

RAZLIKE U DEMOGRAFSKIM KARAKTERISTIKAMA, RIZIČNOM PONAŠANJU I HIV STATUSU MUŠKARACA I ŽENA KOJI SU SE DOBROVOLJNO POVERLJIVO SAVETOVALI I TESTIRALI U SAVETOVALIŠTU ZA HIV/AIDS GRADSKOG ZAVODA ZA JAVNO ZDRAVLJE BEOGRAD

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SAŽETAK

Uvod/Cilj: Dobrovoljno poverljivo savetovanje i testiranje (DPST) na HIV/AIDS podrazumeva da klijenti savetovališta dobijaju informacije o HIV/AIDS-u, načinima transmisije, kako da u svom ponašanju prepoznaju, smanje ili izbegnu rizike za HIV infekciju, o sigurnom seksualnom odnosu, mestu gde se mogu testirati, kako dalje da postupaju u zavisnosti od rezultata testa, da bi zaštitili sebe i druge osobe. Cilj ovog istraživanja je bio da se ispita da li postoje razlike u demografskim karakteristikama, rizičnom ponašanju i HIV statusu između muškaraca i žena koji su se dobrovoljno poverljivo savetovali i testirali u Savetovalištu za HIV/AIDS Gradskog zavoda za javno zdravlje (GZJZ) Beograd.

Metode: Istraživanje je sprovedeno po tipu studije preseka u koju je uključeno 3.480 osoba (43,2% žena i 56,8% muškaraca) koje su se, u periodu od 2017. do 2019. godine, DPST na HIV/AIDS u Savetovalištu za HIV/AIDS GZJZ Beograd. Za statističku analizu podataka korišćeni su χ^2 ili Fišerov test.

Rezultati: Najveći deo žena (42,1%) i muškaraca (42,5%) koji su se DPST činile su osobe uzrasta 21-30 godina. Muškarci su značajno češće koristili usluge DPST nego žene. HIV pozitivan status je bio značajno češće otkriven kod muškaraca (2,5%) nego žena (0,3%). Žene su se značajno češće javljale na DPST usled moguće izloženosti HIV infekciji putem heteroseksualnog kontakta (84,9%), akcidentalno (11,1%) i silovanjem (1,0%), a muškarci usled heteroseksualnog kontakta (59,3%), homoseksualnog i biseksualnog kontakta (33,6%) i intravenoznog korišćenja droge (1,1%). Muškarci su značajno češće koristili kondome uvek ili često (40,1%) i imali dva ili više partnera (53,2%) tokom poslednjih 12 meseci nego žene (24,2% i 20,6%).

Zaključak: DPST je neophodno u borbi protiv HIV infekcije, posebno sa aspekta ranog otkrivanja osoba sa ovom infekcijom i edukacije HIV negativnih osoba o rizičnom seksualnom ponašanju i mogućim merama prevencije.

Ključne reči: dobrovoljno poverljivo savetovanje i testiranje, HIV/AIDS, faktori rizika

Uvod

HIV (engl. *Human Immunodeficiency Virus*) dovodi do nastanka AIDS-a (engl. *Acquired Immune Deficiency Syndrome*). AIDS predstavlja globalni problem, a cilj je da se zaustavi porast broja novoinficiranih HIV-om, kao i da se omogući svakoj osobi sa HIV-om da zna svoj status i da ima pristup odgovarajućoj antiretrovirusnoj (ARV) terapiji (1).

Prema podacima programa Ujedinjenih nacija za HIV/AIDS (engl. *United Nations Programme on HIV/AIDS - UNAIDS*), u svetu, 2019. godine, živelo je 38,0 miliona ljudi sa HIV-om, od kojih je 36,2 miliona odraslih i 1,8 miliona dece uzrasta od 0 do 14

godina (1,2). Iste ove godine broj novoinficiranih HIV-om je iznosio 1,7 miliona (odnosno 1,5 miliona odraslih i 150.000 dece mlađe od 15 godina), a broj umrlih oko 690.000 (3). Procenjeno je da je broj novoinficiranih za 23% manji nego što je bio 2010. godine. Ono što najviše zabrinjava je činjenica da 7,1 milion ljudi nije znalo da živi sa HIV-om, kao i da je samo 25,4 miliona ljudi bilo na ARV terapiji, odnosno da 12,6 miliona ljudi još uvek čeka terapiju. Jasno je da pravovremena terapija doprinosi da se globalna pandemija AIDS-a okonča, kao i da se unapredi kvalitet života osoba sa HIV-om

DIFFERENCES IN DEMOGRAPHIC CHARACTERISTICS, RISKY BEHAVIOR AND HIV STATUS OF MEN AND WOMEN WHO WERE VOLUNTARILY AND CONFIDENTIALLY COUNSELED AND TESTED AT THE COUNSELING CENTER FOR HIV/AIDS OF THE INSTITUTE OF PUBLIC HEALTH IN BELGRADE

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SUMMARY

Introduction/Aim: Voluntary and confidential counseling and testing (VCCT) means getting information about HIV, ways of transmission, recognizing, reducing or avoiding risks for HIV infection, about safe sexual relations, the place where people can be tested, and what they should do depending on the test results in order to protect themselves and other people. The aim of this study was to examine differences in demographic characteristics, risky behavior and HIV status between men and women who were voluntarily and confidentially counseled and tested at the Counseling Center for HIV/AIDS of the Institute of Public Health in Belgrade.

Methods: This research was conducted as a cross-sectional study and it included 3,480 persons (43.2% of women and 56.8% of men), who were counseled and tested at the Counseling Center for HIV/AIDS of the Institute of Public Health in Belgrade from 2017 to 2019. χ^2 or Fisher's test was used for the statistical analysis of data.

