RESEARCH PAPER | Medical Science | Volume : 5 | Issue : 4 | April 2015 | ISSN - 2249-555X

Prevalence of Hiv and the Other Sexually Transmitted Infections Among Sexual Workers

KEYWORDS: prevalence, HIV, sexually transmitted infections, sexual workers.

Janja Bojanic	Gordana Guzijan
Public Health Institute of the Republic of Srpska, Banja Luka, Bosnia and Herzegovina	Institute for Transfusion Medicine of the Republic of Srpska

Ljubica Bojanic	Ljubica Jandric
Public Health Institute of the Republic of Srpska, Banja Luka, Bosnia and Herzegovina	Medical University of Banja Luka, the University of Banja Luka, Bosnia and Herzegovina

Nina RodicVukmir	Jela Acimovic
Medical University of Banja Luka, the University of Banja Luka, Bosnia and Herzegovina	Public Health Institute of the Republic of Srpska, Banja Luka, Bosnia and Herzegovina

ABSTRACT *Background: Sexual workers (Sexual Workers -SW) represent the population exposed to extremely high risk of HIV and the other sexually transmitted diseases. Objectives: An aim of this research was to evaluate the prevalence of HIV/sexually transmitted infections among SW in Bosnia and Herzegovina as well as to examine knowledge, attitude and behaviour relating to HIV/sexually transmitted infections. Material and methods: Research was performed in 2012 as a bio-behavioral study that covered 199 SW in five cities of Bosnia and Herzegovina. Interviewing was done voluntarily, anonymously and confidentially, and after SW informed consent, they were taken a biological material (blood) for laboratory testing on HIV, hepatitis b, hepatitis c and syphilis. The results are compared to the results obtained in researches conducted in 2008 and 2010. Results: The research shows the presence of risk behaviour among SW, mostly related to frequent change of partners and frequent unprotected sexual intercourses. Although there is a risk behaviour, only 11,1% think that the risk of HIV/sexually transmitted infections is high and 12,6% think that there is no risk. Results of laboratory testing indicate a low level of HIV/sexually transmitted infections among sexual workers in Bosnia and Herzegovina. Conclusions: Although there are a relative progress in prevention of HIV/sexually transmitted infections among sexual workers and frequent testing on HIV/sexually transmitted infections comparing to earlier periods, these are not enough for maintenance of a low level of infection. Further researches among this population would enable monitoring time trends of HIV epidemic in Bosnia and Herzegovina and become a basis for the development of preventable programmes.*

Introduction

Human Immunodeficiency Virus (HIV) , other sexually transmitted infections (hepatitis b, hepatitis c, syphilis etc.) still represents one of the largest problems of public health worldwide.

According to the data of the World Health Organization, it is estimated that there are 35 millions patients with HIV worldwide, out of which 3 millions are of children, and even 19 millions patients with HIV do not know that they are HIV positive[1]. It is also considered that of the total number of 35 millions HIV positive patients, there are 2 to 4 millions patients with hepatitis b, and 4 to 5 millions patients with even hepatitis c. The largest number of patients is still in Sub-Saharan Africa.[2]

Although the total number of newly infected cases was 2,1 millions in 2013, there was globally a decreasing trend in new cases of HIV infections. Comparing to 2001, when the number of newly infected patients was 3,4 millions, there was a decreasing number of new infections in 2012 of 33% (2,3 millions), and in 2013 of 38% [2]. The number of newly infected children in 2013 was 240 000, that was 58% lower than in 2002, when the number was 580 000 [1].

The number of death cases caused by Acquired Immune Deficiency Syndrome – AIDS was decreased by 35% comparing to 2005, when it reached its maximum. Only in last three years, mortality fell by 19%, representing the largest annual fall in last 10 years.[1] However, a significant increase in the number of death cases happened in certain regions at the same period of time (in the Middle East, Northern Africa, Eastern Europe, and Central Asia).

According to the definition of the World Health Organization, the sexual workers are considered to be of female, male, and transsexual adult persons (at the age of 18 and more) who receive money or goods in exchange for sexual services they provide regularly or occasionally. [4]

Sexually workers are extremely important population that must be controlled for prevention of expansion of HIV and the other sexually transmitted infections; because of frequent unprotected sexual intercourses and the other factors, they can be a cause of infection transmission on clients who then infect their partners and that is the way of epidemic expansion even among general population.

