

HIV/AIDS Risk Behaviours among Roma and Non-Roma Sex Workers in Belgrade (Serbia)

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ABSTRACT

The aim of this cross-sectional study was to analyze differences between Roma and non-Roma sex workers (SWs) according to their HIV/AIDS risk behaviors. In this study 91 Roma and 100 non-Roma SWs were included. They offered sex services at Belgrade hot spots during the period 2006–2007. Roma SW were significantly younger and with lower education and they were significantly more often without reading and writing skills than non Roma SW. They also significantly more often had the first sexual intercourse before an age of 14 years. Roma and non-Roma SWs did not differ significantly in their risky sex behaviors. Out of all SWs (both Roma and non-Roma) 13.6% had more than 5 clients daily, 61.3% always used a condom with the commercial sex partners and 17.3% always used a condom with the steady partner. More than half of all participants (55.0%) reported daily use of some psychoactive substance. Correct answers to all 6 standardized questions regarding HIV transmission gave only 9.9% Roma and 5.0% non-Roma SW and mean scores were 2.87 for Roma and 3.03 for non-Roma SW. These differences were not significant. According to multivariate analysis, Roma SWs were significantly younger, less educated, and with more testing to HIV during life in comparison with non Roma SWs. Significantly protective determinants for Roma SWs were knowledge of reading and writing and less frequently daily using of ecstasy during last month in comparison with non Roma SWs. It is necessary to continue work on education of both Roma and non-Roma SWs and to reconsider and revise the existing prevention programs regarding their impact on HIV transmission knowledge and the respective protective behaviors.

Key words: HIV/AIDS, sex workers, sexual behavior, Roma

Introduction

Roma represent one of the most deprived and marginalized populations, which makes them especially susceptible to HIV and other sexually transmitted infections (STIs)¹. Qualitative studies conducted in Bulgaria and Hungary showed that, in general, Roma men have a right to great sexual freedom before and during marriage, as well as large number of sexual partners, and that Roma women are virgins before marriage and that they have sexual relations with their husbands only². Roma rarely use condom, mostly for contraception, not for prevention. As much as 77% of Roma women did not use condom during their most recent vaginal intercourse³. In one study conducted in Spain, as much as 70% of HIV positive Roma were intravenous drug users, com-

pared to 25% of HIV positive Payos (Caucasian non-gypsy Spanish natives)⁴. According to research by Garcia et al., alcohol abuse and the injection of illegal drugs may be widespread among Roma⁵.

It is estimated that approximately 109 thousand Roma live on the territory of Serbia, which represents 1.4% of the total population⁶. In Serbia, around 40% Roma are below 20 years of age, making this Roma population one of the youngest in Europe⁷.

The national estimate of the number of HIV infections in Serbia at the end of 2007 was 2200, with a prevalence rate in the general population of 0.01%⁸. During the last 10 years, a significant decrease in the number of

newly diagnosed HIV infected injecting drug users (IDUs) was recorded in Serbia (from 70% of IDUs in 1990, to 12% in 2007), while unprotected sexual intercourse with persons of the opposite and same sex became the dominant way of HIV transmission among newly diagnosed cases of HIV/AIDS (from 20% in 1990, to 70% in 2007)⁸.

Sex work in Serbia, as in many countries, is illegal and clandestine, drawing police repression against sexual workers (SWs) in the street^{9,10}. In Belgrade, the capital of Serbia, among tested SWs the prevalence of HIV infections was 2.2%, but there were no official records on HIV/AIDS prevalence among Roma¹¹. HIV prevalence among female SWs in sub-Saharan Africa varies between 21% and 75%¹⁰, but in Western Europe it is generally below 2%, except for those who are injecting drug users (IDUs)¹². The aim of this study was to analyze differences between Roma and non-Roma SWs according to their HIV/AIDS risk behaviors.

Methods

Setting, social network recruitment and participants

This was a cross sectional study utilizing an interview questionnaire designed for the survey to assess high-risk behaviors among sexual workers. The study was conducted in Belgrade, the capital of Serbia, from January 2006 to December 2007. Roma (91 respondents) and non-Roma sex workers (SW) (100 persons – 99 Serbian and 1 Croatian) were included in the study. Inclusion criteria were: (1) more than 15 years of age; (2) working in commercial sex; (3) living and/or working in Belgrade; (4) willingness to participate in the study after detailed explanation by interviewers. Commercial SW was defined as a person who has been exchanging sex for money and/or any other material compensation. The participation rate was 90.1%. SWs did not receive any compensation for participation in the study.

