



Research Article

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Socio-Psychological Aspects of HIV Infection Prevention among First-Year University Students as a Health-Saving Factor

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ABSTRACT

The purpose of the study is to check the HIV awareness of the first-year university students in Melitopol, Ukraine experimentally to substantiate its importance (particularly about the way of its transmission and prevention) as a health-preserving factor. The study was conducted among the first-year university students in Melitopol, Ukraine. A total of 163 students (42 male and 121 female) participated in the survey in order to ascertain the students' HIV awareness and develop particular methods of filling the gaps in their knowledge about HIV/AIDS, as well as promote preventive measures against HIV spread in Ukraine. A questionnaire was developed for the survey, and it consisted of two blocks: the first one contained the questions concerning the students' HIV awareness; the second block was aimed at determining the sources of information from which the students received knowledge about HIV. The results of the survey demonstrated that the students have low HIV awareness that can lead to HIV infection. It has been found out that educational activities at universities and schools are the most effective means of HIV awareness formation and HIV infection prevention among youth (37.4%). Formation of preventive programs should be aimed at reducing the risk behaviour of young people. The existence of a correlation between the level of awareness and the probability of HIV infection has been revealed. It was found out that educational activities on HIV/AIDS should be understood as a set of timely provided knowledge about the ways of HIV infection and methods of its prevention. It was proved that the acquired knowledge influences the first-year students inner motivation to change behaviour which is a health saving factor.

Key words: *HIV, AIDS, HIV awareness, physical and psychological health, risk factors, socio-psychological conditions of prophylaxis, young people .*

INTRODUCTION

According to UNAIDS, in 2018 in Ukraine 240,000 people were living with HIV; 13,000 people were newly infected with HIV; and 6,200 people died from an AIDS-related illness. This has made Ukraine the second largest HIV epidemic in Eastern Europe and Central Asia. Another risk factor is that Melitopol is located in the south-east of Ukraine in Zaporizhzhia oblast that is among the leading ones in the number of HIV-positive people. International studies on the issue prove that youth is under the greatest threat of being HIV infected. Over 10.3 million people aged 15-24 live with HIV/AIDS [1]. Half of all new cases of HIV infection – over 7,000 daily – occur among young people [2]. This can be explained by a number of factors: first-year students often leave their hometowns and move to larger cities, they get into new companies, meet a large number of young people they do not know much about, they try on new social roles and statuses, they find themselves in unusual situations, they start their sexual life, their sexual relations become more varied, parents either lose control over them or it is significantly reduced [3, 4].

Thus, the HIV epidemic is the largest social threat both globally and locally, especially when speaking about youth. On the other hand, multiple studies show that many young people believe that HIV is not a threat to them at all [2]. Anyway, youth's behaviour, the degree of protection of their rights, as well as timely obtained information defines the quality of life of millions. Nowadays, young people are the greatest hope in changing the epidemic [5]. Thus, prevention of HIV infection among young people is seen as one of the most relevant factors. In fact, there are a lot of developed strategies, described by researchers, for preventing the spread of HIV/AIDS among young people [6-11]. Prevention strategies are usually divided into *primary*, which are aimed at the entire population, *secondary*, which are focused on working with high-risk groups, and *tertiary*, which focus on preventing the spread of the virus from people who are already affected by it. The formation of preventive programs is essential and it should take into account the disease content, as well as the epidemic situation in the country. The HIV/AIDS epidemic has a strong social character. It is spread due to a number of factors that are largely beyond the purview of medical workers [12].

It has been proved by a number of studies that risky sexual behaviour is the main way of HIV transmission in many countries around the world [13]. In the recent years sexual transmission has been holding the leading place among all cases of HIV infection in Ukraine [14]. The latest studies confirm the need of preventive interventions among young people at the social and structural levels. The existence of a correlation between the level of awareness and the probability of HIV infection is noted by scientists: the more educated a person is, the less likely they are to be at risk [2]. Education in this case is understood as awareness about the ways of HIV transmission and infection, consequences of risky behaviour, methods of individual prevention, etc. The acquired knowledge influences a person's inner motivation to change their behaviour. Fisher's model is based on the behaviour motivation principle, according to which knowledge provision is an important factor of successful preventive intervention [5]. The effectiveness of preventive intervention depends on application and development of skills and abilities after the intervention. Such activities should be aimed at prevention, elimination of stigma and discrimination connected with HIV/AIDS in the educational environment [15-18].

