 years). The foreign MSW in the red light district tended to stay longer in the country (mean residing time five years) than in the street

area (mean residing time three years). In the red light district all MSW were transsexuals or transvestites, against 36% of MSW working in the street.

Professional characteristics: Considering condom use, 67% declared the usage of condom for oral sex and 79.1% always used condoms for anal intercourse.

Health care: MSW were asked about previous STI, and 40% admitted to have had at least one infection in the past. Multiple STI diagnoses in the past were met in five MSW. The accessibility to the regular health structures in Belgium was measured by the attending of a general practitioner (GP). Only 41% of the interviewed men had his own GP (65% in the red light district, 23% on the street), who was in 64% of cases aware of the patient's profession (82% in the red light district). As can be expected, Belgians and Europeans were more likely to be covered by the health insurance system. Considering drug use, 28/38 declared not using drugs at all, and eight MSW used other than intravenous (i.v.) drugs. Two admitted the usage of i.v. drugs (5%). The overall use of i.v. drugs is only 1.1% in the total female and male population of the Health House. At least 50% smoked cigarettes and one-third (14/43) consumed alcohol on a very regular basis.

Serology: Of 43 MSW, 49% ($n = 21$) was diagnosed with at least one STI, of whom 11 had multiple STI diagnosis in one or consecutive analyses. Of those with multiple STI diagnosis, four had HIV. Eight of the 43 were seropositive for HIV. Previous HBV infections were serologically diagnosed in 11 MSW, two Belgian, six from Ecuador, two from Brazil and one from the Former Yugoslav Republic of Macedonia.

Six acute syphilis cases were diagnosed and four old syphilis infections. Two men were diagnosed with *C. trachomatis*, of whom one together with HIV infection.

Discussion

The few studies on MSW indicate that they have high rates of STI, including HIV.[4–6] Some studies consider only transsexual or transvestite MSW, who are described as specifically high-risk groups for STI.[6,9,10] The population MSW we report on ($n = 129$) is a highly diverse population, in terms of nationality, work situation and age distribution; 30% is transsexual or transvestite. Almost half of the MSW in the Antwerp study (45.5%) were diagnosed as having one or more STI at screening, with or without symptoms. If we exclude hepatitis B as an STI, 31.4% remains. This rate is equal to the approximately 33% in other studies.[4,6,10] Estcourt *et al.* explained that warts accounted for the higher positivity rate in her study population (33%) compared with the general population. This is not the case in our study.

Over 70% of STI were recognized at first screening, in 12/129 (9%) symptomatic. At later checkups, 24% of all recorded infections were found and 8/41 re-screened MSW were symptomatic. In total, 15% consulted with symptoms of STI, during first or later controls.

Universal hepatitis B vaccination of infants and adolescents has been recommended in Belgium since 1999. In addition, vaccination of risk groups remains a useful tool in the fight against this communicable disease until vaccinated birth cohorts have reached the high-risk age.[2] In European SW we consider seromarkers for HBV to be mainly transmitted through sexual and parenteral exposure.[2] However, this is not applicable for immigrants coming from intermediate- or high-prevalence countries, where perinatal and horizontal infections at infant age are frequent. Most men who are hepatitis B positive, originate from high-prevalence countries. HBV seromarkers were found in 27.3% of MSW, considerably higher than the seroprevalence of past HB infection in the FSW in Antwerp (17.4%). The overall rate of STI in the FSW in the Health House project in Antwerp is 24%. The FSW in our population originate in 48% from western Europe, 33% from Africa, 14% from eastern Europe and 3.5% from southern America. Obviously, the origin is different from the male subpopulation, where Eastern Europe and Southern America are more frequent. In all, 54.2% of non-immune MSW completed their three-dose (months 0, 1, 6) hepatitis B vaccination course. These fairly good results, reaching 1999 MSSVD (Medical Society for the Study of Venereal Diseases) recommendations,[11,12] are mostly due to the high accessibility through active outreach, the free consultations and vaccines, and the anonymity of the Health House project.

Seroprevalence of HIV in this population is 10%. Overall prevalence in Belgium is 0.16% (2002).[13] Studies from other countries report lower as well as much higher HIV prevalence in MSW: 6.5–27%,[4] 11%,[5] 21.5%[6] to 68.9%.[14] In contrast with other investigators,[4,15] we cannot confuse the origin of the HIV infection with i.v. drug use, since we have very low percentages of declared i.v. drug use: 1.1%. Among the HIV-seropositive MSW in our population, no one is an i.v. drug user. Sampling bias may have contributed to the differences in reported prevalence, as some men were seeking for HIV care. MSW were significantly more likely to be HIV positive than FSW (prevalence 2.0%, $n = 20/980$).

Active syphilis was diagnosed in 7.5%. The incidence in Belgium in 2003 was 2.1/100,000.[16]

Gonorrhoea was found in 1.7% of all tested MSW. The incidence in Belgium in 2003 was 2.9/100,000.[16]

Prevalence of chlamydia infection in the described MSW population is 9.6%. Chlamydia prevalence in Belgian population is estimated at 3.4–5%.[17,18]

These data illustrate the high-risk group MSW represent for STI, with even completely different figures compared with the FSW in the same geographic area. Obviously, both groups need specific attention and approach.

Of all surveyed MSW ($n = 43$), 40% report STI in the past, comparable to what was reported by Estcourt *et al.* (40%)[4] and Baqi *et al.* (37%).[10] Overall condom use is common in 67% for oral sex. Of the questioned MSW, 79.1% always uses condoms for anal intercourse, while 17% declares to use condom in most occasions or sometimes. Other investigators report 77.7%,[14] 85.7%[4] and 90%[5] of consistent condom use for anal sex. Self-reporting of condom use is subject to substantial reporting bias, as shown by Wilson.[19]

Only 41% of the interviewed men have their own GP, who is in 64% of cases aware of the patient's profession. This underlines the need for low threshold, tailor-made health-care programmes to reach SW, for whom the regular health services in town are not easily accessible.

Finally, we are aware that the survey represents some limitations, by its small number of participants and by the fact that not all answers are fully reliable.[19] One of the limitations of our study is that no swabs were taken from rectum or pharynx to allow some indication of the amount of unprotected oral and anal sex, because of financial constraints.

The Health House for Prostitutes in Antwerp offers specific health care through an outreach programme. Literature confirms the need for outreach, since access to regular health services is difficult because of the high mobility of sex workers, the legal status and the non-identification of the risky behaviour.[20] The results of the programme confirm this need. There is an important difference in sociodemographic and behavioural characteristics between MSW working in the red light district and those working on the street. Health promotion should be tailored to the different subpopulations and outreach appears to be a successful tool.

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