The participants were persons who offered sex services on 10 from 30 identified Belgrade hot spots (5 streets, one park and 4 clubs). In the first phase hot spots were identified and mapped through data gathered from various sources. Most data were obtained from the non-governmental organization (NGO) JAZAS, which has been implementing outreach work and prevention activities among SW in Belgrade since 2004. Other sources were advertisements, magazines, websites, newspapers, as well as interviews with key informants from the field, coordinators of outreach activities from NGO, sex workers who are now peer educators, and nightclub owners. Hot spots (clubs, massage parlors, business escort) for indoor sex work were identified and mapped through phone contacts advertised through public media and those people who are already known to engage in indoor sex work. In the second phase, the number of people at these locations, visibility and safety were estimated. Only 30 (22 streets, 2 parks and 6 clubs) of all locations (49) met the following criteria for inclusion: number of people

higher than 6, adequate visibility during day and night and adequate safety for field workers to be able to conduct interviews. In each of these three groups (streets, parks and clubs) hot spots (5 streets, one park and 4 clubs) were randomly selected.

Snowball sampling was used at all selected hot spots. Interviewers contacted two SWs (two »seeds«) at each »hot spot«, who later introduced them to other SWs (no more than two), the latter with yet others. This chain referral was conducted until new sample members could be contacted, i.e. until the 'point of surfeit'¹³. The snowball sampling method was used due to the well developed network of communication in the studied population.

All participants were offered pre and post test counseling and a HIV testing (the participation rate was 30%) in the mobile medical unit and genital screening for sexually transmitted infections (the participation rate was 42%), although screenings and testing were not a precondition for participation in the study. All participants received risk reduction counseling and condom materials.

Data collection

Data were collected by experienced interviewers through 30-min interviews in the mobile medical unit in the field. The interviews were conducted by the use of a questionnaire, which was designed for the survey, and field tested prior to implementation. The questionnaire included questions on demographic characteristics (sex, age, education, ethnicity, legal employment, knowledge of writing and reading skills and marital status), knowledge of HIV transmission and sex related behavior such as age of first sexual intercourse, number of commercial sex partners during the last working day, use of condoms with commercial sexual partner during the last 30 days (everyday, not always or never), use of condoms with steady partner during the last 30 days (everyday, not always or never), condom failure during sexual intercourse anytime in life (yes/no), ever being tested for HIV infection and STIs during last 6 months (yes/no), and psychoactive substances daily use – alcohol, marijuana, sedatives, painkillers, ecstasy, cocaine, speedball (combination of heroin and methamphetamines), heroin, illicit drug use ever and history of injecting drug use (yer/ no).

In the analysis of participant's knowledge about HIV transmission three composite indicators were used: comprehensive knowledge about HIV/AIDS, knowledge of HIV/AIDS prevention and knowledge on common misconceptions about HIV/AIDS. Comprehensive knowledge is an index which is based on the answers to six questions i.e. three questions on knowledge of prevention and three questions on common misconceptions¹⁴. Questions on knowledge of HIV/AIDS prevention were as follows:

1. Can people protect themselves from HIV by using condom every time they have sex?
2. Can people protect themselves from HIV/AIDS by having one uninfected faithful sexual partner?

3. Can people protect themselves from HIV/AIDS by using condom every time they have oral sexual intercourse?

The following three questions were used for assessment of knowledge on common misconceptions about HIV/AIDS transmission:

1. Can a person get HIV/AIDS from eating food from the same plate as a person infected with HIV?

2. Do you think that a healthy-looking person can be infected with HIV/AIDS?

3. Can a person get HIV/AIDS by a mosquito bite?

Response options for all six close-ended questions about knowledge of HIV transmission were »Yes«, »No« and »I do not know«.

Data analysis

Quantitative data were analyzed using SPSS software. Chi-square tests, Fisher's exact test and t-test were used to test differences in HIV/AIDS risky sexual behaviors between Roma and non-Roma SWs. A p value of <0.05 was considered statistically significant. Multiple logistic regression was used to explore determinants of risk for HIV infection among Roma and non Roma SWs. Only the independent variables which were significantly associated with an outcome at univariate level (p<0.1) were included in multivariate analyses.