Thus, sexual and reproductive health programs can make an important contribution to HIV prevention and treatment, and STIs control is important for sexual, reproductive health and for HIV/AIDS control. Sexual and reproductive health programs consider the need for developing more integrated programs for control of sexual and reproductive health and STIs/HIV/AIDS [2]. Consequently, the achievement by the educational campaign of the level of influence on students' behavior, from broad (public) to narrow (individual) is a key to reducing the risk of HIV transmission among young people.

The *hypothesis* of the study is that young people (being at risk of HIV infection due to a number of factors) need timely awareness formation that can prevent them from being HIV infected and thus can be seen as a health-saving factor.

The *purpose* of this article is to check the first-year students' HIV awareness experimentally to substantiate its importance (particularly about the way of its transmission and prevention) as a health-preserving factor, and identify the most effective sources of communication as a socio-psychological feature for HIV prevention among young people.

METHODS

Participants: The first-year students aged from 16 to 23 (with the majority aged 17 – 18) of Bogdan Khmelnytsky Melitopol State Pedagogical University took part in the survey. The total number of respondents was 163 people, among them 42 were male and 121 female.

Organization of the research: The research was conducted from 2016 to 2018 at Bogdan Khmelnytsky Melitopol State Pedagogical University (Melitopol, Ukraine). The first stage started with the campaign dedicated to AIDS Awareness Day (1st December, 2016). The main purpose of the event was to inform the population of the city and the nearest villages about HIV/AIDS. During that campaign information and monitoring sessions were conducted for the 1st-year university students and their tutors. The first part was aimed at providing the students with information about HIV/AIDS, the consequences and the risks of uncontrolled behaviour and prevention methods. The second part of the information and monitoring sessions included interviewing the students. The questionnaire was developed for the survey, which consisted of two blocks: the first one contained the questions concerning the students' HIV awareness; the second block was aimed at determining the most effective sources of information from which the students learnt about HIV/AIDS.

The survey was done anonymously, when the students had to mention only their age and gender. They were asked to provide answers to five proposed questions. For each question three answers were offered and only one was correct. The questions contained general information about HIV/AIDS and modes of its transmission. The questionnaire in the second block contained a list of communicative sources from which young people could get information about HIV/AIDS. From the suggested options, the respondents had to choose the ones from which they received the most complete information about HIV/AIDS. All the sources were taken into account while data processing.

Statistical analysis: Processing of experimental materials was performed by means of analysis of variance and comparison of intragroup and intergroup dispersions according to Fisher criterion. It should be mentioned that $F_{\text{observation}} < F_{\text{criterion}}$ (0.05; 1; 4) with a reliability of 0.95 and it is possible to assert that the investigated factor influences the result of the study and the differences in group data. The results of the average data are not due to the influence of the time interval (2016-2018) and do not affect the overall result of the study.

RESULTS

The study was conducted on three faculties: Educational and Scientific Institute of Social-Pedagogical and Artistic Education (specialties: Psychology, Preschool education, Primary education, Social work); Philological Faculty (specialties: Ukrainian language and literature, English, German); Faculty of Natural Geography (specialties: Geography, History, Physical Education, Tourism). The total number of participants was 163.

Educational and Scientific Institute of Social-Pedagogical and Artistic Education (ESISPAE) was represented by 107 students: 7 male (6.5%) and 100 female (93.5%). The total number of first-year students of the Philological Faculty (PF) was 23 people: 5 male (22%) and 18 female (78%). And the number of respondents from the Faculty of Natural Geography (FNG) was 33 students: 28 male (85%) and 5 female (15%).

The survey demonstrated that most students from ESISPAE and PF were aware of the ways of HIV transmission (97.2% and 91.3% respectively). However, the students of FNG gave only 36.4% of correct answers to the first question. This can be probably explained by the gender specifics (see Table 1).

