Risk of HIV Infection Among Indoor and Street Sex Workers and Their Use of Health Services in Belgrade, Serbia

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SUMMARY

Introduction HIV in Serbia is most often transmitted through sexual contact, and therefore numerous prevention activities are geared towards sex workers (SW).

Objective To analyse the differences in knowledge, attitudes and risky behaviour between indoor and street SW in Belgrade; to examine the accessibility of health services to this vulnerable group.

Methods In this behavioural cross-sectional study, 113 street and 78 indoor SW were included. The sampling method used was snowball samples. Data were gathered through structured questionnaires.

Results Around 15% of respondents used drugs intravenously. Around 60% of SW used a condom during the last sexual intercourse with their private partner, and around 90% with a commercial partner. Indoor SW had lower levels of education more often than outdoor SW, and they used marijuana, sedatives and painkillers on a daily basis. A significantly higher number of indoor SW were informed about HIV, HBV and HCV testing, and that the risk for HIV infection is not lower if a condom is used exclusively for vaginal sex. Indoor SW reported using health services and testing and counselling for HIV, HBV and HCV more frequently than outdoor SW. Outdoor SW had significantly more sex partners in the previous month than indoor SW. Indoor SW recognized more frequently that providing sex services posed a higher risk for HIV infection.

Conclusion The results of this research study show that even though outdoor SW had higher levels of education than indoor SW, their level of knowledge about HIV transmission was lower and they reported more risky behaviour than indoor SW. Data show that both groups reported not taking care of their health.

Keywords: HIV; AIDS; street sex workers; indoor sex workers; health services

INTRODUCTION

There are more than 33 million people in the world today infected with HIV, and out of this number more than 2.7 million are newly infected registered in 2007 [1]. The number of infected persons is growing particularly in the regions of Eastern Europe and Central and East Asia. The largest number of newly infected cases are among women and persons younger than 30 years of age, belonging to one of the groups of persons with risk behaviour: intravenous drug addicts, sex workers (SW), men who have unprotected sex with men, etc. [1, 2]. Numerous studies have shown that only one in five persons with risk behaviour has access to and avails him/herself of basic health services, and only each tenth person is tested and knows his/her HIV status [1, 3].

The number of persons with HIV/AIDS is still growing in Serbia, so that by the end of 2006 there were 2178 HIV infected cases, and 1381 cases of AIDS [4]. More and more people get infected via heterosexual or homosexual contact (1% in 1987, but 71% in 2006), while there are less and less of those cases among intravenous drug addicts (89% in 1987, 10% in 2006) [3, 5].

Concerning the indicated trends in HIV epidemic, which point to a predominantly sexual route for transmission of the infection, numerous activities related to HIV prevention are aimed at persons who work in prostitution. Besides information and one's behaviour as regards HIV infection risk, the availability of health services and their use is also very important. The organization of health services in Europe is rather diverse, so that there are great variations in kinds of health services offered to SW [6]. Health protection provided for prostitutes is usually linked directly to the legal status the prostitution holds in a given country. The status varies in a wide gamut from capital punishment for females in the business (Iran) to complete uniformity with any other profession (The Netherlands) [6, 7, 8].

OBJECTIVE

The aim of this study was to analyse differences in knowledge, attitudes, and HIV related risk behaviour among street and indoor SW in Belgrade, as well as accessibility of health services to this vulnerable group.

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METHODS

In this behavioural cross-section study, 113 street and 78 indoor SW (agencies, hotels, escort services) were included. They all offered sex services in Belgrade, Serbia, hot spots in 2006 and 2007. Sampling technique is based on net samples with snowballs at all the studied locations. Pollsters reached out to prostitutes at "hot spots", and then they introduced them later to other SW, the latter with still others, and so the network spread out. Spreading would go on until the moment when no new sample members could be contacted, i.e. until the "point of surfeit" [9]. Such sampling was used as the studied population had well developed networks for communication. Respondents were included according to these criteria: older than 15, those who had penetrative sex for money or any other material compensation in the last 12 months and those who live and/or work in Belgrade.

