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Cedomir Sagric¹,
Olivera Radulovic¹,
Roberta Markovic²,
Marjana Bogdanovic³,
Mariola Stojanovic²,
Aleksandar Visnjic¹

¹Faculty of Medicine

²Public Health Institute Nis

³Students' Polyclinic Nis

HOW THE STUDENTS OF UNIVERSITY OF NIS OBTAIN INFORMATION AND ESTIMATE THEIR KNOWLEDGE ON HIV/AIDS

SUMMARY

The aim of this study was to determine the influence of some significant elements in the process of spreading information about HIV/AIDS on the subjective assessment of students' own knowledge about HIV/AIDS. This survey included 519 students of the University of Nis. The analysis of data included standard procedures of descriptive and analytical statistical methodology. χ^2 test, Pearson test, Mann-Whitney test, Kruskal-Wallis test, univariate and multivariate regression analysis were used in comparison of frequencies. The data were processed in the programs Microsoft Excel and SSPS 10.0. Among the students who rated their knowledge as excellent, 83.4% of them received information about HIV/AIDS for more than once during the last year. 55.6% of the students who assessed their knowledge as insufficient received the information only several times. In the process of evaluation of students' own knowledge about HIV/AIDS depending on the frequency of information there is a statistically significant difference in distribution of responses (Kruskal-Wallis Test $\chi^2 = 20.556$ $p < 0,001$). The gender of the students, people who were the most common source of the information and the ways of obtaining information did not have a significant influence on the subjective assessment of students' knowledge about HIV/AIDS. The greatest impact on the subjective assessment of students' knowledge about HIV/AIDS has two categories: belonging to the particular group of the faculty and frequency of obtaining information.

Key words: students, HIV/AIDS

INTRODUCTION

Students are a part of the young population, and as well as all the young are characterized by good health status with low rates of morbidity and mortality. At the same time, students as the risk population can be considered as a very vulnerable part of the population. Risky sexual behavior and its consequences in the form of STDs and HIV/AIDS-a is relevant and great burden to their health. 50% of all HIV transmission occur in the young population (1-3).

Students' risky sexual behavior is often a consequence of insufficient level of knowledge, lack of education and life skills on STDs and HIV/AIDS, insufficient utilization of the health services, and at the same time, the lack of motivation to consistently apply the existing knowledge in this area.

Prevention of HIV/AIDS is very complex and the main aspects of prevention include primarily identifying the groups at risk, such as the group of students. Namely, the only and the last research about students' health condition in Serbia from 2000 showed plenty of negative facts about students' sexual behavior: 32.6% of students had sexual

contact with familiar and unfamiliar persons while being drunk; simultaneous sexual relations with more than one person were reported in 17% of the students, of which less than half (46%) who regularly used condom (4, 5).

Vulnerability of students to HIV/AIDS and other STDs is associated with insufficient access to information about HIV/AIDS and STDs and preventive services, but also with numerous social and economic determinants (6).

HIV/AIDS and other STDs are the leading public health problems, especially in developing countries such as Serbia. The size of the problem is not only in the incidence which is constantly growing, but the complications which originate from it.

Having recognized the sensitivity of the youth to HIV/AIDS, the World Health Organization formulated several goals and tasks for the young age from 15 to 24 where students of the university belong to. Needs for better access to information in the field of prevention of HIV and STDs is defined through the following goals: by 2010, at least 95% of young men and women aged 15 to 24 will have had an access to the information, education, including peer education and youth-specific HIV education, and services to develop the life skills required to reduce their vulnerability to HIV infection; by 2010, at least 95% of young people will have had an access to the skills they need to reduce their vulnerability to HIV; by 2010, at least 95% of young people will have had access to the services they need to reduce their vulnerability to HIV (7-9).

Generally, the main method in HIV prevention among students and the young is to create properly modeled and permanent health education which will stimulate young people to preserve and improve their health. It is important to provide adequate information speaking of HIV / AIDS and other STDs, as in the case of these health problems, because of misinformation and prejudices as the sources of social complications (10, 11).

An important role in students' informing and creating their attitude towards HIV/AIDS is assigned to the family as the place of primary socialization, then the university where students create their social network, teaching staff, mass media, while the special importance is given to health professionals and other educated professionals who can offer students the information of high-quality and various skills related to the prevention of HIV/AIDS (12-14).

AIMS

The aim of this paper was to determine the influence of some significant elements in the process of informing students about HIV/AIDS (sex of

subjects, belonging to the group of particular faculty, the frequency of information, people who are the source of information and ways of obtaining information) on the subjective assessment of students of their own knowledge on HIV/AIDS.

