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## METHODS OF HIV INFECTION PREVENTION USED BY NURSES

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### Abstract

The article is devoted to the role of nurses in the prevention of immunodeficiency virus. Since nurses, by virtue of their activities, are closest to the sick and their families, they are able to create the most favorable atmosphere for them, which is very important for the success of treatment and control. Currently, HIV infection occupies a special place among socially significant diseases around the world and the spread of HIV infection is especially acute today and is one of the most important problems for the health care system. One of the main reasons for the spread of HIV infection is low awareness of HIV infection and the prevention of its infection.

**Keywords:** HIV infection, nurses, health, social problem, prevention work, educational institutions, pupil.

### 抽象的

这篇文章专门讨论护士在预防免疫缺陷病毒中的作用。由于护士凭借其活动与病人及其家人最亲近，因此能够为他们创造最有利的氛围，这对治疗和控制的成功至关重要。目前，艾滋病病毒感染在全球社会重大疾病中占有特殊的地位，艾滋病病毒感染的传播在当今尤为突出，是卫生保健系统面临的最重要问题之一。HIV感染传播的主要原因之一是对HIV感染的认识 and 对其感染的预防。

Received: July 02, 2021 / Revised: August 22, 2021 / Accepted: September 11, 2021 / Published: September 26, 2021

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关键词：艾滋病毒感染、护士、健康、社会问题、预防工作、教育机构、学生。

## INTRODUCTION

HIV is a slow-growing viral disease characterized by damage to immune cells, the terminal stage of which leads to suppression of the human immune system and is called AIDS (Acquired Immune Deficiency Syndrome) [1]. The first cases of the mysterious disease appeared in the late 1970s in the United States, Sweden, Tanzania, Haiti. The main page in the dramatic history of AIDS was opened in 1981 by the U.S. Centers for Disease Control. It was at that time that they registered a new disease called AIDS (Acquired Immune Deficiency Syndrome). In 1981, unusually sexually oriented young people began entering clinics of different ages in Los Angeles and San Francisco with non-age-specific diseases: vascular cancer (Kaposi sarcoma) and pneumonia caused by specific microorganisms of the pneumocystis type. . Doctors understood that these diseases could be caused by a decrease in immunity (the body's defense system), but it was surprising why they occur in homosexual men [2].

The prevalence of AIDS in the world is different because the epidemic always amazes us. Initially, it was believed that the virus would not pass through the iron curtain. When HIV began to appear among our compatriots in 1987, many still believed that several dozen "homosexuals, drug addicts, perverts" would be affected, and that the bulk of the "respectable" population would not be infected with HIV. At the same time, a philosophy has been formed to fight HIV, which is to identify, register, and, if they are completely physically separable, all people living with HIV, even if they are not physically segregated. at least partial isolation,

prohibition of treatment anywhere except AIDS centers [3,7].

Following the world's experience of infecting children in hospitals, the world community has changed its belief that those infected with HIV are "to blame" for this terrible tragedy. The press began to write enthusiastically about "innocent victims". NGOs whose mission is not only to fight the "plague of the 20th century" but also to help people trapped in the tragic vortex of the problem have begun to emerge.

But on a daily basis, families of infected children often find themselves in a situation similar to that of adults "infected through no fault of their own". Broken windows, layoffs, non-admission of children to kindergartens, senseless harassment and isolation allow HIV-infected people to continue to hide like criminals, leave their homes, or keep it a secret if the diagnosis is successful. , who did not dare to keep their pain to themselves, or even to share it with their loved ones.

Today, HIV infection has gone from a rapidly fatal disease to a chronic disease. This was made possible by the introduction of highly active antiretroviral therapy (ARVT) as well as advances in the prevention and treatment of opportunistic infections. The course of the disease has changed, including in the terminal stage. Crisis alternates with long-term remissions, and with adequate care, the "terminal period" often becomes transient, with the patient's condition significantly worsening [2,3,7].