Data were gathered from all respondents by a standardized questionnaire, containing questions related to their demographic characteristics (education, sex, age, place of residence, nationality, employment, etc.), their knowledge, attitudes, and sex related behaviour (ages of the first vaginal, anal, and oral sexual intercourses, age of the first commercial sexual relation, situations in which a SW refuses to offer commercial sex services, number of commercial sex partners for the last month, and the same number during the last working day, use of condom for the last sexual intercourse with a commercial sexual partner, use of condom for the last sexual intercourse with regular sex partner, reaction to a situation in which a condom bursts during sexual intercourse), frequency of psychoactive substances use (tobacco, alcohol, glue, marijuana, sedatives, painkillers, ecstasy, cocaine), and the use and accessibility of health services (possession of a valid document of health insurance, frequency and kind of health services used, how they control their health status, etc.). Respondents were asked to fill out the anonymous questionnaire by a physician working in the field or by educated field (outreach) workers (at places where SW gather). Prior to this, they gave their consent in writing, stating that they wished to be involved in the research. Data were gathered by well-trained pollsters via interviews, while filling out the questionnaire took about thirty minutes. As part of a pilot study done before the research started, the questionnaire had been tested and then revised in accordance with numerous suggestions and remarks submitted by SW, pollsters, and experts.

In the statistical data analysis, χ^2 test and Fisher's exact test were used.

RESULTS

There was no significant difference between indoor and street SW as regards sex, age, nationality, and employment (Table 1). Indoor SW, however, were transsexuals by a slightly higher percentage in comparison to street SW, they were older (25 and older), permanently employed, of Romany and other nationalities. Significantly higher percentage of street SW than the indoor ones had a higher degree of education.

The analysis of sex-related behaviour of SW shows that street SW had a considerably higher number of sex partners (11 and more) than indoor SW in the last month (Table 2). The two SW groups had no significant differences in relation to age of the first vaginal or anal sexual intercourse, and also in relation to age of the first sexual intercourse with a commercial partner. There was no significant difference either in relation to offering sex services depending on health status of SW, to the use of condoms (both with their regular and with their commercial partners during the last sexual intercourse), or in relation to experience when a condom bursts during a sexual intercourse no matter when in their life.

Indoor SW used marijuana, sedatives, and painkillers on a daily basis much more frequently as compared to street SW (Table 3). There was no significant difference between the studied groups in regard to the use of ecstasy, cocaine, and heroin, or in relation to intravenous injecting of any narcotic. Almost all SW used one of the psychoactive substances (PAS) at some time in their life.

Knowledge on HIV/AIDS was tested through the acquaintance with the ways of spreading HIV infection (Table 4). Indoor SW had a considerably higher number of those who knew that HIV could not be transmitted via a mosquito bite, that intake of alcohol did not protect against HIV

Table 1. Distribution of street and "indoor" sex workers (SW) by demographic characteristics

Demographic characteristics		"Indoor" SW		Street SW		p*
		No.	%	No.	%	
Sex	Female	49	62.8	73	64.5	0.080
	Male	11	14.1	26	23.0	
	Transsexuals	18	23.1	14	12.4	
Age (years)	≤18	12	15.4	15	14.2	0.685
	19-24	19	24.4	34	30.1	
	≥25	47	60.3	63	55.8	
Nationality	Serbian	35	44.9	65	57.5	0.085
	Romany and other	43	55.1	48	42.5	
Education	Elementary or less	69	88.5	85	75.2	0.023
	Secondary, higher, high	9	11.5	28	24.8	
Employment	Yes	22	28.2	21	18.6	0.118
	No	56	71.8	92	81.4	

* value for χ^2 test

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Table 2. Distribution of street and „indoor" sex workers (SW) according to risk sex behaviour

