

## **Female Sex Work and HIV Risks in Croatia**

Aleksandar Štulhofer<sup>1</sup>

Valerio Baćak<sup>1</sup>

Tihana Drglin<sup>1</sup>

Mario Puljiz<sup>2</sup>

Marko Miklin<sup>3</sup>

<sup>1</sup>Department of Sociology, Faculty of Humanities and Social Sciences  
University of Zagreb

<sup>2</sup>*Help*, Split

<sup>3</sup>*Let*, Zagreb

**Running Head:** HIV risks among Croatian sex workers

## **Abstract**

The aim of this paper was to analyze and compare the prevalence of HIV-related sexual risk taking among Croatian female sex workers (FSW) in two major urban areas. Two groups of FSWs were interviewed in Zagreb (n=65) and Split (n=89). Participants' mean age was 33.3 (SD=8.32). Interviews were conducted by two outreach organizations that provide health services to sex workers in the two cities. The study used a brief questionnaire with standardized behavioral and HIV knowledge indicators. The two groups of FSWs differed significantly in most sociodemographic and socio-sexual indicators. Women from the Split sample were somewhat younger ( $\chi^2=6.87$ ,  $P<.05$ ), less educated ( $\chi^2=7.71$ ,  $P<.05$ ), less likely to be single ( $\chi^2=19.81$ ,  $P<.001$ ), and less likely to be unemployed ( $\chi^2=5.22$ ,  $P<.05$ ). Also, they injected drugs in higher proportion ( $\chi^2=35.03$ ,  $P<.001$ ), but had less clients in the preceding month ( $\chi^2=12.54$ ,  $P<.001$ ) and were less likely to be abused by them ( $\chi^2=7.18$ ,  $P<.01$ ). HIV testing was significantly more prevalent among participants in the Split sample ( $\chi^2=4.95$ ,  $P<.05$ ). In multivariate analysis, selling sex in Zagreb (OR=14.48,  $P<.01$ ), having secondary or higher education (OR=4.76,  $P<.05$ ), ever tested for HIV (OR=8.34,  $P<.05$ ), and having assessed the risk of getting infected with HIV as high (OR=.23,  $P<.05$ ) were significantly associated with consistent condom use with clients in the last month. The findings of this first systematic study on HIV-related risks among FSWs in Croatia point to the need to update targeted intervention programs by improving the prevention of HIV risks associated with injecting drug use (Split) and by a more efficient HIV educational approach.

**Key Words:** HIV, sex work, risk taking, condom use, Croatia

## **Introduction**

Female sex workers (FSW) are considered a highly vulnerable population in respect to HIV/AIDS across the world (De Zaluondo, 1991; Estebanez, Fitch, & Najera, 1993; UNAIDS, 2008). Sexual risk taking among FSWs has been associated with high number of commercial and, often, non-commercial partners (Trani, Altomare, Nobile, & Angelillo, 2006), injecting drug use (Casabona, Sanchez, Salinas, Lacasa, & Verani, 1990; Estebanez et al., 1993; Platt et al., 2005), alcohol abuse, and low access to health care and HIV/STI testing (Jeal & Salisbury, 2004; Staneková et al., 2004). Vulnerability of FSWs is also reflected in frequent abuse, often of sexual nature, and threats of violence, which have been found to increase FSWs exposure to sexually transmitted infections (Maman, Campbell, Sweat, & Gielen, 2000; Rhodes, Simic, Baros, Platt, & Zikic, 2008).

HIV risks in the population of FSWs seem particularly high in the case of societies that have recently undergone rapid social and political changes such as former post-communist countries in Europe (Aral et al., 2003; Bruckova et al., 2006; Staneková et al., 2004). High exposure to risk taking in the context of social costs of transition is exacerbated with the continuing criminalization and social stigmatization of sex work (Kelly & Amirkhanian, 2003; Rhodes & Simic, 2005; Sandfort & Stulhofer, 2004; Scambler & Paoli, 2008). Understanding the risks FSWs are facing in post-transitional societies would not only increase the efficiency of national HIV prevention systems, but also assist in improving their safety, health, and human rights.