Over 70% of respondents of every faculty provided correct answers to the second question about the ways of preventing HIV infection (protected sexual contacts, healthy lifestyle and controlled behaviour). The highest number was provided by the students of ESISPAE (97.2%), while the least – by FNG students (72.7%) (Table 1). The third question turned to be a bit more difficult than the first and the second ones for all the respondents. It was about the students' awareness of body fluids that have a potential threat of HIV transmission. 92.5% of the respondents from ESISPAE provided correct answers to this question (blood, mother's milk); whereas, 7.5% of ESISPAE's students believed that saliva and sweat were also a threat of infection (that was incorrect). 72.7% of FNG's students and only 60.8% of PF's students chose the right fluids. This made it clear that more information should be provided to young people on this issue (see Table 1).

The fourth question was about the way of life and human behaviour that could lead to HIV infection. 96.3% of ESISPAE's students were aware of the fact that drug use, unprotected sex and tattoos in inappropriate environment were the most risky while sharing dishes, hugs and kisses did not carry the threat of HIV infection. Surprisingly, the results of the respondents from other faculties were much lower – 56.5% correct answers among PF's students and even less (48.4%) – among FNG's students. This meant that urgent measures had to be taken in order to fill in this gap in the first-year students' knowledge on this issue (see Table 1).

The fifth question about the possibility of giving a birth to a healthy child of HIV-positive woman was also difficult for the respondents: only 81.3% of ESISPAE, 81.8% of FNG and 74% of PF gave the correct answer (see Table 1).

The results indicate that the first-year students of ESISPAE gave the highest number of correct answers (over 81.3%) to all the questions. This meant that they were more aware of HIV compared to the students of PF and FNG.

Correspondingly, FNG's students appeared to be the least informed on such issues as the ways of HIV transmission (only 36.4%) and prevention (72.7%), as well as the connection of the risky behaviour with the chance to be HIV infected (48.5%).

PF's students were the least aware on such issues as the body fluids that have a potential threat of HIV transmission (60.8%) and the question about the possibility of giving birth to a healthy child by HIV-positive woman (74%). In spite of the fact that the majority of the students were female, 26% of the students found it difficult to answer correctly.

The results suggested that special activities and measures had to be developed for each faculty in order to eliminate the lack of information on the most problematic issues.

Table 1: The survey's results on HIV awareness of the first-year students of different faculties of Bogdan Khmelnytsky Melitopol State Pedagogical University

Question	Educational and Scientific Institute of Socio-Pedagogical and Artistic Education (ESISPAE), 107 respondents				Philological Faculty (PF), 23 respondents				Faculty of Natural Geography (FNG), 33 respondents			
	Correct answers		Incorrect answers		Correct answers		Incorrect answers		Correct answers		Incorrect answers	
	Absolute number	%	Absolute number	%	Absolute number	%	Absolute number	%	Absolute number	%	Absolute number	%
1. What are the ways of HIV transmission?	104	97.2%	3	2.8%	21	91.3%	2	8.7%	12	36.4%	21	63.6%
2. How can HIV infection be prevented?	104	97.2%	3	2.8%	18	78.3%	5	21.7%	24	72.7%	9	27.3%
3. What body fluids have a potential threat of HIV transmission?	99	92.5%	8	7.5%	14	60.8%	9	39.2%	24	72.7%	9	27.3%
4. How can person's lifestyle and behaviour lead to HIV infection?	103	96.3%	4	3.7%	13	56.5%	10	43.5%	16	48.5%	17	51.5%
5. Can a healthy child be born by an HIV-infected woman?	87	81.3%	20	18.7%	17	74%	6	26%	27	81.8%	6	18.2%

The general results of all the three groups are presented in Table 2 that is needed for relevant results comparison with the ones obtained after taking measures in order to improve the situation with the first-year university students.

Table 2: The general results of the survey on HIV awareness of the first-year students of Bogdan Khmelnytsky Melitopol State Pedagogical University (N = 163)

Question	Correct answers		Incorrect answers	
	Absolute number	%	Absolute number	%
1. What are the ways of HIV transmission?	137	84%	26	16%
2. How can HIV infection be prevented?	146	89.5%	17	10.5%
3. What body fluids have a potential threat of HIV transmission?	137	84%	26	16%
4. How can person's lifestyle and behaviour lead to HIV infection?	132	81%	31	19%
5. Can a healthy child be born by an HIV-infected woman?	131	80%	32	20%

The second stage of the study was to identify effective ways of informing young people about HIV. The survey answers of the first-year students from three faculties were taken into account (total number – 163 people). The question they had to answer was about the sources of information from which they had learnt about HIV.