HIV-infected patients need special care throughout their lives. Palliative care is an integral part of specialized care for HIV-infected

patients. Palliative care is a relatively new area of health care that, according to the World Health Organization, aims to improve the quality of life of patients and their loved ones with life-threatening illnesses. The main goal of palliative care is to prevent and alleviate the suffering caused by progressive, incurable disease. Early detection, thorough assessment and effective treatment of pain and other symptoms, as well as psychological, social and spiritual problems, is an integral part of quality palliative care. The need for palliative care and care at different stages of life of a person living with HIV varies and increases during a crisis. As the disease progresses, treatment options decrease, while the role of palliative care increases. As the disease progresses, good care becomes more important. Nursing care is an important part of palliative care. It is the nurse who is the unique link between the patient and the doctor. When working with people living with HIV, he should not only have a certain professional knowledge, but also great skills in communicating with the patient, because the success of treatment often depends on it. It is important to understand the importance of the role of the nurse in the prevention of HIV infection and the need for practical and methodological assistance in carrying out this activity. HIV infection is one of the leading infectious diseases in the world and in Uzbekistan in terms of its socio-economic and medical significance and is characterized by a very high level of psychological stress [4].

The experience of foreign countries has shown that if nurses have a complete and accurate knowledge of HIV, they can use it to implement a wide range of measures to prevent the spread of the disease. In view of the above, special attention should be paid to increasing the

role of the nurse in the organization and conduct of HIV prevention [4,5,7,8].

Goal and tasks. The purpose of our work is to develop and scientifically substantiate directions for improving the role of nurses in the prevention of HIV infection on the basis of a comprehensive medical and organizational research.

Achieving this goal involves solving problems:

- Analyze the level, structure and dynamics of changes in the HIV epidemic situation among the population.
- To study the awareness of some contingents of the population and nurses about HIV infection.
- To study the attitudes of some contingents of the population and nurses towards people living with HIV.
- Scientifically substantiate, develop and implement a set of measures to improve the work of nurses on HIV prevention.
- To develop guidelines for nurses on the implementation of an innovative direction of HIV prevention among some contingents of the population.

## **MATERIALS AND METHODS**

The city of Tashkent was chosen as the capital of the economically developed Republic of Uzbekistan for research. As of December 15, 2020, the population of the Republic of Uzbekistan was 34,550,623. Tashkent is an economically developed "industrial center". Tashkent has large treatment and prevention, specialized, diagnostic and private medical institutions. The city has a population of 2,510,800 in 2019 and a population density of 7,380 people per 1 km<sup>2</sup>. At the national level, this figure is on average 100 times higher than in

other regions. Given that the level of medical care in the capital and the level of health literacy of the population should be high, we selected the population of Tashkent for the study. Thus, in terms of key demographic, social and economic characteristics, Tashkent is one of the most industrialized regions of Uzbekistan, and the scientific results based on it are areas with an epidemic situation comparable in terms of HIV infection and the level of development of can be used for medical care. This work is a complex organizational, socio-hygienic and medical-statistical research. It provided for the solution of a number of tasks that would allow developing recommendations for nurses on the implementation of an innovative direction for the prevention of HIV infection among the population. In accordance with the tasks, a research program was drawn up, which includes 5 stages. The choice of research objects was determined in accordance with the tasks and stages of work. **The search for literary sources** was carried out using the bibliographic databases Web of Science, Scopus, DBLP, Medline. When selecting sources, they paid attention to experimental articles, literary reviews, the number of their citations over the past year.

## RESULT

Sociological research was conducted in schools of Tashkent, TTA lyceum and TTA to address the identified challenges. Data collection was carried out using a standardized questionnaire containing closed and open questions. We used a “population survey that included questions on stigma and discrimination against people living with HIV”. The survey was conducted among high school students, high school students, students and teachers. An online

survey on the COVID-19 pandemic was also conducted.