MATERIAL AND METHODS

As the chief methods in the research, the cross-sectional study and statistical method of quantitative analysis of mass phenomena were applied, using all the phases of statistical methodology stages.

The basic source of data was the poll conducted at ten faculties of the University of Nis and the Department for Students' Health Care in Nis during the academic year 2006/2007. The study included 519 students of both sexes. For the purposes of the study, an original questionnaire was designed. In addition, a trial testing including 89 students was performed, after which the questionnaire was corrected.

The data processing was carried out in respect to the students' gender as well as the type of study, according to which the polled students were divided into two groups: the first group - medical students (included students of Medicine, Dentistry, Pharmacy and College of Nursing) and the second group - non-medical students (included students of the Faculties of Law and Economics, Faculty of Philosophy, Faculty of Arts, Architecture and Faculty of Mechanical Engineering).

Statistical analysis used the standard procedures of descriptive and analytical statistical methodology. χ^2 test, Pearson test, Mann-Whitney test, Kruskal-Wallis test, followed by the univariate and multivariate regression analysis were used for comparison of frequencies. The data were processed using statistical program Microsoft Excel and SSPS 10.0, and the relevant data were presented in tables and graphs. Values of $p < 0.05$ were considered significant.

RESULTS

Frequency of obtaining information about HIV/AIDS during the last year

To the question about how many times during the last year they received information about HIV/AIDS, the polled students gave the following answers: 79.9% of the polled students got the information about HIV/AIDS for more than five times during the last year; 11.8% only once; 8.3% did not get any information during the same period (Figure 1).

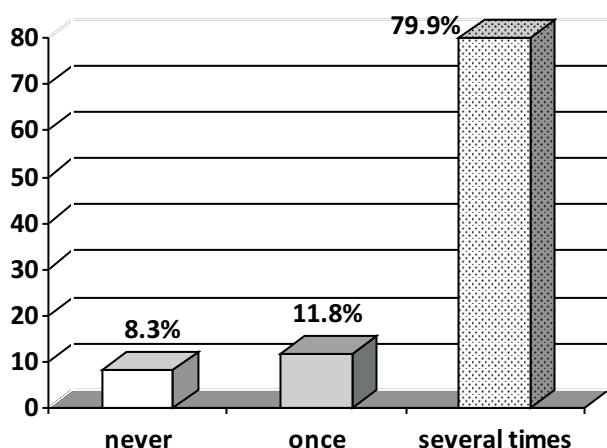


Figure 1. - Frequency of obtaining information about HIV/AIDS during the last year

There was no statistically significant difference between male and female students concerning the distribution of answers to the question about the frequency of obtaining information about HIV/AIDS (Mann-Whitney U Z = 0.822 p > 0.05).

In the group of the medical students, 6% of the polled did not obtain any information about HIV/AIDS during the last year, 10.5% received the information once, while 83.5% indicated that during the last year they received the information about HIV/AIDS more than once (Table 1).

Table 1 - Frequency of obtaining information about HIV/AIDS in relation to a group of faculty

Frequency of obtaining information		Group of students		Total	Test
		medical students	non- medical students		
never	N ^o	15	30	45	Pearson $\chi^2=5.231$ p>0.05 Mann-Whitney U Z=2.173 p<0.05
	%	6.0%	11.0%	8.7%	
once	N ^o	26	35	61	
	%	10.5%	12.9%	11.7%	
several times	N ^o	207	207	414	
	%	83.5%	76.1%	79.6%	
Total	N ^o	248	272	520	
	%	100.0%	100.0%	100.0%	

There was a statistically significant difference in distribution of answers to the question about the frequency of obtaining information about HIV/AIDS between medical and non-medical students' groups (Mann-Whitney U Z = 2.173 p < 0.05).

Assessment of their own knowledge about HIV / AIDS in respect to the frequency of obtaining information

The polled students from both groups estimated their own knowledge about HIV/AIDS differently in respect to the frequency of obtaining information during the last year. Namely, the students that estimated their knowledge as excellent were those who got the information about HIV/AIDS more than once during the last year (83.4%). 9.2% of the students who received the information once during the same year assessed their knowledge as excellent as well as 7.4% of the students who did not receive any information about HIV / AIDS. Similar answers were obtained from the students who assessed their knowledge as adequate: 81.8% received the information several times, 10.2% only once and 7.9% did not get any information. In the group of students who estimated their knowledge as insufficient, a considerably smaller number of students (55.6%), compared to the previous two groups, got the information more than once; 27.8% only once; 16.7% did not get any information (Table 2).