Ethical issues

The ethics committee of the School of Medicine approved the study by reviewing the study protocol and all other documents used in the study. Informed, written consent was obtained from participants prior to interviews, and all of them were assured of the security of the information provided.

Results

Demographic characteristics of participants are presented in Table 1. Roma commercial SWs were significantly younger (p<0.001) and they had significantly lower education (p<0.001) than non-Roma SWs. Significantly lower percentage of Roma SWs knew to read and write than non-Roma SWs (p=0.001). There were no significant differences between Roma and non-Roma SWs in relation to sex and marital status, although, percentage of females among Roma SWs (59.3%) was lower than among non-Roma SWs (68.0%).

Table 2 shows sexual behavior of Roma and non-Roma SWs. First sexual intercourse before the age of 14 was significantly more often reported among Roma SWs than non-Roma SWs (p=0.002). There was no significant difference between studied groups in terms of the location of providing sex services, the number of clients during the last working day, inconsistent use of condom with commercial sex partner during the last 30 days, inconsistent use of condom with steady sex partner during the last 30 days, presence of sexually transmitted infections during last 6 months and history of testing for HIV.

Data about use of psycho-active substances among SWs are presented in Table 3. Roma SWs used painkillers (p=0.0010), ecstasy (p<0.001), cocaine (p=0.012), and speedball (p=0.041) significantly less often than non-Roma SWs. There were no significant differences between groups in the daily use of alcohol, marijuana, sedatives, speedball, heroin and all drugs during the month prior to the study, as well as in ever using drugs and ever injecting drugs.

As presented in Table 4, among studied groups there were no significant differences in mean numbers of correct answers (mean scores) to questions regarding knowledge of HIV/AIDS prevention (p=0.540) and about mis-

TABLE 1
DISTRIBUTION OF ROMA AND NON-ROMA SEX WORKERS (SWs) BY DEMOGRAPHIC CHARACTERISTICS, BELGRADE, 2006–2007

Demographic characteristics	Roma SWs (N=91) N (%)	Non-Roma SWs (N=100) N (%)	χ^2 -test	p value
Sex				
Female	54 (59.3)	68 (68.0)	1.713	0.425
Male	19 (20.9)	18 (18.0)		
Transgender	18 (19.8)	14 (14.0)		
Age (years)				
<18	23 (25.3)	5 (5.0)	16.590	<0.001
19–24	25 (27.5)	28 (28.0)		
25–30	20 (21.9)	30 (30.0)		
>31	23 (25.3)	37 (37.0)		
Education				
Elementary or less	90 (98.9)	64 (64.0)	14.060	0.001
Secondary, higher and high	1 (1.1)	36 (36.0)		
Knowledge of reading and writing	52 (57.1)	82 (82.0)	1.460	0.227
Married	48 (52.7)	44 (44.0)		

^a Fisher's exact test

TABLE 2
DISTRIBUTION OF ROMA AND NON-ROMA SEX WORKERS (SWs) ACCORDING TO RISKY SEX BEHAVIOR

Risky sex behaviour	Roma SWs (N=91) N (%)	Non-Roma SWs (N=100) N (%)	χ^2 -test	p value
First sexual intercourse <14 years	49 (53.8)	32 (32.0)	9.310	0.002
Place of providing sexual services				
Street/Park	48 (52.7)	65 (65.0)	2.961	0.085
Clubs	43 (47.3)	35 (35.0)		
Number of clients in the last working day				
1	5 (5.5)	2 (2.0)	3.432	0.152
2–5	77 (84.6)	81 (81.0)		
>5	9 (9.9)	17 (17.0)		
Inconsistent ^a use of condom with commercial sex partner during the last 30 days	35 (38.5)	39 (39.0)	0.006	0.939
Inconsistent ^a use of condom with steady ^b partner during the last 30 days	79 (88.8)	79 (79.0)	2.365	0.124
STD during the last 6 months	18 (19.8)	21 (21.0)	0.044	0.835
Ever tested to HIV	70 (76.9)	66 (66.0)	2.772	0.096

^a – never or not always; ^b 83 Roma and 89 Serbian sex workers had steady partner