Risk sex behaviour		„Indoor" SW		Street SW		p*
		No.	%	No.	%	
Number of sex partners in the last month	≤10	27	34.6	25	22.1	0.014
	≥11	51	65.4	88	77.9	
Age of first vaginal sexual intercourse (years)	None	17	21.8	35	31.0	0.181
	≤14	39	50.0	42	37.2	
	≥15	22	28.2	36	31.9	
Age of first anal sexual intercourse (years)	None	19	24.4	28	24.8	0.555
	≤14	14	17.9	14	12.4	
	≥15	45	57.7	71	62.8	
Age of first sexual intercourse with commercial partner (years)	≤18	45	57.7	63	55.8	0.790
	≥19	33	42.3	50	44.2	
Offering sex services depending on health status	Sometimes/almost	10	12.8	23	20.4	0.176
	Always	68	87.2	90	79.6	
Condom use with regular sex partner in the last month	Rarely/never	21	60.0	22	52.4	0.503
	Always	14	40.0	20	47.6	
Condom use in the last sexual intercourse with commercial sex partner	No	7	9.0	13	11.5	0.575
	Yes	71	91.0	100	88.5	
Condom bursting while having sex anytime in life	No	17	21.8	35	31.0	0.161
	Yes	61	78.2	78	69.0	

* value for χ^2 test

Table 3. Distribution of street and „indoor" sex workers (SW) according to the use psycho-active substances (PAS)

Use		„Indoor" SW		Street SW		p
		No.	%	No.	%	
Marijuana	Each day	6	19.4	2	3.2	0.005**
	Rarely	25	80.6	61	96.8	
Sedatives	Each day	11	25.6	8	14.0	0.041*
	Rarely	32	74.4	49	86.0	
Painkillers	Each day	8	14.0	3	5.3	0.002**
	Rarely	24	86.0	54	94.7	
Cocaine	Each day	0	0	3	13.6	0.643**
	Rarely	8	100.0	19	86.4	
Heroin	Each day	0	0	0	0	0.865**
	Rarely	6	100.0	23	100.0	
Any intake of PAS		75	96.2	113	100.0	0.067*
Intravenous intake of PAS		10	12.8	20	17.7	0.362*

* value for χ^2 test; **Fisher exact test

infection, that one could not be protected from HIV infection if one used a condom only when having vaginal sexual intercourse, and that one could get infected with HIV and other sexually transmitted infections during oral sexual contact if one did not use a condom. Still, street SW knew, in a considerably higher percentage, that of HIV infection risk was far lower if they had no sexual intercourse. There was no significant difference between indoor and street SW in their knowledge related to the following HIV infection routes of spreading: HIV cannot be communicated if one eats food from the same plate or drinks water from the same glass as one infected with HIV, a person who looks healthy may be infected with HIV, the use of other people's needles and syringes when taking narcotics intravenously increases the HIV infection risk, HIV can be transmitted from a pregnant woman onto her baby (during pregnancy,

Table 4. Distribution of „indoor" and street sex workers (SW) according to knowledge and attitudes related to HIV/AIDS

Knowledge on HIV/AIDS	„Indoor" SW		Street SW		p*
	No.	%	No.	%	
Condom protects from HIV infection	69	88.5	95	84.1	0.599
Risk of HIV infection is lower for persons with only one sexual partner	22	28.2	43	38.1	0.046
HIV infection cannot be transmitted if one eats food from the same plate or drinks water from the same glass as an HIV infected person	45	57.7	63	55.8	0.114
One who appears healthy may be infected with HIV	21	26.9	41	36.3	0.107
HIV is not transmitted by a mosquito bite	35	44.9	25	22.1	0.000
Pregnant woman with HIV/AIDS may transmit HIV onto her newborn infant	63	80.8	91	80.5	0.888
Persons drinking alcohol are not protected from HIV infection	35	44.9	23	20.4	0.000
Risk of HIV infection is higher for persons who use other people's needles and syringes when injecting drugs	74	94.9	105	92.5	0.750
Woman with HIV/AIDS may transmit HIV infection to her baby by breastfeeding	56	71.8	88	77.9	0.154
HIV is transmitted by blood, sperm, and vaginal secretions	70	89.7	95	84.1	0.434
Risk of HIV infection is lower if one uses condom for sexual intercourse	46	59.0	42	37.2	0.011
HIV infection risk is higher if one does not use condom for oral sexual intercourse	44	56.4	38	33.6	0.006
Informed about testing for HIV	69	89.7	97	85.8	0.284
Informed about testing for Hepatitis B	65	83.3	76	67.3	0.009
Informed about testing for Hepatitis C	66	84.6	80	70.8	0.019
Tested for HIV infection	62	79.5	74	65.5	0.036
Tested for Hepatitis B	27	34.6	14	12.4	<0.001
Tested for Hepatitis C	34	43.6	17	15.0	<0.001
No risk or moderate/great risk of HIV infection by personal assessment	55/24	69.1/30.9	93/19	83.2/16.8	0.018