This work is a complex organizational, socio-hygienic and medical-statistical study. Our research aims to address a number of issues that allow nurses to develop recommendations for the implementation of an innovative approach to HIV prevention among the population. According to the tasks, a research program consisting of 5 stages was developed. The selection of research objects was determined in accordance with the defined tasks and stages of work.

In the first phase of the study, an analysis of the level, structure and dynamics of changes in the HIV situation in Tashkent for the period 2010-2019 was conducted. To do this, we analyzed the data provided in the annual reports of UNAIDS and the Center for AIDS Control of the Ministry of Health of the Republic of Uzbekistan, as well as a set of statistical materials on the activities of health facilities in the Republic of Uzbekistan. Based on the data obtained, the prevalence of HIV infection among different segments of the population was studied. Over the years, a number of dynamic indicators have been calculated to determine the patterns of the spread of HIV among the population of Tashkent among different segments of the population: absolute growth, growth rate and transparency. The mean incidence rate (M) for 10 years was calculated. This made it possible to: Identify the districts of Tashkent with the highest rates of HIV infection among different segments of the population. The second phase of our study was devoted to the study of the prevalence of risk factors for HIV among the population of Tashkent and analyzed the awareness of certain segments of the population about HIV infection. We have developed a questionnaire to get the

necessary information. All of our surveys contain a minimal amount of simple and straightforward questions that have easy answers about how people are living with HIV, ways of infection, and more. This stage was held in the traditional way and online. The traditional method was carried out through sociological research conducted on the basis of 15 schools in 11 districts of Tashkent, academic lyceums under the TTA and TTA. Permission was obtained from the Tashkent City Department of Public Education and principals of secondary schools to conduct seminars and surveys. Also, in connection with the COVID-19 pandemic, we have created a site for conducting an online survey among the population (<https://freeonlinesurveys.com/s/mzOexCq2#/0>) and there we posted our guide and encouraged the population to participate in the survey using social networks (Telegram, Facebook and LinkedIn). For the convenience of respondents, all surveys were conducted in Uzbek and Russian. The survey was conducted in three parts: in 2019 - before the implementation of the program, in 2020 - after the implementation of the program, in 2021 - the assessment of long-term results; the basic array method was used to form the samples. The 1st survey was conducted among high school students, high school students, students, and teachers. Interviews were conducted with 1111 respondents (school students - 760, lyceum students - 51, students - 150, teachers - 150). The second online survey was conducted through campaigns to participate in the survey on social networks such as Telegram, Facebook and LinkedIn. A total of 256 people attended in one month. To determine the level of awareness of HIV infection, we conducted a survey among the population of the city of Tashkent. 1,367 respondents were

interviewed. For analysis, we divided them conditionally into 3 groups. The first group included children and adolescents (n = 811), the second group (n = 355) included the young contingent of the population, and the third group consisted of the adult contingent of the population (n = 201).

The survey was conducted by means of anonymous questionnaires (offline and online). For the convenience of the respondents, the questionnaires were drawn up in Uzbek and Russian. To conduct a survey among students, permission was obtained through the City Department of Public Education of the Republic of Uzbekistan and was agreed with the directors of educational institutions. A survey was conducted in all districts of the city of Tashkent in 13 schools, in the lyceum, in the TMA and in other universities (by online survey) (Table №1).

Table №1

Respondents:	I group (n=811)		II group (n=355)		III group (n=201)	
	Abs	%	Abs	%	Abs	%
Secondary schools and the Academic Lyceum of Tashkent	811	100	390	111±1.7	910	45±3.5
Higher educational institution	0	0	287	81±2.1	200	10±2.1
Other	0	0	290	81±.5	900	45±3.5
freeonlinesurveys.com	101	40	155	14	155	14

Among the respondents we interviewed, 60% are women and 40% are men. 59% of those

surveyed were 14-18 years old, 26% 18-29 years old, 15% 30 and older.