In the evaluation of the students' own knowledge about HIV/AIDS, there was a statistically significant difference in the distribution of answers

to the question about the frequency of obtaining information on HIV/AIDS during the last year (Kruskal-Wallis Test $\chi^2= 20.556$ p < 0.001).

Table 2 – The assessment of the students' own knowledge about HIV/AIDS in relation to the frequency of getting information

Frequency of getting information		Assessment of knowledge			Total	Test
		great	satisfactory	insufficient		
never	N ^o	12	24	9	45	Pearson $\chi^2=22.247$ p<0.001 Kruskal Wallis Test $\chi^2=20.556$ p<0.001
	%	7.4%	7.9%	16.7%	8.7%	
once	N ^o	15	31	15	61	
	%	9.2%	10.2%	27.8%	11.7%	
several times	N ^o	136	248	30	414	
	%	83.4%	81.8%	55.6%	79.6%	
Total	N ^o	163	303	54	520	
	%	100.0%	100.0%	100.0%	100.0%	

People from whom students usually received information about HIV/AIDS

The polled students usually got the information about HIV/AIDS from doctors and other health workers (75.0%). 12.3% of the polled mentioned friends as the source of the information; 3.8% of the polled mentioned parents as the source of the information, while 8.4% of the surveyed students indicated other persons (Figure 2).

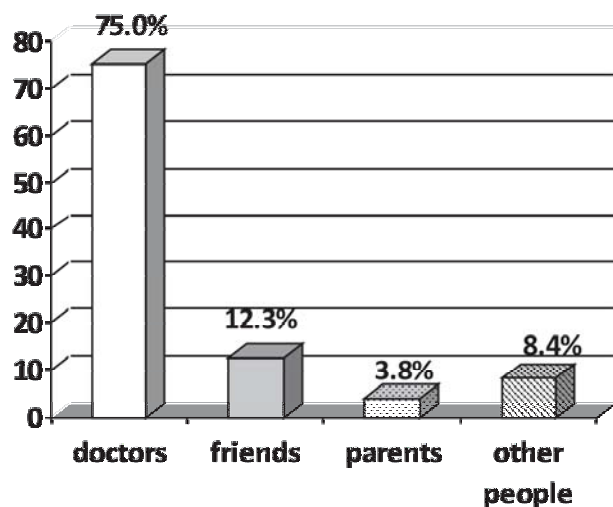


Figure 2. - Subjects from whom students usually receive information about HIV/AIDS

The research showed that there was not a statistical significance between males and females in the distribution of answers to the question about the people who were the most common source of information about HIV / AIDS (Mann-Whitney U Z = 0,890 p> 0.05).

81.7% of the students from the group of medical students and 71.3% of students from the group of the other faculties reported doctors and other health workers as the most common source of

the information about HIV/AIDS. 7.8% of biomedical students mentioned friends as the source of the information, as well as 17.3% of the students from the group of the other faculties. Parents were the source of the information to a small percentage of students (3.5% of the medical students and 4.2% of the students from the other groups). The students even had the fourth option in the questionnaire, which was related to the other people as the source of information. 7.0% of the medical students, and 7.2% of the other groups of students indicated this mixed group of subjects as the source of information (Table 3).

Between the groups of the medical and non-medical students, there was a statistically significant difference in the distribution of answers to the question about people who were the most common source of the information about HIV/AIDS. (Mann-Whitney U Z = 2414 p < 0.05)

The assessment of students' own knowledge in a relation to people from whom they received the information about HIV/AIDS

77.6% of the polled students of both sexes who estimated their knowledge as excellent indicated doctors as the source of the information, which was the case in 78.5% of the students who estimated their knowledge as sufficient and 60.9% of the students who estimated their knowledge as insufficient (Table 4).

In the estimation of knowledge of the students of both sexes on HIV/AIDS in respect to the subjects from whom the students usually received information about these diseases, a statistically significant difference in the distribution of answers was reported (Kruskal- Wallis Test $\chi^2= 9.013$ p < 0.05).

Table 3 - Subjects from whom the students usually receive the information about HIV/AIDS in relation to the group of faculties

Subjects from whom information was received		Group of students		Total	Test
		medical students	non- medical students		
doctors	N ^o	188	169	357	Pearson $\chi^2=10.127$ $p<0.05$ Mann-Whitney U $Z=2.414$ $p<0.05$
	%	81.7%	71.3%	76.4%	
friends	N ^o	18	41	59	
	%	7.8%	17.3%	12.6%	
parents	N ^o	8	10	18	
	%	3.5%	4.2%	3.9%	
other people	N ^o	16	17	33	
	%	7.0%	7.2%	7.1%	
Total	N ^o	230	237	467	
	%	100.0%	100.0%	100.0%	