Results: The majority of women (42.1%) and men (42.5%) who were counseled and tested were in the age group 21-30 years. Men used DPST services significantly more often than women. HIV positive status was significantly more frequent in men (2.5%) than in women (0.3%). Women came significantly more often to voluntary counseling and testing due to the possible exposure to HIV infection by heterosexual contact (84.9%), accident (11.1%) and raping (1.0%), while men were counseled and tested due to heterosexual contact (59.3%), homosexual and bisexual contact (33.6%) and intravenous drug abuse (1.1%). Men used condoms always or often (40.1%) and had two or more partners (53.2%) more frequently during the last 12 months in comparison to women (24.2% and 20.6%).

Conclusion: Voluntary and confidential counseling and testing is necessary in the fight against HIV infection, especially from the perspective of early discovering of people with this infection and education of HIV negative persons about risky sexual behavior and possible prevention measures.

Key words: voluntary, confidential counseling and testing, HIV/AIDS, risk factors

Introduction

Human Immunodeficiency Virus (HIV) leads to the appearance of AIDS (Acquired Immune Deficiency Syndrome). AIDS represents a global problem, while the aim is to stop the increase in the number of newly infected with HIV, as well as to enable each person with HIV to know their status and to have access to antiretroviral therapy (ART) (1).

According to the data of the United Nations for AIDS (UNAIDS), in 2019 there were 38.0 million people living with HIV in the world, while 36.2

million were adults and 1.8 million were children aged 0 to 14 years (1,2). In the same year, the number of newly infected with HIV amounted to 1.7 million (that is 1.5 million of adults and 150.000 of children younger than 15), while the number of deaths was around 690.000 (3). It was estimated that the number of newly infected was for 23% lower than in 2010. The most worrying fact is that 7.1 million people did not know that they lived with HIV, and that only 25.4 million people received the antiretroviral therapy, that is,

i onemogućiti da seksualnim putem prenesu HIV svojim HIV-negativnim partnerima (3).

Iako smo, kao društvo, napredovali u saznanjima o virusu, kao i kako se od njega zaštititi, i dalje postoji veliki broj ljudi koji diskriminišu osobe koje su HIV pozitivne. Čak u 25 zemalja sveta više od 50% odraslih osoba ima diskriminišuće stavove o osobama koje su HIV pozitivne (3).

U Republici Srbiji, prema podacima Instituta za javno zdravlje Srbije „dr Milan Jovanović Batut“, od 1985. do novembra 2019. godine, registrovano je 4.027 osoba inficiranih HIV-om (4). Od ukupnog broja inficiranih HIV-om, 2.022 osobe su obolele od AIDS-a, a od tog broja 1.150 osoba je umrlo od AIDS-a. Prema statističkim podacima još 121 osoba inficirana HIV-om je umrla od bolesti ili stanja koja nisu povezana sa HIV infekcijom. Tokom svih godina od početka pojave HIV infekcije u Srbiji, dominantan put prenosa je seksualni (89% svih slučajeva registrovanih tokom 2019. godine), a potom prednjači nezaštićeni analni seksualni odnos među muškarcima, kako među novootkrivenim osobama inficiranim HIV-om (77%), tako i među obolelima (56%) i umrlima od AIDS-a (44%). Od januara do novembra 2019. godine, registrovano je 175 osoba novoinficiranih HIV-om (156 muškaraca i 19 žena). Najveći broj novoinficiranih HIV-om je u Beogradu, čak 75. Što se tiče načina transmisije, 156 osoba je HIV dobilo seksualnim putem tokom nezaštićenog odnosa (97,5% svih slučajeva sa poznatim načinom transmisije). U periodu od 2017. do 2019. godine dolazi do daljeg porasta novoinficiranih HIV-om, kao i novodijagnostikovanih od AIDS-a. Porast broja novoinficiranih HIV-om i novodijagnostikovanih obolelih od AIDS-a je posledica informisanja i promocije značaja besplatnog DPST na HIV/AIDS. Takođe, ove usluge (savetovanje, informisanje i testiranje) su dostupnije i prisutnije u različitim zdravstvenim ustanovama, ali i van zdravstvenih ustanova, posebno za osobe sa rizičnim ponašanjem iz ključnih populacija pod povećanim rizikom od HIV-a (5).

Testiranje na HIV može da bude inicirano od strane korisnika ili može da bude preporučeno od strane pružaoca usluga (npr. dijagnostičko HIV testiranje, indikovano testiranje usled pojave simptoma koji se mogu povezati sa HIV-om). Takođe, postoji rutinsko (npr. obavezno testiranje koje je regulisano zakonom u službama za transfuziju krvi za svaku uzetu jedinicu krvi) i mandatorno testiranje po tzv. „opt in“ ili „opt out“ modelu (npr. te-

stiranje trudnica, pacijenata na hemodijalizi, pacijenata koji se leče na klinikama za tuberkulozu ili za venerične bolesti) (6).

U okviru ovog rada akcenat je stavljen na DPST na HIV/AIDS, koje treba da se bazira na principima dobrovoljnosti, poverljivosti i anonimnosti. Ono ima ključnu ulogu u prevenciji HIV-a. Nacionalni Vodič dobre prakse za DPST i Protokol rada koji je detaljno definisao celu proceduru DPST-a, koji se oslanja na zajedničke protokole Ujedinjenih nacija za HIV/AIDS (engl. *Joint United Nations program on AIDS/HIV* - UNAIDS) i Svetske zdravstvene organizacije (SZO) umnogome su uticali na dobar kvalitet rada.

U Republici Srbiji razvoj DPST na HIV/AIDS vezuje se za Centar za DPST u Zavodu za zdravstvenu zaštitu studenata (ZZZS) Beograd. Savetnici iz DPST Centra u ZZZS su u radu sa Ujedinjenim nacijama i drugim organizacijama civilnog društva razvili model rada koji se od 2002. godine uspešno primenjuje u vladinom i nevladinom sektoru. DPST podrazumeva dobijanje informacija o HIV-u, načinima transmisije, kako osobe da prepoznaju, smanje ili izbegnu rizike za HIV infekciju u svom ponašanju, o sigurnom seksualnom odnosu, mestu gde se mogu testirati i u zavisnosti od rezultata HIV testa, kako dalje da postupaju, da bi zaštili sebe i druge osobe. DPST pomaže sa svojim širim pristupom u smanjenju diskriminacije osoba koje žive sa HIV-om sa ciljem njene eliminacije (7).