The results showed that most of the students got information about HIV from educational institutions – schools and universities (37.4%). It turned out that healthcare workers providing information about HIV were chosen only by 17.2% of all respondents. 11.6% mentioned the Internet. Social advertisements on TV account for 8.6%, as well as handouts (named as booklets in the questionnaire). Newspapers and magazines were mentioned by 6.7% of students. The least used sources were topical seminars and trainings (4.3%), friends (3.1%) and street demonstrations (3.1%). Surprisingly, only 4.9% of respondents talked about HIV with their parents (4.9%). The results are presented in Table 3.

Table 3: The study results of sources of HIV/AIDS information used by the first-year students of Bogdan Khmelnytsky Melitopol State Pedagogical University

Modern sources of information about HIV	Absolute quality	%
School, university	61	37.4%
Healthcare workers	28	17.2%
The Internet	19	11.6%
Social advertisements on TV	14	8.6%
Booklets	14	8.6%
Newspapers, magazines	11	6.7%
Family, parents	8	4.9%
Topical seminars and trainings	7	4.3%
Friends	5	3.1%
Street demonstrations and campaigns	5	3.1%

The survey results' analysis proved that there was a significant gap in the first-year students' HIV/AIDS awareness. Another important finding was that educational institutions (schools, universities) were considered as the most efficient and reliable sources from which young people obtained information about HIV. As a result, the conclusion was made that the responsibility of educational institutions in youth's HIV/AIDS awareness formation was crucial and a lot of efforts should be made in order to use socio-psychological aspects for preventing HIV infection among the students. That had to be done by a number of educational activities.

In order to ensure the quality of information about HIV/AIDS, in collaboration with the Melitopol Center for Prevention and Control of AIDS a plan of prevention and educational activities was created. The decision was supported by the National Program to counter the HIV epidemic in Ukraine. In accordance with the objectives of the program, cooperation with healthcare institutions, educational institutions and other organizations was seen as the priority. The document reviews and assesses the contributions provided so far by sexual and reproductive health services for the prevention and treatment of HIV/AIDS, mainly through family planning services, sexually transmitted infections, and prenatal and auxiliary treatment [2].

According to the plan, activities were held on a monthly basis during the year. The first-year students had the opportunity to choose topics and forms of meetings (lectures, trainings, etc.). The forms of meetings are presented below:

1. Informational classes and talks about HIV/AIDS;
2. Case studies (learning the stories of real people having HIV/AIDS);
3. Campaigns "Healthy Lifestyle Day", "Let's stop HIV together";
4. Trainings ("Love as a form of communication of young people: the component of responsibility", "Choosing a Partner", "Love Means Care", "HIV/AIDS prevention", "HIV testing and treatment", "Sexual and reproductive health and HIV", "Coinfections of HIV", "What is PrEP?", "Prevention is care", "HIV treatment", "One test. Two lives", "Understanding stigma and discrimination", etc.);
5. Trainings with collage creation by the students ("My perfect choice", "My own values", "HIV epidemics", "Ending the HIV Epidemic", "HIV in facts and figures", "Coping with emotions and stress in a healthy way", an online exhibitions "Love", "HIV myths", etc.);
6. Round table sessions ("A man and a woman: defining the relationship between them", "The obscenity of a gender and the policy of double standards", "Risk and decision making", etc);
7. Training Game "Responsible choice is the basis of the conscious future";
8. Annual actions dedicated to HIV/AIDS Awareness Day;
9. Round table and information campaign on the results of the study.

After implementation of the series of preventive and educational measures, the following results were obtained (see Table 4). The first-year students are well-versed in questions about ways of HIV transmission and HIV prevention (100%). All the students know how lifestyle and behaviour influenced HIV contamination (100%). 98.2% of students are well-informed about body fluids that have a potential threat of HIV infection. The small percentage (5.5%) of students has not been informed about the possibility of a healthy baby being born by an HIV-infected woman.

