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Exploring the Influence of Age, Ethnicity and Education as Risk Factors for HIV Transmission among Adolescent and Young Female Sex Workers in Romania

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Joanna BUSZA⁵

Abstract

The present study explored the risk behaviors for HIV transmission of adolescent and young female sex workers (FSW) from three large cities of Romania. A snowball sample of 300 FSW aged 13-24 years old identified the main risk factors for HIV infection, based on measures of association between variables (Pearson chi square), tests for differences of means (t tests) and logistic regressions for predicting the vulnerabilities of respondents. The main risks identified were: injecting drugs and selling sex, being younger (under 18 years old), inconsistent condom use, belonging to the Roma ethnic group and having low education. Context-specific indicators of vulnerability include not having ID papers, having forced sex (reported by more than half of FSW) or having anal sex. Data reveal that younger FSW (under 18 years old) and of Roma ethnicity are experiencing higher risks than older ones and non Roma. While increased vulnerability among younger FSW has previously been identified, this study reveals that ethnic Roma FSW are overrepresented within this group and are particularly at high risk for HIV transmission.

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Introduction

Recent research shows that most commercial sex workers (CSWs) in Europe are Romanians (TAMPEP, 2009), but studies on their risk behaviors are rare (ARAS, UNAIDS, 2005; Preda et al., 2009). While Romania is a low prevalence country for HIV, over half of all new HIV infections occur among young people aged 15-29, 75% heterosexually infected (Ministry of Health, 2007-2010). Seroprevalence of HIV among CSW is low (0.99%), but Hepatitis C prevalence is 31% (Petrescu, 2010), highlighting the need to understand relevant behavioural risks to inform effective prevention programs. Adolescent sex workers are one of the groups most-at-risk for HIV and other sexual and reproductive health outcomes (UNICEF, 2010; ILO et al, 2008; Inter-Agency Task Team on HIV and Young People, 2008; Ford et al., 2000; Sarkar et al., 2006). Younger sex workers also tend to have limited access to and use of prevention and treatment services, particularly if they are concerned about legal repercussions (Shahmanesh et al., 2009), in Romania sex work being criminalized (Petrescu, 2009).

Research conducted among adult sex workers in Romania in 2005 demonstrated risk behavior including that 11% of female sex workers (FSW) reported injecting drugs, 40% of whom shared injecting equipment (ARAS, UNAIDS, 2005; TAMPEP, 2007). The data also suggested that FSW initiated sexual behavior, including commercial sex, at a young age. Roughly 9% of the sample was younger than 18, and younger sex workers demonstrated poor HIV knowledge than their older counterparts.

The objective of this study was to identify risk factors for HIV and other adverse reproductive and sexual health outcomes among adolescent and young female sex workers in Romania. The study formed part of a wider regional program of research and intervention design implemented by UNICEF and funded through Irish Aid. Results help inform UNICEF's advocacy strategies and support for interventions at both country and regional levels. The article aims to explore the relevance of previously identified risk factors and to highlight new ones.

Methods

The study carried out between November 2007 and March 2008 was based on a snowball sample of 300 respondents (13-24 years old) in 3 cities: Bucharest (capital, N=150), Constanța (harbor city to the Black Sea, N=75) and Timișoara (close to western border with Serbia, N=75). In all three cities, participants were

initially recruited through the outreach program implemented by the only NGO providing harm reduction services to sex workers, Romanian Association Against AIDS (ARAS); these included both street and brothel-based sex workers. The sample was then extended through the social networks of respondents. Eligibility criteria were: younger than 25 years old, selling sex in the last month and living or working in the city.

Trained outreach workers with experience of working with FSW and injecting drug users (IDU) administered the questionnaires. Interviews were conducted on the street or in a van of the mobile/outreach team of ARAS. Each respondent received an incentive after completion of the questionnaire – cosmetics and telephone cards worth approximately 10 Euro. All subjects signed a consent form to participate in the research and were ensured confidentiality. The study protocol received ethical approval from the Ethics Commission of the Ministry of Public Health. Data was analyzed using SPSS version 16.0.

Measures

The questionnaire elicited socio-demographic variables (age, education, ethnicity, marital status) and other information based on questions used for reporting indicators developed by Family Health International for Behavioral Surveillance Surveys (Family Health International, 2000) and by UNAIDS for monitoring and evaluation HIV prevention among most at risk populations (UNAIDS, 2007). The focus was on behaviors carrying potential risk of acquiring and transmitting HIV, other sexually transmitted infections, as well as factors reflecting wider vulnerability such as experience of unwanted pregnancy, police harassment and incarceration. Specific modules contained questions relating to injecting drugs and equipment sharing; sexual behavior (including commercial sex), condom use and number of partners; and behavioral determinants such as knowledge of HIV, legal and social conditions and access to services, including use of clinic or outreach services to obtain clean needles and condoms and receive HIV testing.