Cilj ove studije preseka je bio da se ispita da li postoje razlike u demografskim karakteristikama, rizičnom ponašanju i HIV statusu između muškaraca i žena koji su se DPST u Savetovalištu za HIV/AIDS Gradskog zavoda za javno zdravlje (GZJZ) Beograd u periodu od 2017. do 2019. godine.

Metode

Istraživanje je sprovedeno po tipu studije preseka u koju je uključeno 3.480 osoba (43,2% žena i 56,8% muškaraca) koje su se, u periodu od 2017. do 2019. godine, DPST na HIV/AIDS u Savetovalištu za HIV/AIDS GZJZ Beograd. Savetnik savetovaništa je od svake osobe, od koje je dobio usmeni pristanak za savetovanje pre testiranja, prikupio podatke o polu, starosnoj kategoriji, bračnom statusu, radnom odnosu, broju testiranja, ponašanju vezanom za HIV/AIDS, prosečnom broju partnera u toku jedne godine i učestalosti korišćenja kondoma. Podaci su potom uneti u

12.6 million people are still waiting for the therapy. It is clear that timely therapy contributes to the end of the global pandemic of AIDS, as well as to the improvement of the quality of life of people with HIV and the impossibility of transmitting HIV to their HIV-negative partners through sexual intercourse (3).

Although we, as a society, made progress in knowledge about the virus and how to be protected from it, there are still a lot of people who discriminate persons who are HIV positive. Even in 25 countries around the world more than 50% of adults have discriminating attitudes towards HIV positive persons (3).

In the Republic of Serbia, according to the data of the Institute of Public Health "Dr Milan Jovanovic Batut", there were 4027 registered persons infected with HIV from 1985 to November 2019 (4). Of all the persons infected with HIV, 2022 persons had AIDS, while 1150 died of AIDS. According to the statistical data, there were 121 persons infected with HIV who died due to diseases or conditions that were not connected with HIV. During all these years, from the appearance of HIV infection in Serbia, a dominant way of transmission was sexual (89% of all cases registered in 2019), and then the unprotected anal sexual intercourse among men in newly discovered persons infected with HIV (77%), as well as in persons with the disease (56%) and in those who died of AIDS (44%). From January to November 2019, 175 newly infected persons were registered (156 men and 19 women). The greatest number of newly infected with HIV was in Belgrade, even 75 persons. As far as the way of transmission is concerned, 156 persons contracted HIV through an unprotected sexual intercourse (97.5% of all cases of known transmission). From 2017 to 2019, there came to the increase in the newly infected with HIV, as well as in newly diagnosed with AIDS. The increase in the number of newly infected with HIV and newly diagnosed with AIDS is a consequence of promotion and information about the significance of voluntary, confidential and free counseling and testing for HIV. Also, these services (counseling, informing and testing) are more available and more present in different health care institutions, as well as outside health care institutions, especially for those persons with risky behavior from key populations at the risk of getting HIV (5).

HIV testing may be initiated by the user or it may be recommended by the service provider (e.g. diagnostic HIV testing, ordered testing due to the appearance of symptoms which can be connected with HIV). Also, there is a routine testing (for example, mandatory testing which is regulated by law in services for blood transfusion for all collected blood units) and mandatory testing, according to the so called "opt in" and "opt out" models (for example, testing of pregnant women, patients who are on hemodialysis, patients who are treated at clinics for tuberculosis or venereal diseases) (6).

Within the scope of this work, the accent was put on voluntary, confidential counseling and testing for HIV, which should be based on the principles of voluntariness, confidentiality and anonymity. It has a key role in HIV prevention. The National guide of good practice for VCCT and the Protocol which defined the whole procedure of VCCT in detail and which is based on the protocols of UNAIDS and the World Health Organization have influenced good quality of work to a large extent.

In the Republic of Serbia, the development of voluntary and confidential counseling and testing for HIV/AIDS is associated with the Center for voluntary counseling and testing at the Institute for Student Health Care in Belgrade. Counselors from this Center at the Institute for Student Health Care developed a model with the United Nations and other organizations of civil society and it has been successfully applied in the governmental and non-governmental sector since 2002. VCCT means that people can get information about HIV, ways of transmission, recognize, reduce or avoid risks for HIV infection, about safe sexual behaviors, place where they can be tested and depending on the test results, how they should act in the future in order to protect themselves and other people. With a wider approach, VCCT helps to reduce discrimination of people living with HIV aimed at its elimination (7).

The aim of this cross-sectional study was to examine whether there were differences in demographic characteristics, risky behavior and HIV status between men and women who were voluntarily counseled and tested at the Counseling center of the Institute of Public Health in Belgrade from 2017 to 2019.

elektronski upitnik i analizirani u cilju ispitivanja da li postoje razlike u demografskim karakteristikama, rizičnom ponašanju i HIV statusu između muškaraca i žena.

Za statističku analizu podataka korišćeni su χ^2 ili Fišerov test. Nivo statističke značajnosti je bio $p < 0,05$. Obrada podataka vršena je unutar statističkog paketa SPSS verzija 17.

Rezultati

U periodu od 2017. do 2019. godine, na DPST u GZJZ Beograd javilo se 1.502 žene i 1.978 muškaraca (Tabela 1). Između muškaraca i žena nije bilo statistički značajnih razlika u odnosu na uzrast. Najveći deo žena (42,1%) i muškaraca (42,5%) savetovališta činile su osobe uzrasta 21-30 godina. Muškarci koji su koristili usluge DPST su značajno češće bili neoženjeni (79,7%), a žene udate (33,6%), razvedene (7,0%) ili udovice (1,3%). Takođe, muškarci su značajno češće bili nezaposleni (21,8%), učenici (1,8%), studenti (10,6%) i penzioneri (3,9%), a žene zaposlene (67,1%).