Table 4 – The assessment of students' own knowledge about HIV / AIDS in relation to the subjects from whom they received information about HIV/AIDS

Subjects from whom students received information		Assessment of knowledge			Total	Test
		great	satisfactory	insufficient		
doctors	N ^o	114	215	28	357	Pearson $\chi^2=21.603$ $p<0.005$ Kruskal-Wallis Test $\chi^2=9.013$ $p<0.05$
	%	77.6%	78.5%	60.9%	76.4%	
friends	N ^o	11	38	10	59	
	%	7.5%	13.9%	21.7%	12.6%	
parents	N ^o	11	3	4	18	
	%	7.5%	1.1%	8.7%	3.9%	
other people	N ^o	11	18	4	33	
	%	7.5%	6.6%	8.7%	7.1%	
Total	N ^o	147	274	46	467	
	%	100.0%	100.0%	100.0%	100.0%	

The ways how the students obtained information about HIV/AIDS

The polled students (36.8%) reported media as the most common source of obtaining information about HIV/AIDS. The lectures and health care meetings were next with 29.5%; 23.2% of the students mentioned printed educational materials, while modern interactive forms of education (educational workshops, peer education, getting skills, etc.) were indicated only by 2.9% of the surveyed students. The other ways of getting information were indicated by 7.6% of the polled students.

There was no statistically significant difference between males and females concerning the answers to the questions about the common ways of obtaining information (Mann-Whitney U $Z = 0.194$ $p > 0.05$).

Also, there was no statistically significant difference in the distribution of answers to the question about the common ways of passing on the

information between the groups of medical and non-medical students. (Mann-Whitney U $Z = 1.657$ $p > 0.05$).

In the evaluation of the students' knowledge, there was no statistically significant difference in the distribution of answers depending on the most common ways of obtaining the information about HIV/AIDS. (Kruskal-Wallis Test $\chi^2 = 1.353$ $p > 0.05$).

Regression analysis

Univariate and multivariate models were made in order to measure the influence of some factors to the students' assessment of their own knowledge about HIV/AIDS (Table 5, Table 6).

By introducing the predictor variables (gender, frequency of getting information and subjects who were usually the main source of information) into the registration model in respect to the outcome variable (the subjective assessment of students' own knowledge), the following results

Table 5 – Univariate model

Model	ANOVA F	Sig.	(Beta) OR	t	Sig.	CI	
gender	2.465	.117	.069	1.570	.117	0.022	0.194
group of faculties	19.217	.000	.189	4.384	.000	0.128	0.335
frequency of getting information	9.061	.003	-.131	-3.010	.003	-0.215	-0.045
subjects who are the source of getting information	4.265	.039	-.095	-2.065	.039	-0.150	-0.004
ways of obtaining information	.305	.581	-.026	-.552	.581	-0.057	0.32

Dependent variable: the subjective assessment of students' own knowledge

Table 6 - Multivariate model Coefficients

Model	B	Std. Error	(Beta) OR	t	Sig.	CI	
(Constant)	1.985	.195		10.168	.000	1.601	2.368
group of faculties	.207	.055	.171	3.745	.000	0.098	0.315
frequency of getting information	-.214	.079	-.124	-2.701	.007	-0.369	-0.058
subjects who are the source of getting information	-4.087 E-02	.037	-.051	-1.097	.273	-0.114	-0.032

Dependent variable: the subjective assessment of students' own knowledge

were obtained: the model had a multiple correlation coefficient $R = 0.234$, a multiple regression coefficient $R^2 = 0.055$, a corrected coefficient of the multiple determination Adjusted $R^2 = 0.048$, which at the level of $p < 0.01$ has the statistical value (ANOVA of the model: $F = 8.909$ $p < 0.05$). Using the analysis of the partial standardized regression coefficients (Beta), it was noticed that the largest partial contribution to the explanation of the examined variables of the subjective assessment of the students' own knowledge about HIV / AIDS belonged to the particular group of the faculties and the frequency of getting information, while the subjects from whom the information was received usually did not have a significant influence.

DISCUSSION

The research showed that most of the students (79.9%) were frequently informed about HIV/AIDS, even though there was a group of students (8.3%) who did not receive any information about the same health problems during the last year. According to the frequency of getting the information about HIV/AIDS, there were no differences among students of the opposite sex. It was established that the students of the first group (83.5%) stated in higher percentage that they

received the information about HIV/AIDS several times during the past year, in contrast to the students from the group of non-medical students (76.1%).

This data was connected with the content of teaching in the first group of students, in which better availability of the information about HIV/AIDS was expected. For the same reason, the fact that 6% of the medical students did not receive any information about HIV/AIDS during the last year causes concern.