Knowledge about HIV-related behaviors among FSWs in Croatia is scarce (Stulhofer, 2004). No systematic surveillance study was ever attempted in

this population, unlike in the case of other most at risk HIV groups, such as intravenous drug users (Power & Mimica, 1999), men who have sex with men (Kolarić, Bielen, & Gjenero-Margan, 2008; Aleksandar Štulhofer, Baćak, Božičević, & Begovac, 2008), migrant workers (Bacak & Soh, 2006; A. Štulhofer, 2008), and young people (Aleksandar Štulhofer, Graham, Božičević, Kufrin, & Ajduković, in press). Only one research study carried out in Croatia included a substantial number of FSWs. This recent report on anonymous HIV testing included 67 sex workers (sex ratio was not reported) with HIV prevalence of 0-4.4% (95% CI).

Unfortunately, no data on HIV-related risks in this group of participants were presented (Gjenero-Margan et al., 2006).

Since HIV infection and associated risk taking behaviors surveillance among sex workers is critical for countries with low-level HIV epidemic (Ghys, Jenkins, & Pisani, 2001), the aim of this study was to assess sexual and non-sexual risk taking among FSWs in Croatia. In this paper we report the results of a survey carried out in the county's two largest urban centers, which is a part of a broader research project on behavioral HIV surveillance in the country.

## **Participants and Methods**

### *Sampling Procedure*

The only two non-governmental organizations (NGOs) working with FSWs in the country were approached in 2006 and 2008 with a request for collaboration in the process of recruitment and interviewing FSWs. We believed that people who work with this population for years would be highly successful in collecting valid data on sensitive topics. Reaching FSWs for research purposes

is often extremely difficult (Sanders, 2006; Shaver, 2005) and some recent attempts in the region have proved unsuccessful (Simic et al., 2006). In addition to engaging in what in most countries constitutes an illegal activity, FSWs are particularly hard to reach due to stigma and discrimination attached to sex work (Scambler & Paoli, 2008). Considering this, we reached a targeted sample of FSWs who were using outreach services in Split and Zagreb.

### *Participants*

Sample size was 65 in Zagreb and 89 in Split, where the study continued for a longer period of time. FSWs recruited in the Split sample differed substantially in respect to their place of residence; 65 reported living in Split, while the rest were from towns along the coastline, spanning from Šibenik in the Northwest to Dubrovnik in the Southeast. Two women stated that their permanent residence was in a neighboring country. In contrast, only 7 women in the Zagreb sample were not living in the town where they were interviewed, but in smaller towns in the vicinity. Overall, the average age of participants was 33.06 (SD=8.31).

In Split, less than 10% of the approached FSWs refused to participate. It was suggested that most of them were younger and more educated women who did not sell sex on the street, but operated mainly via phone. Unfortunately, no data on FSWs who refused to be recruited in the Split sample is available. In Zagreb, where interviewing was carried out mainly in the street (during FSWs working hours), the proportion of refusals was substantially higher (36%). Since the Zagreb NGO has 130 FSWs listed in

their registers and the Split NGO 158, our sample included 47% of all FSWs who used NGO services in Croatia.

### *Data collection*

In the majority of cases, questionnaires were completed in a confidential face to face interview, with an NGO worker interviewing the participating FSWs on-site (Zagreb) or in the NGO offices (Split). In the Zagreb sample only, 40% of the questionnaires were self-administered at FSWs' homes, at their request.

### *Questionnaire*

We used a short questionnaire form, totaling 34 variables, which on average took about 10 minutes to complete in the interview form. Five sociodemographic questions (age, education, employment, marital status, and place of residence) were asked in the introduction, followed by questions regarding sex work (age at first commercial sex, number of clients in the last month, condom use with clients, the usual mode of client solicitation), number of non-paying partners in the last year, intravenous drug use and needle/equipment sharing, STI-related symptoms and STI diagnosed (in the last year), HIV testing, experience of physical and sexual abuse, and HIV risk self-assessment (from 1="I am not at risk for HIV infection" to 5="I am at extremely high risk for HIV infection"). At the end of the questionnaire, six standardized questions were asked about HIV knowledge (cf. UNGASS indicators; (UNAIDS, 2008).