Because of a specific high risk behaviour, the World Health Organization defines sexual workers as groups who are under a higher risk of HIV infection and thus request primary prevention of HIV infection, diagnosis, treatment and care. [4]

There are many reasons for that, but they basically relate

Volume : 5 | Issue : 4 | April 2015 | ISSN - 2249-555X

to frequent sexual intercourses with different clients without a proper usage of condoms, and to the drug and alcohol consumption during intercourses. Sexual workers are also often exposed to discrimination, stigmatization, violence and the other negative social occurrences, and they are not easily available for regular testing, prevention and treatment. [3,4]

According to the data received between 2007 and 2011, it was determined that HIV prevalence among SW was 11,8% with significant deviations between regions. Thus HIV prevalence in Sub-Saharan Africa was 36,9%, in the Eastern Europe was 10,9%, in Latin America and Caribbean 6,1% and in Asia 5,2%. The lowest HIV prevalence among SW was recorded in the Middle East and in Northern Africa (1,7%).[3] Studies also showed that SW were 13,5 times more exposed to the risk of HIV infection than all the other women aged 15 – 49.[3]

Because of that, a constant monitoring of HIV trend , behaviours relating to HIV infection as well as the availability of antiretroviral therapy and potential usage of prophylaxis, especially among vulnerable populations, are of crucial importance.[5]

A general aim of the research conducted from September to December of 2012 was to examine the risk behaviour of SW population in Bosnia and Herzegovina - the population exposed to the increased risk of HIV/sexually transmitted infections. The aim was also to identify risk factors and forms of risk-taking behaviour in order to plan preventive measures and to evaluate the success and coverage of target population conducted by prevented programmes.

Specific aims of the research were:

- to evaluate the prevalence of HIV and selected sexually transmitted infections in SW population and the risk factors accompanied with HIV infection;
- to examine knowledge, attitude and behaviour relating to HIV/sexually transmitted infections in SW population;
- to examine socio demographic and cultural features relating to relevant risk behaviour of target population and to compare the data obtained with the researches conducted in 2008 and 2010.

Material and methods

The research was conducted as a descriptive, multicentric and bio-behavioral study of the prevalence among SW who were defined as any female person who exchanged sexual services for money or something else.

Inclusion criteria for participation in a study were: self-identifying person as a SW, then that they were engaged in paid sexual service in the past 12 months (penetrative sex), that were older than 16, and given informed consent for participation in the study. Exclusion criteria were: person younger than 16 and injection drug user. The research was conducted with the prior approval from the Ethical Committee of the Public Health Institute of the Republic of Srpska.

The research was conducted in the five larger cities in Bosnia and Herzegovina. The sample was selected by using a snowball sample.

Field research covered 199 sexual workers aged 18 – 48. By applying standardized and encrypted questionnaire of an interview method, interviewing was done voluntarily, anonymously and confidentially. After informed consent, blood samples were taken for laboratory testing on HIV, hepatitis B, hepatitis C and syphilis. Blood sample and a referral with an identification code as on the questionnaire were delivered to the laboratory.

Newer-generation ELISA tests were used for testing which was performed in the microbiological laboratory of the Public Health Institute of the Republic of Srpska and in the Institute for Biomedical Diagnostics and Research '' Nalaz'' from Sarajevo.

Respondent was given a phone number on which she can get the information on testing results after 15 days and about possible posttest consultation.

A software SPSS for Windows (version 15.00, SPSS INC, Chicago, Illinois, USA) was used for statistical data analysis. A method of descriptive statistics was used in data processing. Data were shown as frequency and percentage for categorical variables, median and range for ordinals, mean and standard deviation, depending on data distribution, for continuous variables. $\chi 2$ test, with the degree of probability of $p<0,05$, was used for difference testing.