Data analysis is focusing on identifying risk factors linked with injecting behavior, sexual behavior and other vulnerabilities based on measures of association between variables (Pearson chi square), tests for differences of means (t tests) and logistic regressions for predicting the vulnerabilities of respondents. Data are analysed by age (below 18 years old vs. 18 and over years olds), ethnicity (Roma vs. non Roma) and education (No school/primary school vs. others). Where appropriate other variables were included to explore further vulnerabilities.

Results

Socio-demographic data

Women aged younger than 18 (and thus legally minors) represented 21.0% of the sample; the mean age was 19.55. The level of education among FSW is extremely low 23.8% of them never enrolled in school or did not graduate from primary school, while 23.8% of the respondents did continue with their education after graduating secondary school. Only 0.6% of those aged 18 and under was still enrolled in school. The sample includes a higher proportion of Roma (27%) when compared to that from the general population (at the last census from 2002, only 2.5% of the population self-declared Roma) (Institutul National de Statistica, 2002). Within the group of Roma, there is a significant association between the educational level and the ethnicity of the respondent (Pearson $\chi^2(7) = 32.1567$ Pr = 0.000) showing the lower education for Roma FSW.

Table 1. Socio-demographic data

		Percent (N)
Age group	17 years and below	21.0% (63)
	18 – 24 years	79.0%(237)
Average/mean age		19.55 (300)
Level of education	Never enrolled in school/primary school – incomplete	23.8% (71)
	Primary school - complete	13.8% (41)
	Secondary school - incomplete	22.5% (67)
	Secondary school - complete	16.1% (48)
	Vocational school/ high school (complete or incomplete)	23.8% (71)
Now in school		1.4% (4)
Self-declared ethnic group	Non Roma	73.0% (211)
	Roma	27.0% (81)

Injecting behavior

Overall 21.8% had ever injected drugs, and this varied significantly by age. A quarter of 18-24 year olds had ever injected compared to 8.9% of under 18s ($p=0.008$). 39.7% respondents from Bucharest reported drug use; injecting was not reported by any FSW in the other city samples. Age seems to be an important predictor – the women within 18-24 age interval have a higher probability to have ever injected drugs than those under 18 of age (25.3% vs. 8.2%; $t=3.76$, $p<0.000$). Ethnicity is another variable related to this behavior – the proportion of Roma FSW who inject drugs is more than double than the one of non Roma FSW (35.9% vs. 16.7%; $t= 3.19$, $p< 0.002$). Within the group of people who had been

in reeducation centers for minors 60% injected drugs at least once in a lifetime (not necessarily when in centre), while among those not being in a reeducation centre the percentage is only 19.8% ($t=3.02$; $p=0.03$). Education does not have significant influence on injecting behavior.

In order to further identify whether the influence of the before mentioned predictors (Roma vs. non Roma, Age 18+ vs. Below 18 Age (in years), Ever having been in a reeducation center, No school/primary school vs. others) neutralize each other when they are simultaneously analyzed, we used a logistic regression model using injecting drug use as the dependent variable (see Table 4, first column). Three of the four variables remained significant (the education was not significant even if we controlled for these variables) revealing that being Roma FSW, over 18 years old and in a reeducation centre increases the risk of injecting drugs.

Needle sharing in the last month is reported significantly more frequently by Roma than by non Roma FSW (53.6% vs. 8.8%, $pd \leq 0.001$). The use of sterile injecting equipment and daily injection of drugs did not differ significantly by age or ethnicity. Those with more than secondary school report less IDU behaviour and safer practices when injecting drugs compared with those with no more than secondary education.

Sexual behavior

95.9% of FSW reported sexual debut before they were 18 years of age, while 46.4% of respondents reported vaginal intercourse prior to age 15. Within the sample age at first sex varied by ethnicity (62.0% Roma FSW vs. 40.6% non Roma, $t=3.32$; $p=0.001$). We found also a significant association between the educational level and the age at which the respondents initiated vaginal sex (table 2); among respondents with no schooling at all, 82.4% of respondents reported sexual debut before age 15 compared with 25.0% of those with at least high school education (Pearson $\chi^2(7) = 25.6357$ Pr = 0.001). Although ethnicity is associated with the level of education, this is still a significant predictor after controlling for education – the odds ratio for sex before 15 years is 2.2 for Roma (see Table 4).