### *Statistical analysis*

To assess differences in sociodemographic and socio-sexual characteristics between the Zagreb and Split samples  $\chi^2$  test was used. Fisher's exact test was employed in cases where one of the cells in contingency table had no cases. Multiple logistic regressions were carried out to explore associations between the indicators of sexual risk taking as dependent and a number of sociodemographic and socio-sexual characteristics as independent variables. OLS regression model was built with self-assessed HIV risk as criterion variable. Statistical analyses were carried out with SPSS, version 16.0 (SPSS Inc., Chicago, IL, USA).

## **Results**

### *Non-participation analysis*

Basic data were collected on over 80% of FSWs who refused to be recruited in the Zagreb sample or who at one point refused to complete the questionnaire. No statistically significant differences were found in the average age ( $t=0.80$ ,  $df=189$ ,  $P>0.42$ ), employment status (employed vs. unemployed;  $\chi^2=2.66$ ,  $P>0.10$ ), relationship status (being in committed relationship or married vs. single;  $\chi^2=2.90$ , Fisher's exact test  $P>0.14$ ). Significant differences were found in the age at first commercial sex ( $\chi^2=6.28$ ,  $P<0.05$ ) and lifetime experience of injecting drug use ( $\chi^2=10.95$ ,  $P<0.01$ ). Women who refused to participate in the study were more likely to have started selling sex at younger age (below median), but less likely to have used drugs intravenously.

### *Differences between the two samples*

Significant differences between the Zagreb and Split samples were found in most sociodemographic and behavioral characteristics (Table 1). FSWs working in the Zagreb area were somewhat older ( $\chi^2=6.87$ ,  $P<.05$ ), less likely to have more than primary schooling ( $\chi^2=7.71$ ,  $P<.05$ ), and more likely to be unemployed ( $\chi^2=5.22$ ,  $P<.05$ ). In addition, they had more clients, used condoms more consistently in the preceding month ( $\chi^2=7.86$ ,  $P<.01$  and  $\chi^2=9.26$ ,  $P<.01$ , respectively), and were less likely to have one or more non-paying sexual partners in the last year ( $\chi^2=12.54$ ,  $P<.01$ ). Unlike three FSWs from the Split sample, none of the FSWs interviewed in Zagreb reported not using condom at last anal or vaginal intercourse with a client. FSWs from Zagreb were also less likely to have injected drugs ( $\chi^2=35.03$ ,  $P<.001$ ). None of the FSWs from Zagreb reported sharing needles or other injecting equipment in the last month. Noteworthy, all 10 FSWs from the Split sample who reported sharing injecting equipment also reported using condom at last penetrative sex with a client. FSWs interviewed in Split were more likely to have ever tested for HIV ( $\chi^2=4.95$ ,  $P<.05$ ) and reported significantly lower prevalence of being physically abused by clients during the preceding year ( $\chi^2=7.18$ ,  $P<.01$ ).

Overall, the interviewed FSWs reported relatively high rates of condom use with clients. Injecting drug use was found much more prevalent in Split (over 50% of participants), where about 10% of FSWs also reported injecting equipment sharing. Approximately 14% of FSWs in both samples were diagnosed with STI in the preceding year and over 70% visited a gynecologist. Reported HIV knowledge was fragmentary, as only 37% of FSW in the Zagreb sample and 43% in the Split sample correctly answered all six



questions regarding HIV transmission modes and efficient protection from HIV infection. For example, 12.4% of the FSWs interviewed in Split and 24.5% of those interviewed in Zagreb did not know correct answer to the following question: “Can a person who looks healthy have HIV?” When asked whether HIV can be transmitted by needle-sharing, 16.9% of FSWs in the Split sample answered incorrectly. As expected, formal education was positively associated with HIV knowledge ( $\chi^2=11.32$ ,  $P<.01$ ).