Tokom poslednje tri godine muškarci su značaj-

no češće koristili DPST dva i više puta (55,1%) nego žene (28,3%) (Tabela 2). Takođe, među testiranim muškarcima je bilo značajno više HIV pozitivnih (2,5%) nego među ženama (0,3%).

Žene su se značajno češće javljale na DPST usled moguće izloženosti HIV infekciji heteroseksualnim kontaktom (84,9%), akcidentalno (11,1%) i silovanjem (1,0%), a muškarci usled heteroseksualnog odnosa (59,3%), homoseksualnog i biseksualnog kontakta (33,6%) i intravenoznog korišćenja droge (1,1%) (Tabela 3). Žene su značajno češće bile bez partnera ili sa jednim partnerom ili neizjašnjene u odnosu na muškarce. Muškarci su značajno češće koristili kondome uvek ili često (40,1%) i imali dva ili više partnera (53,2%) tokom poslednjih 12 meseci nego žene (24,2% i 20,6%).

Posle DPST-a 5 žena i 49 muškaraca je bilo HIV pozitivno (Tabela 4). HIV pozitivne žene su bile starije od 31 godine, dve su bile zaposlene, a tri nezaposlene. Na osnovu bračnog statusa tri žene su bile udate, jedna razvedena i jedna neudata. Najveći procenat HIV pozitivnih muškaraca je bio uzrasta od 21 do 40 godina (79,6%), neoženjenih

Tabela 1. Distribucija muškaraca i žena korisnika DPST u GZJZ Beograd u odnosu na njihove demografske karakteristike, period 2017-2019. godine

Karakteristike	Pol				p vrednost*
	Ženski		Muški		
	Broj N=1502	%	Broj N=1978	%	
Uzrast (godine)					
do 20	74	4,9	92	4,7	
21 – 30	632	42,1	841	42,5	
31 – 40	534	35,6	636	32,2	
41 – 50	169	11,3	244	12,3	
51 +	93	6,2	165	8,3	0,055
Bračni status					
Udata/oženjen	483	33,6	237	12,7	
Neudata/neoženjen	834	58,1	1481	79,7	
Udovica/udovac	18	1,3	16	0,9	
Razvedena/razveden	101	7,0	125	6,7	0,001
Radni status					
Zaposleni	961	67,1	1157	61,9	
Nezaposleni	303	21,2	407	21,8	
Učenici	17	1,2	34	1,8	
Studenti	124	8,7	198	10,6	
Penzioneri	27	1,9	73	3,9	0,001

*prema χ^2 testu; DPST - dobrovoljno poverljivo savetovanje i testiranje; GZJZ - Gradski zavod za javno zdravlje Beograd

Methods

A cross-sectional study was used for this research. The study included 3480 persons (43.2% of women and 56.7% of men) who were voluntarily counseled and tested for HIV/AIDS at the Counseling Center for HIV/AIDS at the Public Health Institute in Belgrade from 2017 to 2019. Before testing, each person gave oral consent for counseling to the counselor, and the counselor collected data about sex, age, marital status, employment status, the number of tests, behavior related to HIV/AIDS, the average number of partners during one year and the frequency of using condoms. Data were later entered into the electronic questionnaire and analyzed with the aim of investigating whether there were differences in demographic characteristics, risky behavior and HIV status between men and women.

χ^2 or Fisher's test was used for the statistical analysis of data. The level of statistical significance was $p < 0.05$. The analysis of data was done with the help of statistical package SPSS version 17.

Results

During the period from 2017 to 2019, 1,502 women and 1,978 men came to the Institute of Public Health in Belgrade for voluntary and confidential counseling and testing (Table 1). There was no statistically significant difference between men and women regarding age. The greatest part of women (42.1%) and men (42.5%) at this counseling center were persons aged 21 to 30. Men who used services of voluntary counseling and testing were significantly more often unmarried (79.7%), while women were married (33.6%), divorced (7.0%) or widows (1.3%). Also, men were significantly more often unemployed (21.8%), pupils (1.8%), students (10.6%) and retired (3.9%), while women were employed (67.1%).

During the last three years, men used VCCT significantly more often, two times more (55.1%) than women (28.3%) (Table 2). Also, there were significantly more HIV positive men (2.5%) than women (0.3%) among the tested persons.

Table 1. Distribution of male and female users of VCCT at the IPHB according to their demographic characteristics in the period 2017-2019

Characteristics	Sex				p value*
	Female		Male		
	Number N=1502	%	Number N=1978	%	
Age (years)					
to 20	74	4.9	92	4.7	
21 – 30	632	42.1	841	42.5	
31 – 40	534	35.6	636	32.2	
41 – 50	169	11.3	244	12.3	
51 +	93	6.2	165	8.3	0.055
Marital status					
Married	483	33.6	237	12.7	
Unmarried	834	58.1	1481	79.7	
Widow/widower	18	1.3	16	0.9	
Divorced	101	7.0	125	6.7	0.001
Employment status					
Employed	961	67.1	1157	61.9	
Unemployed	303	21.2	407	21.8	
Pupils	17	1.2	34	1.8	
Students	124	8.7	198	10.6	
Retired	27	1.9	73	3.9	0.001

*according to χ^2 test; VCCT – voluntary confidential counseling and testing; IPHB - Institute of Public Health in Belgrade.