A similar situation is in other areas where the students of natural sciences, because of better availability of the information about HIV/AIDS, exhibited better knowledge in the same area (15, 16).

Experiences from around the world show and recognize the responsibility of the universities and faculties to carry out HIV/AIDS prevention and support programs and prevention education for the students of different study groups (17).

The subjective assessment of students' own knowledge about HIV/AIDS depended of the frequency of getting information in that field. In the group of the students who assessed their knowledge as excellent, 83.4% of the polled said that they received the information about HIV/AIDS several times during the last year, while in the group of students who assessed their knowledge as insufficient, 55.6% were those who also obtained the information several times.

These data confirm the great needs of students in the field of education about HIV/AIDS, which is the case with the other European countries as well. The research in the population of French students showed that their need for health information about sexually transmitted infections was placed first before other health-educational needs (18).

To the question who were the subjects that were the most common source of the information, both groups of 75% of the students listed doctors, which is not the case for most of the other countries where students in similar researches listed in the first place peers and friends (19, 20). The common characteristic of all the young people in the world is that they rarely stated their parents as the source of the information about HIV/AIDS (19, 21). Among students in Bosnia and Herzegovina, only 10% of the polled stated that they received the information from doctors (22).

Among males and females there are no statistically significant differences considering the answers to the question about the people who were the most common source of the information about HIV/AIDS, while there are differences in the distribution of answers to this question between the groups of medical and non-medical students. Namely, there are more students from the first group (81.7%) than from the group of non-medical students (71.3%) who indicated doctors as persons from whom they usually received information. This is

expected answer as the first group of students is in an more frequent contact with doctors during teaching.

The most important way of obtaining the information about HIV/AIDS for students of the University of Nis is mass media (electronic and printed). 36.8% of the polled students mentioned media. A similar situation is in the other countries where the television and print media (daily newspapers and magazines) are the leading ways of passing on the information about HIV/AIDS and other STDs among young people (23- 26).

In the distribution of answers to the question about the ways of obtaining information there was no statistical significance both in answers and among students of different gender, even among the students of different groups of faculties.

CONCLUSION

Based on the analysis of important elements during the process of informing students about HIV/AIDS, it can be concluded that gender of the students, people from whom they usually obtained information and the most common ways of obtaining information do not have a significant influence on how the students evaluate their knowledge about HIV/AIDS.

Belonging to a particular group of faculties and the frequency of obtaining information exert the greatest influence on the students' subjective assessment of their own knowledge on HIV/AIDS.

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INFORMISANOST STUDENATA UNIVERZITETA U NIŠU I PROCENA SOPSTVENOG ZNANJA O HIV/AIDS

Čedomir Šagrić¹, Olivera Radulović¹, Roberta Marković², Marjana Bogdanović³,
Mariola Stojanović², Aleksandar Višnjić¹

¹ Medicinski fakultet Niš, ² Institut za javno zdravlje Niš, ³ Studentska poliklinika Niš

SAŽETAK

Cilj rada bio je da se utvrdi uticaj pojedinih elemenata značajnih u procesu zdravstvenog informisanja o HIV/AIDS na subjektivnu procenu studenata o sopstvenom znanju u vezi sa HIV/AIDS. Anketnim istraživanjem je obuhvaćeno 519 studenata Univerziteta u Nišu. Analiza podataka podrazumevala je standardne procedure deskriptivne i analitičke statistike. Za upoređivanje frekvencija korišćeni su χ^2 test, Pearson test, Mann-Whitney test, Kruskal-Wallis test, univarijantna i multivarijantna regresivna analiza. Podaci su obrađeni u programu Microsoft Excel i SSPS 10.0. Među studentima koji su svoje znanje ocenili kao odlično, 83.4% je onih koji su informacije o HIV/AIDS dobili više puta tokom poslednje godine. Od studenata koji su svoje znanje procenili kao nedovoljno, tek 55.6% je informacije dobilo više puta. U proceni sopstvenog znanja o HIV/AIDS, u zavisnosti od učestalosti dobijanja informacija, postoji značajna statistička razlika distribucije odgovora (Kruskal-Wallis test $\chi^2=20.556$ p 0.001). Pol studenata, osobe od kojih su najčešće dobijane informacije i putevi dobijanja informacija, nemaju značajnog uticaja na subjektivnu procenu znanja studenata o HIV/AIDS. Najveći uticaj na subjektivnu procenu studenata o svom znanju u vezi HIV/AIDS imaju pripadnost grupi fakulteta i učestalost dobijanja informacija.

Ključne reči: studenti, HIV/AIDS