* value for χ^2 test

Table 5. Distribution of „indoor" and street sex workers (SW) according to use of health services

Use of health services		„Indoor" SW		Street SW		p*
		No.	%	No.	%	
Health ID	Yes	45	57.7	72	63.7	0.401
	No	33	42.3	41	36.3	
Health examination in the last 12 months	Yes	42	55.1	67	59.3	0.567
	No	35	44.9	46	40.7	
Service use in the last 12 months	Gynaecologist	23	29.5	57	50.4	0.017
	General practice	33	42.3	40	35.4	
	Other specialized services	2	28.2	16	14.2	
Selected GP at the health centre	Yes	25	32.1	43	38.1	0.094
	No	53	67.9	70	61.9	
Selected gynaecologist at the health centre	Yes	24	30.8	21	18.6	0.051
	No	54	18.6	45	81.4	

* value for χ^2 test

at childbirth, and by breastfeeding), HIV is transmitted by blood, sperm, and vaginal secretions. Around 90% of SW from both groups have heard about HIV testing. Indoor SW, however, have heard about Hepatitis B and C testing significantly more frequently than street SW. Concerning their attitudes, indoor SW were tested for HIV and Hepatitis B/C significantly more often than street SW. A significantly higher percentage of indoor SW, as compared to street SW, considered themselves to be at a greater risk of HIV infection due to offering sex services for money.

There was no significant difference between indoor and street SW in regard to controlling their own health status in the last 12 months, as well as in relation to the possession of a health certificate and a selected GP (Table 5). However, over 50% of SW did control their health and they possessed a health document, and about 30% of them had their selected physician. Indoor SW used the services of general medicine and of other specialised services significantly more often than the street SW. The street SW had a selected gyneacologist in their health centre significantly more often than indoor SW.

DISCUSSION

Social and demographic indicators among SW who prostitute themselves in Belgrade show that prostitution is mostly prevalent among women whose age is over 24, and who have a low level of education. Such results lead to a conclusion that motives to enter the business of prostitution, either indoor or on the street are, for the good part, of socio-economic origin (unemployment, threatened personal or family existence, refugee status or displacement, and in a significant percentage also enforcement to become prostitute by a panderer, a pimp, or one's spouse).

Results of our research indicate highly risk sex behaviour of SW in Belgrade (having vaginal sexual intercourse before reaching the age of 15, 11 or more sex partners in the last month, less than 50% of them use a condom with their regular partner, about 80% offer sex services regardless of their health status, almost all of them use PAS) whether it be street or indoor SW, increasing, to a large extent, the risks of infection with STD and HIV among them. Those results are very similar to the results given by numerous researches done around the world among SW [10-16]. A research done in Russia in Saratov and Balakovo [17] points to high risk behaviour of SW, low percentage for the use of condoms, high percentage of SW who use some drug, agreeing to have a sexual intercourse without a condom for a slightly higher compensation, and absence of any concern for one's own health. Research on the use of condoms among SW done in 2001 and 2002 in two regions of the Madagascar capital [18] points to a great number of sex partners (5 to 6 clients in the last seven days), low percentage for the use of condoms at the onset of the study (slightly more than 50% used condoms always with a commercial partner during the last month, agreeing to have sex without a condom for a higher compensation), and a high percentage of SW with a sexually transmitted disease. A study on the use of condoms among SW who are in the business of heterosexual prostitution in Ireland points out that SW in a poor financial situation, who are unemployed, and who were molested, use condoms in a lower percentage in comparison to those with a better economic status.