Tabela 2. Distribucija muškaraca i žena korisnika DPST u GZJZ Beograd u odnosu na njihove navike, period 2017-2019. godine

Karakteristike	Pol				p vrednost*
	Ženski		Muški		
	Broj N=1502	%	Broj N=1978	%	
Broj poseta DPST					
1	1068	71,5	883	44,8	
2	328	22,0	593	30,1	
3+	98	6,3	496	25,0	0,001
HIV status					
Pozitivan	5	0,3	49	2,5	
Negativan	1497	99,7	1929	97,5	
Ukupno	1502	100,0	1978	100,0	0,001

*prema χ^2 testu; DPST - dobrovoljno poverljivo savetovanje i testiranje; GZJZ - Gradski zavod za javno zdravlje Beograd

Tabela 3. Distribucija muškaraca i žena korisnika DPST u GZJZ Beograd u odnosu na njihovo ponašanje, period 2017-2019. godine

Karakteristike	Pol				p vrednost*
	Ženski		Muški		
	Broj N=1502	%	Broj N=1978	%	
Rizici					
Akcident	167	11,1	84	4,3	
Homoseksualni i biseksualni odnosi	14	0,9	664	33,6	
Heteroseksualni odnosi	1275	84,9	1173	59,3	
Intravenski korisnici droga	7	0,5	21	1,1	
Trasfuzija krvi	7	0,5	1	0,1	
Silovanje	15	1,0	3	0,2	
Više rizika	17	1,1	32	1,6	0,001
Broj partnera u poslednjih 12 meseci					
Bez partnera	41	2,7	49	2,5	
Jedan	598	39,8	525	26,5	
Dva	173	11,5	312	15,8	
Tri	60	4,0	166	8,4	
Četiri i više	77	5,1	574	29,0	
Neizjašnjeno	553	36,8	352	17,8	0,001
Korišćenje kondoma					
Uvek/često	364	24,2	794	40,1	
Retko/nikad	1138	75,8	1184	59,8	0,001

*prema χ^2 testu; DPST - dobrovoljno poverljivo savetovanje i testiranje; GZJZ - Gradski zavod za javno zdravlje Beograd

Table 2. Distribution of male and female users of VCCT at the IPHB according to their habits during the period 2017-2019

Characteristics	Sex				p value*
	Female		Male		
	Number N=1502	%	Number N=1978	%	
Number of visits to VCCT					
1	1068	71.5	883	44.8	
2	328	22.0	593	30.1	
3+	98	6.3	496	25.0	0.001
HIV status					
Positive	5	0.3	49	2.5	
Negative	1497	99.7	1929	97.5	
Total	1502	100.0	1978	100.0	0.001

*according to χ^2 test or Fisher's test; VCCT – voluntary confidential counseling and testing; IPHB - Institute of Public Health in Belgrade.

Table 3. Distribution of male and female users of VCCT at the IPHB according to their behavior during the period 2017-2019

Characteristics	Sex				p value*
	Female		Male		
	Number N=1502	%	Number N=1978	%	
Risks					
Accident	167	11,1	84	4,3	
Homosexual and bisexual relations	14	0,9	664	33,6	
Heterosexual relations	1275	84,9	1173	59,3	
Intravenous drug abusers	7	0,5	21	1,1	
Blood transfusion	7	0,5	1	0,1	
Raping	15	1,0	3	0,2	
Multiple risks	17	1,1	32	1,6	0,001
Number of partners during the last 12 months					
Without partner	41	2,7	49	2,5	
One	598	39,8	525	26,5	
Two	173	11,5	312	15,8	
Three	60	4,0	166	8,4	
Four and more	77	5,1	574	29,0	
Not answered	553	36,8	352	17,8	0,001
Use of condoms					
Always/often	364	24,2	794	40,1	
Rarely/never	1138	75,8	1184	59,8	0,001

*according to χ^2 test or Fisher's test; VCCT – voluntary confidential counseling and testing; IPHB -Institute of Public Health in Belgrade.

Tabela 4. Distribucija HIV pozitivnih osoba koje su se javile na DPST u GZJZ u odnosu na njihove demografske karakteristike, period 2017-2019. godine

Karakteristike	Pol			
	Ženski		Muški	
	Broj N=5	%	Broj N=49	%
Uzrast (godine)				
do 20	0	0,0	1	2,0
21 – 30	0	0,0	17	34,7
31 – 40	1	20,0	22	44,9
41 – 50	1	20,0	7	14,3
51 +	3	60,0	2	4,1
Bračni status				
Udata/oženjen	3	60,0	2	4,1
Neudata/neoženjen	1	20,0	45	91,8
Udovica/udovac	1	20,0	2	4,1
Razvedena/razveden	101	7,0	125	6,7
Radni status				
Zaposleni	2	40,0	35	71,4
Nezaposleni	3	60,0	8	16,3
Učenici	0	0,0	1	2,0
Studenti	0	0,0	4	8,2
Penzioneri	0	0,0	1	2,0

DPST - dobrovoljno poverljivo savetovanje i testiranje; GZJZ - Gradski zavod za javno zdravlje Beograd

(91,8%) i zaposlenih (71,4%).

Sve HIV pozitivne žene su se javile na testiranje zbog rizičnog heteroseksualnog odnosa, a muškarci najčešće (77,6%) zbog rizičnih homoseksualnog i biseksualnih odnosa (Tabela 5). Tri od pet HIV pozitivnih žena su tokom prethodnih 12 meseci imale jednog partnera, a 51% HIV pozitivnih muškaraca tri i više partnera. Veći broj HIV pozitivnih žena (80,0%) nego muškaraca (67,3%) nikada nisu ili su retko koristile kondom.

Diskusija

U Savetovalištu za HIV/AIDS, GZJZ u periodu 2017-2019. godine je testirano 3.480 ispitanika (43,2% žena i 56,8% muškaraca), a u Republici Srbiji je u toku ovog perioda ukupno DPST na HIV/AIDS 24.012 osoba (5,6,10). U odnosu na pol u 2019. godini prema podacima Instituta za javno zdravlje „dr Milan Jovanović Batut“, dva puta je više DPST muškaraca nego žena (4). Međutim, u našoj studiji, 1,3 puta više muškaraca nego žena je koristilo usluge DPST. Između muškaraca i žena korisnika DPST nije bilo značajne razlike u odnosu

na uzrast.