Finally, alarmingly high rates of self-reported abuse by clients were found – particularly in the Zagreb sample, in which every second participant reported such experience in the preceding year.

#### *Correlates of HIV-related risk taking*

Of the five standard indicators of HIV-related risk taking - (1) sharing drug injecting equipment, (2) being diagnosed with STI, (3) condom not used at last commercial sexual intercourse, and (4) inconsistent condom use with clients – the two (1, 3) were inadequate for further analysis due to no or extremely low variability. The remaining two indicators were regressed on a number of sociodemographic and behavioral characteristics. Since none of these independent variables was found a significant correlate of being diagnosed with STI in the preceding year, we present finding only for consistent condom use with clients. When this multivariate model was explored separately for each sample, lack of variation in the dependent variable made the Zagreb model insignificant.

Four variables – the sample location, education, HIV testing, and self-assessed exposure to the risk of HIV infection – were found to be significant

correlates of consistent condom use with clients in the last month. FSWs interviewed in Zagreb were over 14 times more likely to have used condoms consistently in the last month ( $OR=14.48$ ,  $P<.01$ ). Education had the same effect. More educated women who sell sex (with high school or more) were almost five times as likely to have consistently used condoms with clients ( $OR=4.76$ ,  $P<.05$ ). HIV testing significantly increased and high HIV risk self-assessment decreased the odds of consistent condom use ( $OR=8.34$ ,  $P<.05$  and  $OR=.23$ ,  $P<.05$ , respectively). Having ever tested for HIV increased the odds of consistent condom use with clients eight-fold. In comparison with participants who assessed the risk of getting infected with HIV as low or non-existent, those who evaluated it as high had 77% lower probability of consistent condom use.

To analyze correlates of self-assessed HIV risk, an ordinary least squares regression model included age, education, number of clients, HIV knowledge, HIV testing, consistent condom use with clients, injecting drug use, and diagnosed STI as independent variables (not presented in tables). In the Split sample, only injecting drug use was a significant predictor ( $\beta=.28$ ,  $P<.05$ ). In the Zagreb sample, two variables were significantly associated with the self-evaluated risk of HIV infection: ever having tested for HIV ( $\beta=.37$ ,  $P<.05$ ) and being diagnosed with STI in the last year ( $\beta=.37$ ,  $P<.01$ ).

## **Discussion**

It is impossible to directly compare the magnitude of HIV risk taking in two samples of Croatian FSWs: For instance, participants from Split reported more injecting drug use (and needle sharing), but, overall, less clients. FSWs in the

Zagreb sample used condoms more consistently, but had more clients and were more likely to experience physical abuse by clients, which in some cases could have resulted in unprotected sex (Rhodes et al., 2008). In addition, nothing is known about their clients, especially those coming from other countries (characterized with different HIV rates) who may be more frequent in the Split area, especially during the tourist season.

Drug use has been shown to increase sexual risk taking among FSW (Aral, St Lawrence, Dyatlov, & Kozlov, 2005; Lowndes, Alary, & Platt, 2003), with the combination of sex work and injecting drug use maximizing HIV vulnerability. A recent study found that FSWs who inject drugs were more likely to report STIs and risky sexual practices than other injecting drug users (IDUs) (Platt et al., 2005). In a study conducted in Glasgow, all HIV+ FSWs were also injecting drugs (McKeganey & Barnard, 1992; McKeganey, Barnard, Leyland, Coote, & Follet, 1992). Although higher prevalence of injecting drug use in the Split sample could probably be explained by the local drug subculture that originated in the 1980s and gained notoriety in the 1990s (Lalić & Nazor, 1997; Power & Mimica, 1999), the reasons behind more prevalent client abuse in the Zagreb sample are unclear. Although an earlier professional debut and a higher number of clients reported in the Zagreb sample heighten the risk of victimization, this does not seem to constitute a sufficient explanation. Violence from clients and police has been cross-culturally shown as ubiquitous in the FSW population, especially among women working on the streets (Jeal & Salisbury, 2004; McKeganey & Barnard, 1992; Penfold, Hunter, Campbell, & Barham., 2004; Rhodes et al., 2008; Vanwesenbeeck, 2001). In

contrast to a number of studies in which victimization experience was linked to sexual risk taking, the association was not confirmed in our analysis.