TABLE 3
DISTRIBUTION OF ROMA AND NON-ROMA SEX WORKERS (SWs) ACCORDING TO PSYCHO-ACTIVE SUBSTANCES USE

Psycho-active substances	Roma SWs (N=91) N (%)	Non-Roma SWs (N=100) N (%)	χ^2 -test	p value
Daily use of alcohol during last month	82 (90.1)	89 (89.0)	0.063	0.802
Daily use of marijuana during last month	41 (45.1)	53 (53.0)	1.203	0.273
Daily use of sedatives during last month	45 (49.5)	55 (55.0)	0.588	0.443
Daily use of painkillers during last month	31 (34.1)	58 (58.0)	10.968	0.001
Daily use of ecstasy during last month	7 (7.7)	27 (27.0)	12.138	<0.001
Daily use of cocaine during last month	8 (8.8)	22 (22.0)	6.278	0.012
Daily use of speedball during last month	3 (3.3)	11 (11.0)	4.162	0.041
Daily use of heroin during last month	18 (19.8)	21 (21.0)	0.044	0.835
Daily use of any drug	46 (50.5)	59 (59.0)	1.087	0.241
Ever used drug	67 (73.6)	80 (80.0)	1.092	0.296
Ever injected drug	10 (11.0)	20 (20.0)	2.922	0.087

conceptions regarding HIV transmission ($p=0.444$). Correct answers to all 6 standardized questions gave only 9.9% Roma and 5.0% non-Roma SWs and mean scores were 2.87 for Roma and 3.03 for non-Roma SWs. These differences were not significant.

According to multivariate analysis (Table 5) Roma SWs were significantly younger (Odds ratio – OR=2.94, 95% Confidence Interval – 95%CI=1.6–5.3), less educated (OR=40.8, 95%CI = 5.0–331.6), and with more testing to HIV during life (OR=5.7, 95%CI = 2.2–14.2) in comparison with non Roma SWs. Significantly protective determinants for Roma SWs were knowledge of reading and writing (OR=0.4, 95%CI = 0.2–0.9) and less frequently daily using of ecstasy during last month (OR=0.2, 95%CI = 0.1–0.6). These results did not change after adjustment on sex.

Discussion

The results of this study show, that only 1.1% of Roma SWs were with secondary or higher education which was much lower than in Croatia (68.8%) and Montenegro (68.9%)¹⁵. In Serbia, a lower proportion of Roma children attend pre-school programs (62%), primary (74%) and secondary school (10%) in comparison with the general population (89%, 98% and 85%, respectively)¹⁶. The situation is much worse in Bulgaria, where only 10% of Roma complete primary education, 80% are illiterate, and unemployment rates are between 70–90%^{17,18}. Also previous studies conducted in Serbia (2002–2003) showed that there are significant differences in living conditions between the Roma and non-Roma population¹. Furthermore, a lower proportion of Roma in Serbia, compared to

TABLE 4
KNOWLEDGE ABOUT HIV/AIDS TRANSMISSION BY ROMA AND NON-ROMA SEX WORKERS (SWs)

Three composite indicators of knowledge about HIV/AIDS	Roma SWs (N=91) Mean number (SD) of correct answers	Non-Roma SWs (N=100) Mean number (SD) of correct answers	p value ^a
Knowledge of prevention measures for HIV/AIDS ^b	1.71 (0.82)	1.64 (0.85)	0.540
Knowledge of common misconceptions about HIV/AIDS ^c	1.09 (1.08)	1.20 (0.93)	0.443
Comprehensive knowledge about HIV/AIDS ^d	2.87 (1.57)	3.03 (1.55)	0.475

^a p value according to t-test;

^b Correct answers to next three questions:

1. Can people protect themselves from HIV by using condom every time they have sex?
2. Can people protect themselves from HIV/AIDS by having one uninfected faithful sexual partner?
3. Can people protect themselves from HIV/AIDS by using condom every time they have oral sexual intercourse?;

^c Correct answers to next three questions:

1. Can a person get the HIV/AIDS from eating food from the same plate as a person infected by HIV?
2. Do you think that a healthy-looking person can be infected with HIV/AIDS?
3. Can a person get the HIV/AIDS by a mosquito bite?;

^d Correct answers to above mentioned six questions (three questions about prevention and three questions about misconceptions).

TABLE 5
DIFFERENCES BETWEEN ROMA AND NON-ROMA SEX WORKERS: RESULTS OF MULTIVARIATE ANALYSES

Predictors	OR	95% CI	p overall ^a
Age >18 years	2.94	1.6–5.3	>0.001
Elementary or less education	40.8	5.0–331.6	0.001
Knowledge of reading and writing	0.4	0.2–0.9	0.023
Ever tested for HIV	5.7	2.2–14.2	>0.001
Daily use of ecstasy during last month	0.2	0.1–0.6	0.003

^a p value according to multivariate analyses; OR – Odds Ratio; CI – Confidence Interval

the general population, have access to basic infrastructure, such as electricity (87% *versus* 99%, respectively), sewage systems (32% *versus* 62%, respectively) or water supply (61% *versus* 90%, respectively)¹.