Results

The research covered 199 respondents in five cities of Bosnia and Herzegovina: Bijeljina (34), Banja Luka (55), Mostar (30), Sarajevo (50) and Zenica (30). The largest number of the respondents are citizens of Bosnia and Herzegovina (95,5%), out of which 89,4% live in the city. The median age of respondents is 27,75 (SD= 6,12; IQR=18-48 godina). According to the educational structure, the largest percentage of respondents has Secondary School education (67,8%), then University degree (16,1%) and associated degree (10,1%), and 6% of the total number – Primary School education. About half of the respondents (51,8%) do not have a permanent employment, 17,6% have the permanent employment, 21,1% work occasionally, and 9,5% are students. About half of the respondents (54,3%) have a health insurance. 11,6% of the respondents are married, 14,6% of them are divorced, and the largest percentage is of the single women (67,8%) and that difference is statistically significant ($p<0,001$).

We compared results of our research with the results of the researches conducted in Bosnia and Herzegovina, in 2008 and 2010.

The average age of the first sexual intercourse is 16,5 (SD=1,72; IQR=13-22). 27,6% of the respondents had their first sexual intercourse under the age of 16, 59,8% of them aged 16-18, and 12,6% of them (the lowest percentage) had their first sexual intercourse after the age of 18 and that difference is stastically significant ($p<0,001$). Percentage of 8% of the respondents had their first paid sexual service for money or something else under the age of 16, about half of them (50,8%) aged 17-21, and about one third (32,7%) aged 22-26. The average age of the first paid sexual service is 21 and, comparing to the previous researches, it has a decrease trend (in 2008 –the age of 23,3 and in 2010 – the age of 21,2).

The average internship of providing sexual services is 6,1 years (SD=4,58; IQR=1-24).

The largest number of respondents (75,9%) says that they have five clients a week, and the average number of clients a week is 3,2, that is less than in the researches con-

Volume : 5 | Issue : 4 | April 2015 | ISSN - 2249-555X

ducted in 2008 and 2010, which means it has the decrease trend. The most common way for finding clients is via corresponding contact person (47,7%). Places where respondents meet their clients most often are clubs/casinos (64,3%), followed by private parties (53,6%), caffe bars (48,2%), but not that often in park or on the street. Places where respondents offer sexual services most often are in a rented room (59,8%), hotel (53,3%), their own flat/house (53,3%), public facility (5%), park or some other public place (3,5%).

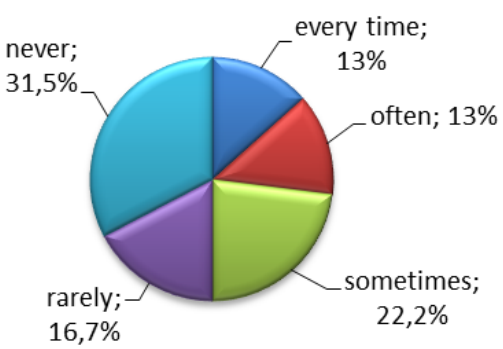
More than 50% of respondents experienced some kind of violence – the most often psychological one (33,7%), physical one (33,2%), and 1,5% of them were victims of trafficking.

Almost all the respondents (97%) state that they provide sexual services for money. About half of respondents (46,2%) provide sexual services for clothes, and lower percentage for food, drink and drug. Paid sexual intercourse in last month had 54% of them. Experience of incarceration had 4,5% of SW. About 90% of respondents provided the oral and vaginal sexual services, but 49,7% of them provided the anal sexual services in last month.

When talking about a condom usage, as the most important measure for prevention of HIV/sexually transmitted infections, the results are still unsatisfactory.

Only 36,7% of respondents said they use condoms during every sexual intercourse with a client, unlike 2,5% of them who say that they did not use a condom with a client in last month. Only 31,2 % of respondents state that they often use condoms. The frequency for condom usage with a steady partner is extremely low; only 13% of them say that they use condoms every time, 13% of them say that they often use them and 31,5% of them say that they never use condoms with a steady partner (Figure 1).