As observed in multivariate analysis, education proved to be a significant predictor of consistent condom use with clients. The effect is most likely indirect: more educated women being more knowledgeable about health issues and health-conscious, more likely to have access to information, and, possibly, more self-assertive. The finding is of particular importance to targeted intervention programs, because it points out that less educated FSWs may be at higher risk of getting infected with HIV or other STIs, and suggests that offering some educational opportunities to FSWs may reduce sexual risk taking.

According to a recent international report (EuroHIV, 2007), condom use at last commercial intercourse greatly varied by country (from 9% in Azerbaijan to 96% in Moscow). The average proportion of FSWs who reported using condom the last time they sold sex was 78.5%, which was lower than observed in this study. Two studies, one carried out on a relatively small sample ( $n=66$ ) of FSWs living and working in a provincial Russian city (Platt et al., 2005) and the other conducted in Italy on 102 FSWs (Spina et al., 1998), reported higher prevalence of consistent condom use with clients than found in Croatian samples. The figures were 86% and 95%, respectively. A Danish study carried out on 188 FSWs found an even higher proportion of consistent condom use with clients (97%) (Kjaer et al., 2000). In contrast, the Slovakian study reported lower prevalence than observed in Croatian samples (62%) (Staneková et al., 2004).

#### *Study limitations*

Both samples were small and non-random, consisting mostly (although not exclusively) of street-based FSWs. Clearly, no generalization of findings is possible, since a number of different types of sex work exist, with some differing substantially in terms of income, social stigma, the risk of victimization, and health-related outcomes (Estebanez et al., 1993; Harcourt & Donovan, 2005; Vanwesenbeeck, 2001). Data collection procedure was not uniform across samples as some participants were interviewed in an office (Split) and others on-site and at their homes (Zagreb). Finally, moderately high rates of reported condom use and HIV testing could, at least partially, reflect our recruitment strategy. FSWs who were enlisted by outreach services, and have been receiving free condoms, informational leaflets, and, in the case of Split, occasional free gynecological checkups, probably constitute a distinct subgroup and differ from women not covered by such services.

## **Conclusions**

This is the first systematic study on HIV-related risks among FSWs in two largest Croatian cities. Within the European context, FSWs interviewed in Zagreb and Split were characterized by above average rates of condom use and lower rates of injecting drug use. However, needle and drug injecting equipment sharing in Split and, overall, fragmentary HIV knowledge, suggest the need to amend existing intervention programs.

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## **Address for correspondence:**

Valerio Baćak, Department of Sociology, Sexology Unit, Faculty of Humanities and Social Sciences, University of Zagreb, Ivana Lučića 3, 10000 Zagreb, phone: 6120 170, fax: 6120 007, e-mail: [ybacak@ffzg.hr](mailto:ybacak@ffzg.hr)

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Table 1 – Socio-Demographic and Socio-Sexual Characteristics of the Sampled  
Croatian Female Sex Workers by Urban Area