Među testiranim u našoj studiji, značajno je više bilo žena (71,5%) koje su se testirale po prvi put, nego muškaraca (44,8%). Najveći procenat žena (75,8%) i muškaraca (59,8%) je retko/nikad koristio kondom. Muškarci su značajno češće imali veći broj seksualnih partnera, kao i homoseksualne i biseksualne kontakte i intravensko korišćenje droge. U mnogim studijama ukazuje se na rizičnije seksualno ponašanje muškaraca (8), pogotovo muškaraca koji imaju seksualne odnose sa muškarcima (9). Ovu populaciju karakteriše visoko rizično seksualno ponašanje, koje podrazumeva promiskuitet, veliki broj javnih mesta gde mogu upoznavati partnere i upražnjavati seksualne odnose (saune, javni toaleti, klubovi), česta upotreba psihoaktivnih supstanci, kao i eksperimentisanja sa rizikom i sopstvenom seksualnošću. Iako, HIV infekciju muškarci koji imaju seksualne odnose sa muškarcima doživljavaju kao uobičajenu bolest, zaražavanje je i dalje povezano sa stidom i krivicom (9). Istraživanje sprovedeno u Indiji, ukazuje da je rizičnije seksualno ponašanje češće među

Table 4. Distribution of HIV positive persons who came to VCCT at the IPHB according to their demographic characteristics during the period 2017-2019

Characteristics	Sex			
	Female		Male	
	Number N=5	%	Number N=49	%
Age (years)				
0 – 20	0	0.0	1	2.0
21 – 30	0	0.0	17	34.7
31 – 40	1	20.0	22	44.9
41 – 50	1	20.0	7	14.3
51 +	3	60.0	2	4.1
Marital status				
Married	3	60.0	2	4.1
Unmarried	1	20.0	45	91.8
Widow/widower	1	20.0	2	4.1
Divorced	101	7.0	125	6.7
Employment				
Employed	2	40.0	35	71.4
Unemployed	3	60.0	8	16.3
Pupils	0	0.0	1	2.0
Students	0	0.0	4	8.2
Retired	0	0.0	1	2.0

VCCT – voluntary confidential counseling and testing; IPHB - Institute of Public Health in Belgrade

Women significantly more often came to voluntary counseling and testing due to the possible exposure to HIV infection by heterosexual contact (84.9%), accident (11.1%) and raping (1.0%), while men were counseled and tested due to heterosexual contact (59.3%), homosexual and bisexual contact (33.6%) and intravenous drug abuse (1.1%) (Table 3). Women significantly more often did not have a partner or they had one partner, or they did not answer the question in comparison to men ($p < 0.001$). Men used condoms significantly more often (40.1%) and they had two or more partners during the last 12 months in comparison to women (24.2% and 20.6%).

After voluntary, confidential counseling and testing, 5 women and 49 men were HIV positive (Table 4). HIV positive women were older than 31, two of them were employed, while three were unemployed. According to the marital status, three women were married, one was divorced and one was not married. The greatest percentage of HIV positive men was in the age group 21 to 40 years (79.6%), among unmarried (91.8%) and employed men (71.4%).

All HIV positive women came to testing because of risky heterosexual relations, while men were tested mostly because of risky homo and bisexual relations (77.6%) (Table 5). Three of five HIV positive women had one partner during the last 12 months, while 51% of HIV positive men had three or more partners. Larger number of HIV positive women (80.0%) never used condoms or they used it rarely in comparison to men (67.3%).

Discussion

During the period 2017-2019, 3,480 examinees (43.2% of women and 56.8% of men) were tested at the Counseling center for HIV/AIDS of the Institute of Public Health in Belgrade, while 24,012 persons were voluntarily counseled and tested in the Republic of Serbia during this period (5,6,7). In 2019, according to the data of the Institute of Public Health "Dr Milan Jovanovic Batut" regarding examinees' sex, VCCT was two times higher among men than among women. However, in our study, VCCT was 1.3 times higher among men than among women. There was no significant difference regarding age between

Tabela 5. Distribucija HIV pozitivnih osoba koje su se javile na DPST u GZJZ u odnosu na njihovo ponašanje, period 2017-2019. godine

Karakteristike	Pol			
	Ženski		Muški	
	Broj N=1502	%	Broj N=1978	%
Rizici				
Akcident	0	0,0	1	2,0
Homoseksualni i biseksualni odnosi	0	0,0	38	77,6
Heteroseksualni odnosi	5	100,0	10	20,4
Broj partnera u poslednjih 12 meseci				
Jedan	3	60,0	7	14,3
Dva	0	0,0	4	8,2
Tri+	0	0,0	25	51,0
Neizjašnjeno	2	40,0	13	26,5
Korišćenje kondoma				
Uvek/često	1	20,0	16	32,7
Retko/nikad	4	80,0	33	67,3

DPST - dobrovoljno poverljivo savetovanje i testiranje; GZJZ - Gradski zavod za javno zdravlje Beograd

mlađim, neoženjenim i urbanim muškarcima, koji uglavnom potiču iz ekonomski bogatijih domaćinstava (8). Nalazi studije, takođe, podvlače očigledni paradoks u vezi između znanja o HIV/AIDS-u i prepuštanju rizičnom seksualnom ponašanju i usvajanju sigurnih seksualnih praksi. Preporučuje se da svi programi prevencije HIV-a u Indiji promovišu koncept muškarca kao odgovornog seksualnog partnera (8). Ovaj koncept je dobro promovisati među mladim i neoženjenim muškarcima jačanjem prelaska sa nasilja na poštovanje i promocijom kondoma.

U našoj studiji, značajno veći procenat novootkrivenih HIV pozitivnih je bio među muškarcima (2,5%), nego među ženama (0,3%). Isti odnos polova u odnosu na HIV infekciju prisutan je širom sveta sa izuzetkom regiona sub-saharske Afrike, gde žene imaju veću prevalenciju infekcije HIV-om (10). Podaci Instituta za javno zdravlje Srbije „dr Milan Jovanović Batut“ ukazuju da je u 2019. godini bilo 8 puta više HIV pozitivnih muškaraca nego žena (156 muškaraca i 19 žena) (11), dok je u periodu praćenja naše studije taj odnos bio skoro 10 prema 1 (49 muškaraca i 5 žena). U periodu od januara do 20. novembra 2019. godine u Republici Srbiji, najveći broj novoobolelih bio je uzrasta

od 20. do 49. godina (138 osoba tj. 79%), gde je svaka četvrta osoba uzrasta od 20 do 29 godina (43 osobe tj. 25%) (2). Međutim, u našoj studiji najviši procenat HIV pozitivnih muškaraca (44,9%) je bio uzrasta od 31. do 40. godine života, a žena (60,0%) uzrasta 51 i više godina.