Figure 1. The frequency of the condom usage with a steady partner (2012)



The largest rate of condom usage with a client is during vaginal sexual intercourse (87,6%), then during anal sexual intercourse (66,1%), and the lowest rate of condom usage is reported during oral sexual intercourse (46,2%). The frequency of condom usage during last sexual intercourse is 87,6% and it is of approximate rate to the one from the research conducted in 2010, and there is a noticeable decline of rate in condom usage during anal sexual intercourse (66,1%) comparing to the previous research when it was 82,5% (Figure 2).

Figure 2. The frequency of condom usage during last sexual intercourse (2008, 2010 and 2012)

According to the place of research, condom usage rate shows significant differences. During last vaginal sexual intercourse, condom usage is the lowest in Banja Luka (74,5%), and the largest rate is in Sarajevo (100%); during anal sexual intercourse, the lowest rate is in Mostar (50%), but the largest rate is in Sarajevo (86,1%). During last oral sexual intercourse, the largest rate is in Sarajevo (68%), and the lowest one is in Bijeljina (24,2%).

As a reason for condom usage during providing sexual services, 80,8% of respondents state that they use condoms because they want to. This percentage is significantly higher than in the previous research (59,6%). Only 39,9% of respondents use condoms upon client's request.

When talking about the other risk behaviours, there is a decline trend comparing to the previous researches. A large percentage of respondents (87,9%) states the experience of sexual intercourse under alcohol influence, and 36,7% under drug influence, which must be interpreted carefully since injection drug users are not taken into research.

Comparing to the previous two researches, there is an increase of percentage of those who state that they had some sexually transmitted infections (28,9%) (Figure 3).

Figure 3. Self-reported sexually transmitted infections (STI), a trend (2008, 2010 and 2012)

The most registered sexually transmitted infections are HPV (32,7%), gonorrhea (26,2%), genital herpes (24,4%), and the least registered STI are syphilis (3,2%) , hepatitis B virus (1,6%) and other (13,1%) .

Of the total number of questions relating to knowledge on HIV/sexually transmitted infection, 28,1% of respondents answered correctly all the questions. Comparing such results on knowledge on HIV/sexually transmitted infections with the results from the previous researches (in 2008 and 2010), respondents show a slightly better knowledge (Table 1).

Volume : 5 | Issue : 4 | April 2015 | ISSN - 2249-555X

Table 1. Knowledge on HIV/STI total samples of SW (2008, 2010 and 2012)

	BiH	BiH	BiH
HIV infection can be significantly decreased by proper condom	n=146	n=154	n=198
yes	92,5	96,1	99,5
no	1,4	1,9	0,5
doesn't know	6,2	1,9	0
A person looking healthy can be HIV infected	n=146	n=154	n=199
yes	70,5	84,4	81,9
no	8,2	5,2	6,5
doesn't know	21,2	10,4	11,6

Questions	BiH 2008	BiH 2010	BiH 2012
HIV infection can be significantly decreased by proper condom usage kondoma	n=146	n=154	n=198
yes	92,5	96,1	99,5
no	1,4	1,9	0,5
doesn't know	6,2	1,9	0
A person looking healthy can be HIV infected	n=146	n=154	n=199
yes	70,5	84,4	81,9
no	8,2	5,2	6,5
doesn't know	21,2	10,4	11,6
When using cutlery used by HIV infected persons, another person can be infected by HIV	n=144	n=154	n=199
yes	11,0	12,3	11,6
no	56,3	56,5	71,9
doesn't know	32,7	31,2	16,6
When using already used needles, a person can be infected by HIV		n=154	n=199
yes		96,8	92,5
no		0,6	0,5
doesn't know		2,6	7,0
STI can be transmitted by oral sexual intercourse		n=154	n=199
yes		54,5	71,9
no		14,9	16,6
doesn't know		30,5	11,6
A pregnant woman with HIV can pass HIV to her baby	n=146	n=154	n=199
yes	72,6	81,2	80,4
no	5,5	5,8	4,0
doesn't know	21,9	13,0	15,6
A person can be HIV infected by mosquito bite		n=154	n=199
yes		11,0	14,1
no		48,1	62,8
doesn't know		40,9	23,1
The risk of HIV is decreased by mutual fidelity among HIV-uninfected sexual partners			n=199
yes			71,9
no			14,1
doesn't know			14,1

n = a number of respondents who answered the question

By analyzing the self-assessment results of the risk on HIV/sexually transmitted infections, only 11,1% state that the risk is high, 12,6% of them say that there is no risk, 31,2% of them say that the risk is low. The answer that the risk is moderate had 45,2% of them (the largest percentage).