In Serbia¹⁹, as well as in Croatia¹⁵, Montenegro¹⁵ and other Central and Eastern European countries²⁰, Roma population decide more often to become involved in sex work in order to improve their financial situation, which, together with low education, contributes to their risky sexual behavior and increased risk of transmission of HIV and other STIs. A study conducted in Bulgaria showed that Roma had high rates of unprotected sexual intercourse, frequent multiple sexual partnerships, low levels of condom use and high STI prevalence^{2,21}.

In a study performed by Solomon et al., SWs with lower education, in comparison to SWs with higher education had STIs more often, had less knowledge about HIV/AIDS, were engaged in sex work and first sexual intercourse at an earlier age, worked on the street more often and were more frequently willing to engage in group sex and had non-paying sexual partners more frequently²².

As already stated, in the present study, in comparison to non-Roma SW, Roma SWs had lower formal education and had first sexual intercourse earlier, but they did not

significantly differ in risky sexual behavior, and they did not significantly differ in the frequency of STIs during the preceding six months. Out of all SWs (Roma and non-Roma) 13.6% had more than 5 clients during the last working day, and, during the last 30 days, 61.3% always used condom with commercial sex partner and 17.3% always used condom with steady partner.

Similar to our study, in some other countries condom use by female SWs with clients is high, but it is rather low or irregular with steady partners^{23,24}. In a study by Aguayo et al., as much as 60% of commercial SWs had 6 or more sexual partners per week, 63% used condom with occasional partners, 8.7% with regular partners, while 0.7% were IDUs²⁵. In Croatia 75.5% and in Montenegro 43.7% SWs consistently use condom with clients and 22.7% SWs in Croatia and 43.7% SW in Montenegro had 5 or more partners in the past week¹⁵.

In studies published by several authors, drug abuse, and particularly crack abuse, has been associated with commercial sex^{15,26,27}. Some drug users turn to sex work out of financial need to support their addiction, while other SW seek escape from their life circumstances and work situations through drug use. The exchange of sex for drugs or money under the influence of drugs is a high-risk encounter that can compromise judgment and the ability to practice safe sex.

Sexual workers from the present study (both Roma and non-Roma) reported frequent daily use of psychoactive substances. It ranged from 7.3% for speedball to 89.5% for alcohol. More than a half (55.0%) reported daily use of some drug. The fact that Roma SWs significantly less often used psychoactive substances such as ecstasy, cocaine, speedball, and painkillers than non-Roma SWs and that they also less often, though not significantly, used all other psychoactive substances except alcohol could probably be explained by their poverty. At the same time, most of Roma SWs do not have health insurance and therefore cannot get prescriptions of sedatives and painkillers.

Ever IDUs were less frequent among our SW (as much as 11% of Roma SW and 20% of non-Roma SW) than it was reported in Croatia (35.9%) and Montenegro (48.7%)¹⁵. Results from North America and Europe show that HIV infected sex workers often inject drugs²⁸, suggesting that it is drug use rather than sex work that makes them susceptible to HIV²⁹. In China, India, Indonesia, Russian Federation and Ukraine, the HIV epidemic has rapidly spread among sex workers and/or IDUs, and HIV prevalence has been about 70% in some sex workers and the IDU population³⁰.

Sexual workers in the present study, both Roma and non-Roma, had a very poor knowledge of HIV transmission. Correct answers to all 6 standardized questions regarding HIV transmission gave only 9.9% Roma and 5.0% non-Roma SW which was less than in Croatia (40.4%) and Montenegro (20.9%)¹⁵. In a study of Kassie et al.¹⁴, among female SW in Ethiopia 75.9% had knowledge of HIV prevention and 83.9% had knowledge of misconceptions about HIV transmission. The corresponding percentages in the present study were 14.7% and 9.4%. The fact that knowledge of HIV/AIDS prevention and about misconceptions regarding HIV transmission is low in both Roma and non-Roma SWs makes it necessary to continue work on education of all SWs.