Rezultati našeg istraživanja, takođe, pokazuju da je tokom poslednjih 12 meseci najviši procenat HIV pozitivnih muškaraca (36,7%) imao četiri partnera, a HIV pozitivne žene jednog (60,0%). Ukoliko posmatramo transmisiju kategoriju tokom 2018. godine u SAD-u vidimo da je homoseksualni odnos dominantan put transmisije (69%) svih novoinficiranih, a zatim heteroseksualni odnos (24%) (2). Prema podacima Instituta za Javno zdravlje „dr Milan Jovanović Batut“, tokom svih godina od početka pojave HIV infekcije u Republici Srbiji, dominantan put prenosa je seksualni put prenosa (89% svih slučajeva registrovanih tokom 2019. godine), a homoseksualni odnos među muškarcima, kako među novootkrivenim osobama inficiranim HIV-om (77%), tako i među obolelima (56%) i umrlima od AIDS-a (44%) (5). Najčešći razlog testiranja na HIV/AIDS u našem istraživanju među HIV pozitivnim muškarcima je rizičan homoseksualni/biseksualni odnos (77,6%), a kod HIV pozitivnih

Table 5. Distribution of HIV positive persons who came to VCCT at the IPHB according to their behavior during the period 2017-2019

Karakteristike	Sex			
	Female		Male	
	Number N=5	%	Number N=49	%
Risks				
Accident	0	0.0	1	2.0
Homosexual and bisexual relations	0	0.0	38	77.6
Heterosexual relations	5	100.0	10	20.4
Number of partners during the last 12 months				
One	3	60.0	7	14.3
Two	0	0.0	4	8.2
Three+	0	0.0	25	51.0
Not answered	2	40.0	13	26.5
Use of condoms				
Always/often	1	20.0	16	32.7
Rarely/never	4	80.0	33	67.3

VCCT – voluntary confidential counseling and testing; IPHB - Institute of Public Health in Belgrade

men and women who were users of voluntary, confidential counseling and testing.

Among the tested persons in our study, there were significantly more women (71.5%) who were tested for the first time than men (44.8%). The greatest percentage of women (75.8%) and men (59.8%) used condoms rarely/never. Men had significantly more often larger number of sexual partners, as well as homosexual and bisexual contact and used drugs intravenously. In numerous studies, it is pointed to the risky sexual behavior of men (8), especially men who have sexual relations with men (9). This population is characterized by high-risk sexual behavior, which includes promiscuity, a large number of public places where they can meet partners and have sexual intercourse (saunas, public toilets, clubs), frequent use of psychoactive substances, as well as experimenting with risk and sexuality. Although HIV infection is perceived by men who have sex with men as a common disease, infection is still associated with shame and guilt (9). A study conducted in India indicates that risky sexual behavior is more common among younger, unmarried and urban men who are mainly from economically better-

off households (8). The findings of the study also underline an apparent paradox regarding the relationship between knowledge of HIV/AIDS and indulgence in high-risk sexual behavior and adopting safe sexual practices. It is recommended that all HIV prevention programs in India should promote the concept of a man as a responsible sexual partner (8). This concept should be promoted among young and unmarried men, by reinforcing the shift from violence to respect and promoting condoms as a sexual stimulus, not as a means of disease prevention.

In our study, percentages of newly discovered HIV positive persons were significantly higher among men (2.5%) than among women (0.3%). The same ratio of sexes regarding HIV infection is present around the world with the exception of Sub-Saharan Africa, where the prevalence of HIV infection is higher among women (10). Data of the Institute of Public Health “Dr Milan Jovanovic Batut” point to the fact that in 2019 there were 8 times more HIV positive men than women (156 men and 19 women) (11), whereas during the follow-up period from our study that ratio was almost 10 to 1 (49 men and 5 women). In Republic

žena rizični heteroseksualni odnos (100%).

Naša studija pokazuje da su muškarci značajno uvek ili češće koristili kondom i imali dva ili više partnera nego žene. Ispitivanje stavova i ponašanja u vezi sa upotrebom kondoma kod muškaraca i žena koji se leče od zloupotrebe supstanci pokazuje da je i za muškarce i za žene ređa upotreba kondoma povezana sa zloupotrebom psihoaktivnih supstanci (12). Prema podacima Istraživanja zdravlja stanovništva Srbije iz 2013. godine, koju su sprovedeli Ministarstvo zdravlja Republike Srbije i Institut za javno zdravlje Srbije, od ukupnog broja mladih uzrasta 15-24 godine, muškarci su češće konzumirali alkohol (svaki dan ili skoro svaki dan 0,7%, 5-6 dana u nedelji 0,7%, 3-4 dana u nedelji 4,5%, 1-2 dana u nedelji 15,7%, kao i 2-3 dana mesečno 16,8%) nego žene (0,3%; 0,2%; 1,7%; 7,8%; 12%), a čak 0,7% je koristilo nedozvoljene psihoaktivne supstance (kao što su kanabis, kokain i lepak) (13). *Brooks* i saradnici su otkrili da žene koje se leče od zloupotrebe supstanci češće prijavljuju više partnera i nezaštićene seksualne odnose sa redovnim partnerima u poređenju sa muškarcima (14). Nasuprot tome, *Absalon* i saradnici su uočili da muškarci prijavljuju češće rizična seksualna ponašanja nego žene (tj. seks pod dejstvom droge ili alkohola, slučajne partnere, višestruke seksualne partnere), a žene seksualne partnere sa većim rizikom (15). Ovi podaci podržavaju potrebu da se u okviru uvođenja preventivnih intervencija treba usredsrediti na rodno specifične barijere za upotrebu kondoma, kako u cilju prevencije HIV-a, tako i drugih polno prenosivih bolesti.