In all three researches, there is a declining trend of self-assessment that the risk of HIV/sexually transmitted infections is high, and there is an increasing trend of self-assessment that there is no risk, what is worrying and points to a lack of knowledge and awareness of this population.

When being asked if they know where they can get tested, 84,9% of respondents said that they know, mostly referring to the Clinic for Infectious Diseases, and 44% of respondents to Non-Government Organizations (NGO counselling centres) as of places where they can get tested for HIV/STI infection.

The results showed that almost two thirds of respondents (59,8%) had never got tested for HIV, and that was significantly higher comparing to the respondents who had done it once or several times (40,2%) ($p<0,001\%$). Of the total number of respondents, 20 of them (10,1%) got tested for HIV in the past 12 months and they know the test result, which is slightly lower comparing to the previous researches (13,6% in 2010 and 13,7% in 2008). By analyzing the results of respondents who got tested for HIV in the past 12 months, by place, the largest number of respondents got tested in Banja Luka (47,4%), and the lowest number in Bijeljina (5,6%); the percentage of respondents who want to know the test results: 16,7% in Zenica, 16,4% in Banja Luka, 13,3% in Mostar, 2,9% in Bijeljina and 2% in Sarajevo.

After informed consent, all the respondents gave blood for testing for HIV, HBV, HCV and syphilis. Test results showed that the one sample was reactive on HIV, the eight samples reactive on HCV, the one sample reactive on HBV, and no sample reactive on syphilis. Comparative test results in researches conducted (in 2008, 2010 and 2012) are shown on a bar chart 4. The lower rate of reactive results for HCV infection in research conducted in 2012 can be the result of the current injection drug users exclusion from the study.

Discussion

This is the third bio-behavioral science section conducted to assess the prevalence of HIV/sexually transmitted infections, knowledge and attitude, and risk and protective forms of behaviour among SW population in Bosnia and Herzegovina. On the basis of the data obtained in studies, occurrence and expansion of HIV/sexually transmitted infections can be followed among SW population in Bosnia and Herzegovina; their knowledge, attitude and behaviour can also be followed.

The research conducted in five cities of Bosnia and Herzegovina, from September to November of 2012, covered 199 respondents of average age (27,7 years old), without significant differences at age comparing to the researches from 2008 and 2010. [13,14] The respondents were citizens of Bosnia and Herzegovina, from urban areas. The largest percentage of respondents has Secondary School education (67,8%). Slightly more than a half of the respondents (51,8%) at the time of interviewing were not employed,

Volume : 5 | Issue : 4 | April 2015 | ISSN - 2249-555X

and 17,6% have permanent employment, which shows the obvious increase rate of employees, because the number of students/pupils decreases comparing to the researches from 2008 and 2010. [13,14] The largest number of respondents are single (67,8%), 11,6% of respondents are married, without significant differences comparing to the researches from 2008 and 2010.[13,14] The average age of the first sexual intercourse among respondents is 16,5. The largest number of respondents (59,8%) had their first sexual intercourse at the age of 16 – 18, and 30% of them had their first sexual intercourse before the age of 16. 8% of respondents had their first paid sexual service for money or something else before the age of 16, and about a half of the respondents (50,8%) at the age of 17 – 21. These data are especially worrying because according to the Convention on the Rights of the Child (CRC), children and adolescents who are less than 18 years old, but who provide sexual services for money or something else, are considered to be sexually exploited, and not sexual workers.[3]

By analyzing the results of the age of the first sexual intercourse in all three researches, it is noticed that age limit is lowered comparing to the research in 2008 (17,3 years) and it is slightly higher than in 2010 (16,3 years).[13,14]

The average age of providing the first paid sexual intercourse among respondents is 21 years and comparing to the previous researches, it has a decreasing trend, which implies that younger and younger population is engaged in sexual services. The largest number of the respondents state that their engagement in sexual services lasts for about 6,1 years, which is slightly less comparing to the research in 2010 (6,7 years), but more comparing to the research in 2008 (4,4 years), with an average of three clients a week. [13,14]