A major limitation of this study is a small number of respondents included in the study, as well as relevance of the data that were obtained through interviews with sexual workers. It is possible that subjects have been giving answers that are acceptable in their social environment, i.e. that were expected from them. It is therefore possible that they claimed to use condoms more frequently than they really did, or that they admitted to using psychoactive substances less frequently than they did. Furthermore, in the absence of an existing sampling frame, we designed our own by mapping all available information on SWs but the question remains to what degree the study population is really representative and can we gen-

eralize the findings. The snowball sample has also a specific limitation, such as that final sample likely represents the characteristics of the initial respondents, particularly the size and characteristics of their personal networks.

Conclusion

Roma and non-Roma SWs in Belgrade did not significantly differ in risky sexual behavior. Since both Roma and non-Roma SWs had a very poor knowledge about HIV transmission it is necessary to intensify work on educational and health programs and their improvements, together with social support programs. Promoting the use of female condoms should be included in health promotion for sex workers, as it has been proven to be effective and highly acceptable. Also legalization of sex work could probably support such efforts. By continuing outreach work by NGO JAZAS, provision of information, distribution of condoms as well as empowerment of sex workers through self-support groups will strengthen sex workers ability to recognize the risks and protect themselves. Also, continuous lobbying and advocacy for equal rights, the right to choose one's profession, non-discrimination as well as lobbying for the depenalization of sex work can greatly impact the health and health-seeking behavior among sex workers. Sex workers face daily violence by police, pimps/managers, and clients as well as by other citizens. Illegal status of sex work creates an atmosphere of impunity for violence. This pushes sex workers further to work in unsafe working conditions; i.e. dark streets with less visibility, rushing negotiations with clients and sometimes accepting higher prices for unprotected sex due to the economic burden of bribes and extortion. Depenalizing sex work could greatly affect their working conditions, as it would be the first step in providing protection by law-enforcement and protection of their rights. This in turn would decrease risky behavior and provide more opportunity for health-seeking behavior.

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Conflict of interest

None declared.

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HIV/AIDS RIZIČNO PONAŠANJE MEĐU SEKSUALNIM RADNICIMA ROMSKE I NE ROMSKE NACIONALNOSTI U BEOGRADU (SRBIJA)

SAŽETAK

Cilj ove studije presjeka bio je analizirati razlike između seksualnih radnika (SR) Romske i ne Romske nacionalnosti prema njihovom rizičnom ponašanju u odnosu na HIV/AIDS. U ovo istraživanje su bile uključene 91 SR Romske i 100 ne Romske nacionalnosti. Oni su pružali seksualne usluge u Beogradu u razdoblju 2006–2007 godine. SR Romske nacionalnosti su bili značajno mlađeg uzrasta, sa nižim obrazovanjem i znatno češće nisu znali da čitaju i pišu u odnosu na SR ne Romske nacionalnosti. Oni su također znatno češće imali prvi seksualni odnos prije dobi od 14 godina. SR Romske i ne Romske nacionalnosti nisu se razlikovale značajno u svom rizičnom seksualnom ponašanju. Od svih SR (Roma i ne Roma), 13,6% je imalo više od 5 klijenata dnevno, 61,3% uvijek koristi kondom s komercijalnim seksualnim partnerima i 17,3% uvijek koristi kondom sa stalnim partnerom. Više od polovice svih sudionika (55,0%) izvijestio je da svakodnevno koristi neke psihoaktivne tvari. Ispravne odgovore na svih šest standardiziranih pitanja vezanih za prijenos HIV-a dalo je samo 9,9% SR Romske nacionalnosti i 5,0% SR ne Romske nacionalnosti a srednji rezultati je bio 2,87 za Romske SR i 3,03 za ne Romske SR. Te razlike nisu bile značajne. Multivarijantna analiza je pokazala da su SR Romske nacionalnosti bili znatno mlađi, nižeg obrazovanja, i sa većim brojem testiranja na HIV tijekom života u usporedbi sa ne Romskim SR. Značajne zaštitne odrednice za Romske SR su bile znanje da čitaju i pišu i rijeđe svakodnevno korištenje ekstazija tijekom prošlog mjeseca u usporedbi sa ne Romskim SR. Potrebno je nastaviti rad na edukaciji svih SR, Romske i ne Romske nacionalnosti, i preispitati i revidirati postojeće programe prevencije u svezi na njihov utjecaj na znanja o prenosu HIV-a i odgovarajuće zaštitno ponašanje.