Ključni nedostatak ovog istraživanja odnosi se na analizu demografskih karakteristika i rizičnog ponašanja malog broja osoba koje su u posmatranom periodu bile identifikovane kao HIV pozitivne. Međutim, ovo istraživanje ima ogroman značaj u prepoznavanju važnosti Savetovaništa za HIV/AIDS u cilju ranog otkrivanja osoba sa HIV/AIDS-om, kao i za identifikovanja rizičnih oblika ponašanja radi primene adekvatnih mera prevencije u borbi protiv HIV/AIDS-a.

Zaključak

Na osnovu rezultata, može se zaključiti da je među testiranim osobama u Savetovaništu za HIV/AIDS, GZJZ, u periodu 2017-2019. godine, bilo najviše mladih osoba, uzrasta od 21. do 30. godine. Pozitivni HIV status najviše je zabeležen

kod osoba uzrasta od 31. do 40. godina. Stoga, edukacija mladih o bezbednim obrascima seksualnog ponašanja i isticanje značaja pravovremenog savetovanja i testiranja je neophodno. Potrebno je vršiti promovisanje Savetovaništa za DPST i u starijim uzrastima, jer je kontinuirana promocija DPST-a zadatak na kome treba intenzivno raditi kako bi odgovor na HIV epidemiju bio uspešniji. Takođe, potrebno je raditi na promovisanju preekspozicione i postekspozicione profilakse antiretrovirusnim lekovima, kao i na prevenciji transmisije HIV infekcije sa majke na dete.

Zahvalnica

Rad je podržan sredstvima iz projekta Ministarstva prosvete, nauke i tehnološkog razvoja br. 175042 (2011-2021).

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of Serbia, from January 2019 to 20th November 2019, the largest number of newly infected was in the age group 20 to 49 years (138 persons, that is, 79%), where every fourth person was in the age group 20 to 29 (43 persons, that is, 25%) (2). However, in our study, the highest percentage of HIV positive men (44.9%) was in the age group 31 to 40 years, while the highest percentage of HIV positive women (60.0%) was in the age group 51 years and older.

The results of our research also show that the highest percentage of HIV positive men (36.7%) had four partners, while HIV positive women had one partner (60.0%) during the last 12 months. If we observe the transmission category in the USA during 2018, we see that homosexual relation was a dominant way of transmission (69%) of all newly infected persons, and then heterosexual relation (24%) (2). According to the data of the Institute of Public Health "Dr Milan Jovanovic Batut", during all these years since the appearance of HIV infection in Serbia, a dominant way of transmission was sexual transmission (89% of all registered cases in 2019), while homosexual relations were dominant among men, in newly discovered persons infected with HIV (77%), as well as in those with the disease (56%) and in those who died of AIDS (44%) (5). The most common reason for HIV/AIDS testing in our study among HIV-positive men was risky homosexual/ bisexual intercourse (77.6%), and in HIV-positive women risky heterosexual intercourse (100%).

Our study shows that men significantly more often or always used condoms and had two or more partners in comparison to women. The investigation of attitudes and behaviors regarding the use of condoms in men and women who were treated due to drug abuse shows that the existence of barriers for the use of condoms is associated with the rarer use of condoms (12). According to the data of the Health Survey of the Population of Serbia from 2013, conducted by the Ministry of Health of the Republic of Serbia and the Institute of Public Health of Serbia, out of the total number of young people aged 15-24, men consumed alcohol more often (every day or almost every day 0.7 %, 5-6 days a week 0.7%, 3-4 days a week 4.5%, 1-2 days a week 15.7%, as well as 2-3 days a month 16.8%) than women (0.3%; 0.2%; 1.7%; 7.8%; 12%), and as many as 0.7% used illicit psychoactive substances (such as cannabis,

cocaine, and glue) (13). Brooks and coworkers found that women treated for substance abuse were more likely to report multiple partners and unprotected sex with regular partners compared to men (14). In contrast, Absalon and coworkers observed that men reported more frequent risky sexual behaviors than women (i.e., sex under the influence of drugs or alcohol, casual partners, multiple sexual partners), and women reported higher-risk sexual partners (15). This data supports the need to focus on gender-specific barriers to condom use as part of the introduction of preventive interventions, both for the prevention of HIV and other sexually transmitted diseases.

The key shortcoming of this research relates to the analysis of demographic characteristics and risk behavior of a small number of people who were identified as HIV positive in the observed period. However, this research is of great importance in recognizing the importance of the HIV / AIDS Counseling Center for the early detection of people living with HIV / AIDS, as well as in identifying risky behaviors in order to implement adequate prevention measures in the fight against HIV / AIDS.

Conclusion

According to the results, one may conclude that during the period 2017-2019, the majority of persons tested at the Counseling center for HIV/AIDS of the Institute of Public Health were young aged 21 to 30 years. The positive HIV status was noted mostly in persons aged 31 to 40 years. Therefore, educating young people about safe patterns of sexual behavior and emphasizing the significance of timely counseling and testing are necessary. The promotion of the Counseling center for HIV/AIDS is needed in older age, because the continuous promotion of voluntary, confidential counseling and testing represents a task, which should be intensively worked on in order to have a more successful response to the epidemic of HIV. It is also necessary to work on the promotion of pre-exposure and post-exposure prophylaxis with antiretroviral drugs, as well as on the prevention of mother-to-child transmission of HIV infection.

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Sukob interesa: Nije prijavljen.

Primljen: 27.06.2021.

Revizija: 28.06.2021.

Prihvaćen: 01.07.2021.

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Acknowledgement

The work was supported by funds from the project of the Ministry of Education, Science and Technological Development no. 175042 (2011-2021).

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Conflict of interest: None declared.

Received: 06/27/2021

Revised: 06/28/2021

Accepted: 07/01/2021

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