The highest rate of condom usage during sexual intercourse with a client is of the vaginal intercourse (87,6%), then of the anal intercourse (66,1%), and the lowest rate is of the oral sexual intercourse (46,2%). of three clients a week. [13,14] There has been a decline in the rate of condom usage during the anal sexual intercourse (66,1%) comparing to the previous research (82,5%).[14] The research results of the condom usage by places show the largest frequency of condom usage for all three types of sexual intercourses among respondents in Sarajevo, but the lowest one in Bijeljina for the oral intercourse, in Banja Luka for the vaginal intecourse, and in Mostar for the anal intercourse

More than two thirds of respondents say that they get condoms from the non-government organizations, through Voluntary Counselling and Testing centres, and through other outreach activities .

A large number of respondents state that they provided sexual services under alcohol influence (87,9%) which, comparing to the previous researches, has a trend of slight decrease, [13,14] and under drug influence (36,7%) that is less than in 2010. [14] 28,9% of respondents report any sexually transmitted infection, referring to the increasing trend comparing to the previous researches.[13,14] The most often infections are HPV, gonorrhea and genital herpes, then syphilis, hepatitis b or some other sexually transmitted infections.

When suspecting some sexually transmitted infection, more than a half of the respondents would go to the doctors in the private health institutions, which can imply to a certain lack of confidence, fear of stigma, and thus insufficiently accessible health service.

On all 8 questions related to the knowledge of HIV/sexually transmitted infections and the modes of transmission, 28,1% of respondents answered correctly, and the rate of correct answers on the most questions was over 70%, which was slightly better comparing to previous researches. [13,14] When talking about self-assessment on the risk of HIV/STI, the largest percentage of respondents think that the risk of HIV infection is moderate to low, a part of them is aware of the real risk, but that awareness decreases comparing to the previous researches, which signals a further need for awareness raising about this problem.

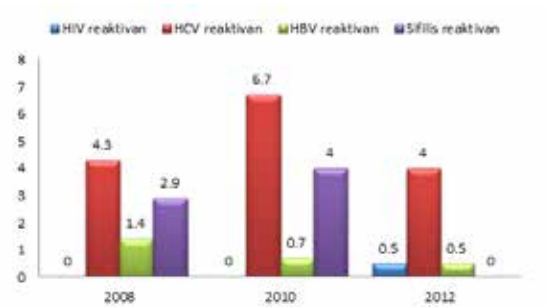
Similar results on knowledge, attitude and praxis, then on STI prevalence are obtained in the researches conducted in other countries of the Balkans, which confirmed that the countries of South East Europe belong to the countries with a low prevalence of HIV/sexually transmitted infections, but still with the insufficient level of awareness about prevention, diagnosis and treatment of these diseases, with certain improvements comparing to the previous period.[6-9]

Respondents mostly know where they can get tested for HIV, and for testing places they state the Clinic for Infectious Diseases and NGO counselling centres, but a small number of them mentions the Public Health Institutions.

Slightly more than two thirds of respondents (40,2%) have already got tested for HIV, and every tenth respondent (10,1%) tested for HIV in the past 12 months knows the test results, that is slightly less comparing to the previous researches.[13,14]

Of the total number of 199 samples taken, by serological analysis of blood samples, the one case of HIV, the eight cases of HCV infection and the one case of HBV infection were detected. Comparing to the previous two researches, there is a decrease rate of hepatitis C and hepatitis B positivity and syphilis infections are not registered. Comparing to the previous researches, the one case of HIV positive is registered (Figure 4).

Figure 4. The rate of positive serological analysis of HIV/STI (in 2008, 2010 and 2012)



The results of numerous researches confirm that key factors of risk behaviours for HIV transmission are unprotected sexual intercourse, improper condom usage, multiple sex partners, frequent change of partners, frequent and untreated sexually transmitted infections with the important role of social and biological cofactors that increase risk exposure probability of HIV.[10-12] Namely, social climate in Bosnia and Herzegovina, as in many other countries, is negative toward vulnerable population, limiting their rights,

Volume : 5 | Issue : 4 | April 2015 | ISSN - 2249-555X

including limited access to appropriate services and support; such psychosocial health represents the additional risk factor of HIV.