Particular risk for spreading HIV infection among SW in Belgrade is emphasized by the fact that over 90% of SW use some of the psycho-active substances, and that 12.8% of indoor and 17.7% of street SW are intravenous users of PAS. Similar results were found in numerous other researches done in the world among SW [13, 14, 19, 20, 21]. The study done in Bengal in eastern India [13] among street SW and SW who work in brothels points to a high prevalence of HIV among them (5.9%), which is interpreted as a consequence of the presence of joint risks for HIV infection (high risk sex behaviour, use of PAS). Besides the risks of spreading HIV via sexual intercourse, particularly among young SW, intravenous use of narcotics is the main route for the transmission of HIV infection. A study done in Vancouver, British Columbia, Canada [20] also points out that intravenous drug users are exposed in high percentage to sexual harassment, especially women and juveniles, and also that they are forced to prostitute themselves by their drug dealers. HIV prevalence among them was 25%.

High percentage (more than 80%) of presented knowledge of indoor and street SW in relation to their acquaintance with three main routes for transmitting HIV (sexual intercourse without a condom, intravenous injecting of drugs, and from a HIV positive pregnant woman to her baby) is not in harmony with their risk behaviour. Ignorance and fallacies related to other HIV/AIDS issues (number of sex partners and HIV risk, taking food from the same

plate as an HIV-positive person and HIV risk, assessment of a person's HIV status according to his/her appearance, spreading of HIV by a mosquito bite, consumption of alcohol and diminished probability that the person is infected with HIV, unprotected oral sexual intercourse and HIV risk), point to the necessity of additional prevention work with SW in Serbia, to the build-up of their knowledge, but also of their stances in relation to risky behaviour that might lead to HIV infection. A research done in Thailand [20] among commercial SW proved that after implementation of the national "100% Condom" Programme among the polled SW group, the level of knowledge was heightened, as well as the percentage of using condoms, as compared to the control SW group with whom the programme was not implemented.

Not having an adequate document in order to realize one's health insurance right to have health protection (the research showed that almost 43% of SW had no adequate documents), and their illegal status while being in the business of sex work in Belgrade, influences SW to a great extent not to use health services in the protection of their health. The organization of health services in Europe is rather diverse, so that there is great variation as to what a health service offers to SW [22, 23, 24]. Health care provided to SW, in most countries where the researches were done, is usually linked directly to the legal status prostitution has in a given country [7, 15].

Prostitution is not banned in most of the European Union countries [22]. There are various limitations in the accessibility of certain services, social protection or health care. In Greece [22], those services are available only to SW who are registered, and they are obliged to have check-ups twice a week. In Germany [22], prostitution is fully legalized, and all those who are registered as SW have access to all services. In some countries of Europe, HIV-positive SW are forbidden to work, leading them to go underground and work illegally, thus increasing the risk of HIV transmission. Work is not permitted in any country of the EU to illegal immigrants, including the SW, which leads to a greater number of SW who work illegally, and who are left with no possibility to use any social or health service.

According to the research results, the percentage of SW who were tested for HIV increased, particularly among street SW, as compared to the previous period of time. It also points to the initial effects of the present prevention programmes among SW implemented in the last few years in Belgrade [5]. At the same time, the percentage of SW who were tested for Hepatitis B and C is low. A higher percentage of indoor SW were tested for Hepatitis B and Hepatitis C as compared to street SW. This suggests that there is little knowledge among SW on the existence of joint risks for both HIV and Hepatitis B and C infections, and also that there are no programmes which would bring about free of charge testing of SW for Hepatitis B and C.