		Zagreb area (N=65)	Split area (N=89)	$\chi^2$
		<i>n</i> <sup>a</sup> (%)		
Age				6.87*
	18-28	27 (41.5)	24 (27.0)	
	29-39	22 (33.8)	49 (55.1)	
	≥ 40	16 (24.6)	16 (18.0)	
Education				7.71*
	Primary school or less	26 (40.0)	22 (24.7)	
	Secondary school	32 (49.2)	63 (70.8)	
	College	7 (10.8)	4 (4.5)	
Marital status				19.81***
	Married	8 (12.3)	25 (28.4)	
	In a relationship	16 (24.6)	39 (43.8)	
	Single	41 (63.1)	24 (27.3)	
Employed				5.22*
	No	56 (86.2)	62 (69.7)	
	Yes	9 (13.8)	26 (29.2)	
Age at first commercial sex				20.40***
	< 20	47 (72.3)	32 (36.0)	
	≥ 20	17 (26.2)	56 (62.9)	
Client solicitation				.11
	On the street	30 (46.2)	43 (48.9)	
	Other	35 (53.8)	45 (51.1)	
Number of clients in the last month				16.37***
	≤ 10	21 (32.3)	46 (51.8)	
	11-20	22 (33.8)	30 (33.7)	
	≥ 21	22 (33.8)	7 (7.9)	
Consistent use of condoms with clients (last month)				9.26**
	No	8 (12.3)	30 (33.7)	
	Yes	57 (87.7)	59 (66.3)	
Condom use at last commercial sex				2.24 <sup>b</sup>
	No	0 (0)	3 (3.4)	
	Yes	65 (100)	86 (96.6)	
Number of non-paying sexual partners (last year)				12.54**
	0	12 (20.0)	2 (2.4)	
	1	24 (40.0)	44 (52.4)	
	≥ 2	24 (40.0)	38 (45.2)	
Visited gynecologist in the last year				1.21
	No	18 (27.7)	18 (20.2)	
	Yes	46 (70.8)	70 (78.7)	
Diagnosed with STI in the last year				.01
	No	55 (84.6)	76 (85.4)	

Intravenous drug use (ever)	Yes	9 (13.8)	12 (13.5)	35.03***
	No	59 (90.8)	39 (43.8)	
Shared injecting equipment (last month)	Yes	6 (9.2)	49 (55.1)	8.25** <sup>b</sup>
	No	6 (100)	49 (83.1)	
Physically abused by client (last year)	Yes	0 (0)	10 (16.9)	7.18**
	No	30 (46.2)	59 (66.3)	
Sexually abused (last year)	Yes	34 (52.3)	27 (30.3)	3.65
	No	57 ( 87.7)	67 (75.3)	
Basic HIV knowledge (correct answers)	Yes	7 (10.8)	20 (22.5)	.71
	0-3	10 (15.4)	13 (15.1)	
	4	14 (21.5)	15 (17.4)	
	5	17 (26.2)	21 (24.4)	
	6	24 (36.9)	37 (43.0)	
Ever tested for HIV	No	13 (20.0)	7 (7.9)	4.95*
	Yes	51 (78.5)	81 (91.0)	
HIV risk self-assessment	No or low risk	15 (23.1)	28 (31.5)	1.68
	Moderate risk	26 (40.0)	29 (32.6)	
	High or extremely high risk	24 (36.9)	29 (32.6)	

<sup>a</sup>Numbers do not always add up due to missing cases

\*Inter-group difference significant at .05, \*\* .01, \*\*\* .001

<sup>b</sup>Fisher's exact test

Table 2 – Correlates of Consistent Condom Use with Clients

	Consistent condom use with clients (last month)	
	Adjusted OR	95% CI
	<i>n</i> =142	
Sample (Zagreb = 1)	14.48**	2.96-70.74
Age groups		
18-28 (referent)	1	
29-39	1.28	.39-4.20
≥ 40	2.23	.49-10.20
Education (1=secondary school or some college)	4.76*	1.41-16.09
Number of clients (last month)		
≤ 10 (referent)	1	
11-20	.39	.13-1.22
≥ 21	.27	.05-1.42
Married or in a relationship (1=yes)	1.12	.35-3.60
Victimization experience		
None (referent)	1	
Physically or sexually abused	1.42	.36-5.60
Physically and sexually abused	1.00	.25-3.90
Basic HIV knowledge (correct answers)		
0-3		
4	.32	.07-1.48
5	.31	.08-1.22
6 (referent)	.86	.20-3.77
Tested for HIV (1=yes)	8.34*	1.64-42.55
Diagnosed with STI in the preceding year (1=yes)	1.05	.17-6.41
HIV risk self-assessment		
No or low risk (referent)	1	
Moderate risk	.60	.16-2.25
High risk	.23*	.07-.90
Visited gynecologist in the last year (1=yes)	1.78	.51-6.17

\**P*<.05, \*\**P*<.01, \*\*\**P*<.001