Table 4: The study results of first-year students HIV awareness of Bogdan Khmelnytsky Melitopol State Pedagogical University (formative stage, N = 163)

Question №	Correct answers		Incorrect answers	
	Absolute number	%	Absolute number	%
1. What are the ways of HIV transmission?	163	100%	0	0%
2. How can HIV infection be prevented?	160	98.2%	3	1.8%
3. What body fluids have a potential threat of HIV transmission?	163	100%	0	0%
4. How can person's lifestyle and behaviour lead to HIV infection?	163	100%	0	0%
5. Can a healthy child be born by an HIV-infected woman?	154	94.5%	9	5.5%

DISCUSSION

The study suggests that the research of the first-year university students' HIV awareness is an important condition for the HIV infection prevention. It is important to note the difference and variability of answers on different faculties. The first-year students of ESISPAE's are more aware of HIV infection and the ways of preventing it than the students from the other faculties. The results have proved that the first-year students do not have sufficient information on HIV-infected people's life aspects. The PF students have found the question about lifestyle and human behaviour that can lead to HIV infection the most difficult that indicates their insufficient knowledge on this issue. For the FNG students, the questions about HIV infection and the ways of HIV prevention are the most relevant for further studies. The difference of the analyzed results of each faculty could be due to the gender factor. The most first-year students of ESISPAE and PF are female, while the FGN students are mostly male. Thus, the difference in their answers can be partially explained by specifics of psychological characteristics of young men and women.

Among the sources of communication that are the most effective for the HIV prevention among young people are Ukrainian educational establishments (37.4%). Other important sources of HIV awareness formation among young people are medical workers and the Internet (17.2% and 11.6%, respectively). Unexpectedly, such sources for HIV prevention as *family, parents, friends, street demonstrations* received the smallest percentage (4.9%, 3.1%, and 3.1%, respectively).

A series of prophylactic and educational events was held by pedagogical workers of Bogdan Khmelnytsky Melitopol State Pedagogical University and the representatives of the Melitopol Center for the Prevention and Control of AIDS.

The study results of the second stage of the first-year students' HIV awareness formation were analyzed: 100% of students are aware of the ways of HIV infection and its prevention, the lifestyle and human behaviour that can lead to HIV infection. 98.2 % of students are familiar with the information about body fluids that have a potential threat of HIV contamination. 94.5% of students are aware about the possibility of a healthy child being born by a HIV-infected woman.

It is evident that the development of the methodology of an information campaign and effective strategies for preventing HIV among young people requires clarification. Attention was focused on the need to enhance the participation of adolescents and young people in preventive work of HIV infection. The results made it possible to determine that pedagogical workers are the reference group in preventive educational work on HIV infection with the first-year students. Thus, the results of the first stage of the experimental study on the first-year students' awareness about HIV demonstrated the need for HIV preventive measures. Working with parents is important for encouraging them to discuss health risks with children, control their behaviour, especially in their free time, create a trusting atmosphere in the Ukrainian society, respect family values by all family members, etc.

CONCLUSION

The theoretical study shows that the HIV epidemic is a large-scale problem. This disease is asymptomatic at first and every person, regardless of his social status and material security, may become a victim of the HIV infection. Lack of timely awareness of the possible risks is one of the most spread causes of HIV infection. This factor is considered as the combination of all non-disclosure issues or incomplete information about HIV infection (ways of infection, ways to prevent it, the epidemiological situation in the country, the behavior that leads to HIV

infection, the most common illusions of young people about the disease, etc.). An equally important risk factor for HIV infection is the reduction of parental control. Due to changes in personal life (new social institute, new relationships, a new circle of friends, a sense of independence and weak self-control), the percentage of vulnerability among students is increasing. For modern youth, the problem is made worse by the use of alcohol, drugs, numerous sexual partners, uncontrolled behaviour as manifestation of autonomy and adulthood, as well as belonging to a certain subculture formed in the youth environment.

The conducted monitoring allowed us to state that the research on HIV youth awareness among young people is an important precondition for infection prevention. Educational activities at universities, meetings with medical workers and the Internet are the most effective sources of HIV prevention among youth. Risky sexual behaviour is the main source of virus transmission. There is a correlation between the level of awareness and probability of the HIV infection: the more educated the person is, the less risks of being HIV-infected they have. HIV education is understood as a set of knowledge about the ways of HIV transmission, consequences of risk behaviour, and individual preventive measures. It can be argued that the value of acquired knowledge is manifested in a first-year student inner motivation to change his or her behaviour. To increase understanding of the HIV/AIDS problem and to promote healthy lifestyle, well-established efforts in social communication and mobilization are needed.

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Conflict of Interests

The authors declare that there is no conflict of interests.

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