Conclusion

The study of prevalence conducted in 2012 shows a relative progress in HIV prevention comparing to 2008 and 2010 among SW: the increase of condom usage during last vaginal intercourse, but not during the oral and anal intercourses. The increasing trend of sexually transmitted infections is evident, but self-assessment of HIV risk is low. Almost two thirds of respondents never get tested for HIV, and in all three researches there is a low rate of respondents tested in the past 12 months for HIV who know the testing results. The results of serological analysis show maintenance of low prevalence of HIV/sexually transmitted infections.

The change in behaviour is obvious but still insufficient, because risks are still present (multiple partners, sexual intercourses under drug and alcohol influences, unprotected sexual intercourses with clients and steady partners etc.)

In developing prevention programmes, it must be borne in mind that SW population is highly stigmatized and hard to reach so it is necessary to implement targeted educational and informational activities and to organize campaigns for proper condom usage through acceptable communication channels with continuous awareness raising of the risk of HIV and the other sexually transmitted infections among SW population.

REFERENCE

1. Joint United Nations Programme on HIV/AIDS (UNAIDS). The Gap report. July 2014. | 2. Joint United Nations Programme on HIV/AIDS (UNAIDS) Global report: UNAIDS report on the global AIDS epidemic 2013. | 3. Prevention and treatment of HIV and other sexually transmited infections for sex workers in low- and middle-income countries: recommendations for a public health approach. WHO, 2012. | 4. Consolidated guidelines on HIV prevention, diagnosis, treatment and care for key populations. WHO 2014. | 5. UNAIDS/WHO Guidelines on surveillance among populations most at risk for HIV, WHO Library Cataloguing-in-Publication Data, 2011. | 6. Štulhofer A, Landripet I, Božić J, Božičević I (2015): HIV risks and HIV prevention among female sex workers in two largest urban settings in Croatia, 2008–2014. AIDS Care: Psychological and Sociomedical Aspects of AIDS/HIV 2015, Jan 8:1-5; doi: 10.1080/09540121.2014.996519. | 7. Hope VD, Eramova I, Capurro D, Donoghoe MC. Prevalence and estimation of hepatitis B and C infections in the WHO European Region: a review of data focusing on the countries outside the European Union and the European Free Trade Association. Epidemiology and Infection 2014;142(2):270-286. doi:10.1017/S0950268813000940. | 8. Ilić D, Sipetić S, Bjegović V. Risk of HIV infection among indoor and street sex workers and their use of health services in Belgrade, Serbia. Srp arh Celokup Lek. 2010 Mar-Apr; 138(3-4):219-24. | 9. Sipetić S, et al. HIV/AIDS risk behaviours among Roma and non-Roma sex workers in Belgrade (Serbia). Collegium Antropologicum. 2012 Dec; 36(4):1197-203 | 10. Shannon K, et al. Global epidemiology of HIV among female sex workers: infl uence of structural determinants. Lancet 2015; 385:55-71; doi: 10.1016/S0140-6736(14)60931-4. | 11. Steen R, Jana S, Reza-Paul S, Richter M. Trafficking, sex work, and HIV: efforts to resolve conflicts. Lancet 2015; 385 (9963): 94–96. doi: 10.1016/S0140-6736(14)60966-1 | 12. Prevalence of HIV and Other Sexually Transmitted Diseases among Colombian and Dominican Female Sex Workers Living in Catania, Eastern Sicily. Journal of Immigrant and Minority Health 2006, Vol 8 (4): 319-323. | 13. Ravlija J, Jandrić Lj, Kurtović A. Istraživanje rizičnog ponašanja u odnosu na HIV prevalencu među grupama pod povećanim rizikom. Sarajevo, 2008. | 14. Ravlija J, Jandrić Lj, Zeljko M, Kurtović A. Istraživanje rizičnog ponašanja u odnosu na HIV prevalencu među grupama pod povećanim rizikom. Sarajevo, 2011.