Table 2 Having the first sexual contact before 15 and having had anal sex, by educational level (%)

	Respondents having had the first sexual contact before 15 years old			Respondents having had anal sex		
	Yes	No	Total	Yes	No	Total
Never been enrolled in school	82,4	17,7	100	5,9	94,1	100
Primary school – uncompleted	57,7	42,3	100	7,7	92,3	100
Primary school – completed	58,5	41,5	100	32,5	67,5	100
Secondary school – uncompleted	46,9	53,1	100	35,8	64,2	100
Secondary school completed	38,3	61,7	100	25,0	75,0	100
Vocational school	26,7	73,3	100	20,0	80,0	100
High school – uncompleted	27,7	72,3	100	19,6	80,4	100
High school completed or higher	25,0	75,0	100	55,6	44,4	100
	<i>Pearson chi2(7) = 25.64; p<0.001</i>			<i>Pearson chi2(7) = 22.82; p<0.002</i>		

24.1% of the respondents reported engaging in anal sex, and this was more likely among respondents with higher levels of education. Older FSW experienced anal sex more than younger ones (28.2% of the respondents aged 18-24 years old vs. 8.2% of under 18 years old - $t=4.34$; $p=0,000$). Age is also a significant predictor after controlling for the level of education; being 18 or above increases the odds of having anal sex by a factor of 3.57 (see Table 4).

Irrespective of sexual activity, two important findings in this context relate to the age at which the respondents began to have anal or vaginal sex for money and the consistent usage of condoms. Within the sample 34.5% had commercial sex before the age of 16 and 78.2% before the age of 18. Ethnicity is once again one of the significant predictor – 50.7% of Roma girls compared to 28.8% among respondents of other ethnicity ($t=3.31$; $p=0.001$). Similarly, 55.4% of the sample with no more than primary school began exchanging sex before 16 years, while the figure is 28.2% for the better educated respondents ($t=3.92$; $p=0.000$). Both level of education and ethnicity are still significant when included in logistic regression (see Table 4).

Condom use varies according to partner type, and is more frequent with occasional or commercial partners than ones considered “steady”. While 8.5% of respondents said they used condoms consistently with steady partners, this is much higher with commercial partners (68.3%).

Table 3 Types of partners and usage of condoms, by type of partners, (%)

	Regular partners	Occasional partners	Commercial partners
% of girls having different types of partners within the last year	47.3	29.0	100%
% of those who used condoms during the last sexual contact with...	18.3	59.8	94.7
% those who used condoms consistently within the last month with...	8.5	37.9	68.3

However, a logistic regression reveals several factors that explain the consistent use of condoms in the case of commercial partners (see Table 4).

- The level of education is a significant variable – those with at most primary school education have 0.43 lower chances than the other ones to have used condoms consistently during the last month, controlling for all the other variables.
- The age at which the respondent began to practice commercial sex is a significant predictor – the higher this age is, the higher the odds the respondent use the condom consistently.
- The ethnicity effect seems to be more obvious when controlling for education and the age at which they began the sexual life. Roma girls have odds greater by 4.23 than the others to use the condoms consistently, controlling for the other variables.

A strong proxy indicator of poor consistent usage of condoms is reported pregnancy. The data indicate 61.7% of respondents were ever pregnant, and among these 84.9% had at least one abortion (52.3% of the entire FSW sample). The only clear-cut variable in a logistic model is the age of the respondent, over 18s FSW being significantly more likely to consistently use condoms than under 18s (68.8% vs. 37.9%; $p \leq 0.000$) (see - Table 4).

Other vulnerabilities

One of the problems faced by these FSW is forced sex (defined as having sex against one's will) – 49.8% of the respondents said they have been in this situation at least once (22.7% of the respondents mentioned forced sex in the last year). Younger sex workers appear more vulnerable to coerced sex, as it was reported by 34.9% of FSW under 18 and 19.4% for those 18+ for the past year ($t=2.36$; $p=0.019$). Roma FSW also appear more vulnerable than non Roma, 35.8% vs. 17.8% ($t=3.02$, $p=0.003$). The locality seems to be another significant predictor – 27.8% respondents from Bucharest compared to 17.5% from the other two localities ($t=2.16$; $p=0.032$). All these three variables (age, ethnicity and locality) retained significance in logistic regression (see Table 4).