Results of our study indicate that street SW, as compared to indoor SW, were females in larger percentage, younger than 25, of Serbian nationality, with a high level of education, but they behaved with more risk, knowing less about the ways of spreading HIV. They also knew considerably less about Hepatitis B and C testing, and they tested themselves for HIV, Hepatitis B or C less frequently. In comparison to indoor SW, they visited general practitioners or other specialized services far more rarely. There are significant differences between indoor and street work, in terms of harm and risk of health. In many studies street sex work is more likely to be linked with drugs [23, 24, 25]. Pressure from clients and pimps for unprotected sex combined with drug dependency lead street SW to offer unprotected sex for more money [26-30]. In contrast, indoor SW are less exposed to the risk of violence [31]. They are less likely to be supporting an addictive drug habit or to be under the control of pimps [32].

Numerous researches in the world [10-14], especially in underdeveloped or developing countries, emphasize that social and economic deprivation is one of the crucial motives to enter the prostitution business, and this is valid for Belgrade (Serbia) as well. Demographic indicators among persons in prostitution are correlated with various legal regulations for sex work in certain countries. In countries where prostitution is legalized or decriminalized, SW have better access to health and social care, they are less stigmatized and less economically deprived [15]. The opposite situation is found in countries where prostitution is criminalized [10, 12], such as the case of Belgrade, Serbia [5].

CONCLUSION

Research results show that despite a higher degree of education among street SW, their level of knowledge on ways of spreading HIV infection was lower and they displayed more risky behaviour than indoor SW. Both SW groups take little care about their health status, therefore it is necessary to plan and realize long-term preventive programmes in accordance with their specific needs.

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Ризик од *HIV*-инфекције и коришћење здравствених услуга уличних и вануличних сексуалних радница у Београду

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КРАТАК САДРЖАЈ

Увод У Србији се *HIV*-инфекција најчешће преноси сексуалним путем, због чега су и многе активности на превенцији оболевања од овог вируса усмерене ка особама које се баве сексуалним радом (проституцијом).

Циљ рада Циљ истраживања је био да се испитају разлике у знању, ставовима и ризичном понашању везаном за *HIV* између уличних и вануличних сексуалних радница (СР) у Београду, као и доступност здравствених служби овој популацији.

Методе рада Ова бихејвиорална студија пресека обухватила је 113 уличних и 78 вануличних СР које су се током 2006. и 2007. године бавиле проституцијом на подручју Београда. Техника узорковања је била заснована на мрежним узорцима са тзв. снежним грудвама. Подаци су прикупљени структурираним упитником затвореног типа.

Резултати Око 15% испитаница је интравенски користило дрогу. Око 60% је користило кондом током последњег сексуалног односа са сталним партнером, а око 90% с тзв. комерцијалним партнером. Вануличне СР су значајно чешће имале нижи степен образовања и свакодневно конзумирале марихуану, таблете за смирење и против болова него уличне СР. Вануличне СР су у значајно већем проценту знале за тестирање на *HIV*, хепатитис *B* и *C* и да ризик од *HIV*-инфекције није мањи ако се кондом користи само за вагинални сексуални однос у односу на уличне СР. Такође, вануличне СР су значајно чешће него уличне СР користиле услуге здравствених служби и вршиле тестирање на *HIV* и хепатитис *B* и *C*. Уличне СР су током последњих месец дана имале значајно више сексуалних партнера. Већи ризик од *HIV*-инфекције услед пружања сексуалних услуга за новац значајно су чешће препознавале вануличне него уличне СР.

Закључак Резултати истраживања показују да је и поред вишег степена образовања уличних СР њихово знање о начину ширења *HIV*-инфекције лошије и да су имале ризичније понашање него вануличне СР. Установљено је да ниједна група испитаница не води довољно рачуна о своме здрављу.

Кључне речи: *HIV*; сида; проституција; улични сексуални радници; вануларни (*indoor*) сексуални радници; здравствена служба

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