Table 4. Logistic regression for predicting the vulnerabilities of the respondents (R)

	Ever injecting drugs	R had sex before 15 years old	R had anal sex	R had commercial sex before 16 years old	R used condoms consistently during the last month	R got pregnant	R was forced to have sex last year	R had an id card
	Odds ratio	Odds ratio	Odds ratio	Odds ratio	Odds ratio	Odds ratio	Odds ratio	Odds ratio
Roma <i>versus</i> non Roma	2.7***	2.2***	3.6**	2.3***	4.2***		2.1**	0.2***
Age 18+ <i>versus</i> Below 18	4.3***							2.4***
Age (in years)						1.5***	0.4***	
Ever having been in a reeducation center	5.4***							
No school/primary school vs. others		2.3***	.2***	2.9***	0.43**			0.5**
R had an occasional partner during the last 12 months					2.1**			
Age at which R had for the first time commercial sex					1.2**			
Living in Bucharest <i>versus</i> in Constanta/Timisoara							2.0**	
Pseudo R2	0.10	0.05	0.08	0.07	0.15	0.12	0.07	0.15

*** p<0.01; ** p<0.05; * p<0.1

Furthermore, the study examined whether respondents had national identity papers, which are needed to access health and social services in Romania. Only 70.7% of the respondents had a birth certificate and only 64.7% had a permanent or temporary identity card. The profile for those having an identity card is the same with that of the other risks –the significant predictors are the same: ethnicity, age and education.

Discussion

This study aimed to assess the level and distribution of risk factors for HIV transmission among young female sex workers in three large cities of Romania. The overlap between sex work and drug injecting is two times higher than in a previously conducted survey in 2005, although injecting drug use appears to be a particular feature of sex work in the capital city. These figures are even higher than those from other Eastern European countries like the Russian Federation and Ukraine (UNAIDS, WHO, 2009). Older FSW tend to be also IDU at higher rates than younger ones. Most FSW started selling sex before age 18 years, but this could reflect the sampling strategy which targeted the youngest FSW. The main risk factors for HIV infection are: injecting drugs and selling sex, being younger (under 18 years old), of the Roma ethnic group and having low education. In addition to these, context-specific indicators of vulnerability include not having ID papers, having forced sex (reported by more than half of FSW) or having anal sex. While Roma FSW became involved in the sex industry at earlier ages, they tend to report higher consistent condom use. This could be explained by a male-oriented cultural tradition to protect the steady partner from getting infections, but with whom condom use is lower.

Data revealed that younger FSW are less likely than their adult peers to report condom use. In line with data from other studies, condom use is higher with commercial sex partners than with steady partners (Hong and Li, 2008; Lau et al, 2002), but in Romania the difference between the two is much higher than in other studies. The high proportion of those reporting pregnancy also suggests that condom use is not as high as reported, although the survey did not differentiate between pregnancies by personal partners versus clients.

Not having identity papers implies not having access to social and health services, this being the case for younger FSW, Roma and those with low education. For those under 18 years old the access to health services is even lower due to legal constraints (parental consent required).

There are also some limitations of the findings. For instance, the first subjects included in the research were clients of harm reduction/outreach services developed by the local NGO who conducted the fieldwork. This is likely to have

influenced the data, especially regarding coverage with services (overestimation). However, based on information from fieldworkers, there were also new clients referred by peers to the research, suggesting the sampling strategy was able to penetrate into respondents' social networks. Administration of the questionnaire by those NGO staff who were familiar with (most of) the subjects may have influenced the degree of socially desirable answers provided, especially on topics related with sexual behavior (e.g. condom use). In the same time, this was the only NGO providing outreach services to FSW and made it possible for the research to be carried out. It would have been much more difficult to approach FSW with unknown fieldworkers and to have more reliable results.

Conclusions

Implications for policy and practice. Taking into consideration the high risk behaviors for HIV transmission in the absence of harm reduction services, there is a need to address adolescent and young FSW with appropriate services e.g. a national public health program for vulnerable groups which should include a wide range of free services, starting from monitoring pregnant women, HIV counseling and testing, harm reduction services, drug addiction treatment, free treatment of sexually transmitted infections, HIV/AIDS, of dermatological diseases, TB, as well as of other specific conditions. In this way, immediate health care can be provided, regardless of the beneficiary's health insurance status (insured/not insured), of his/her being or not in possession of identity papers. Specific for FSW, decriminalization of sex work could improve their work conditions and create an enabling environment for them to practice safer sexual and health-seeking behavior.

Implications for research. Future research should focus on FSW access to services, perceived quality of life and sexual/reproductive health. More research can be carried out to explore the risk environment of adolescent and young FSW in order to identify conditions that would provide an enabling environment for increased use of condoms with both commercial and steady partners. Further qualitative work may highlight salient aspects of sex work and help in differentiating between declared attitudes and actual behaviors. More research is needed to better understand the high vulnerability of Roma girls. In order to extend the generalizability of data, other cities where sex work exists could be included, and sampling methods piloted to reach FSW beyond those in sites where outreach and other harm reduction services are already in place.

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