Considering that most of the respondents were children, adolescents and young people, out of the total number of respondents, just over 20% were married, of which 85% are in a registered marriage, 10% are in a civil marriage and 5% are divorced. In terms of social status, among young people, only 15% work, the rest are students of one or another institution, among the adult contingent 80% are employed, of which 10.5% are workers, 85.7% are employees and 6% are entrepreneurs.

It should be noted that the majority of respondents (70%) believe that HIV infection is an urgent problem for our city. However, the respondents of the first group, i.e. Almost half of schoolchildren (1.6 times more than older people and 2.5 times more than adults) do not believe that HIV is an urgent problem.

Despite the fact that testing for HIV infection, i.e. laboratory tests, allowing to determine a person's HIV status, are carried out in all AIDS centers and in interdistrict HIV diagnostic laboratories when asked whether you know about the possibility of conducting HIV tests and whether you have conducted laboratory tests for HIV among adults, only half answered positively 59% of respondents ... Among people 18-30 years old, only 38% have information about where you can get tested and donated blood for analysis themselves. Whereas children under 18 are not aware of this information at all.

Scientists have identified all possible routes of transmission of the virus and addressed the public. The virus is transmitted only through blood, semen, vaginal fluids, breast milk. Therefore, any person is able to prevent the transmission of the virus, for this you just need to know the transmission route. Doctors have

proven that only four biological fluids of the human body contain sufficient concentration of HIV to infect another person. These are: blood, semen, vaginal secretions and breast milk. If one of the listed fluids of an HIV-positive person enters the body of a healthy person, then the likelihood of contracting HIV will be very high.

Table №2

List the ways of HIV transmission known to you	I group (n=811)	II group (n=355)	III group (n=201)
Know all the ways of HIV transmission	21±1.4	28±2.4	32±3.3
Wrong answer	56±1.7	58±2.6	53±3.5
Found it difficult to answer	23±1.5	14±1.8	15±2.5

Our survey shows a low awareness of the respondents about the ways of HIV transmission (Table №2). Only a third of the respondents were able to list all the ways of transmission. Unfortunately, both among the population of relatively young age and among the population of older age, almost 70% do not know all the ways of transmission of HIV infection and found it difficult to answer this question.

Table №3

What biological fluids can you get HIV through?	I group (n=811)	II group (n=355)	III group (n=201)
Know all sources of HIV	35±1.7	46±2.6	48±3.5
Wrong answer	45±1.7	52±2.7	40±3.5

Found it difficult to answer	20±1.4	2±0.7	12±2.3
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Slightly more than 40% of the respondents were able to list all sources of HIV, i.e. biological fluids through which HIV infection can be transmitted, and the awareness of this issue among respondents under the age of 18 is 1.3 times lower than among older people (Table №3). It should be noted that one fifth of the surveyed schoolchildren found it difficult to answer this question. The fact that HIV is transmitted through blood with confidence was answered by 35% of respondents, sperm - 25%, vaginal secretions - 16%, breast milk - 11%. It should be noted that 10% of respondents believe that HIV infection can be transmitted through saliva and urine.

According to the majority of survey participants (83.5%), HIV transmission is possible during pregnancy and / or childbirth from mother to child. A little more than half of the respondents (53.1%) are aware of the possibility of preventing the infection of a child if a pregnant woman infected with HIV takes HIV medications, a third of the respondents (36%) found it difficult to answer this question. Almost the same percentage of responses were about HIV transmission through breast milk.

Almost all survey participants answered that an HIV-infected person cannot be identified by their appearance. It is gratifying to note that female respondents among young people and adults know that in order to reduce the risk of HIV infection, it is necessary to protect themselves with a condom (91.2%). The strategy of mutual fidelity of sexual partners is considered effective in the prevention of HIV infection by 67.5% of the respondents.

The most common misconceptions about the possibility of transmission of HIV infection through domestic use include the idea of such transmission channels as smoking (20%) and mosquito bites (11.2%). The same answer options caused the greatest uncertainty among a quarter of the children surveyed - 25.3%. The ways of HIV transmission when swimming in the pool, through kissing, sneezing and coughing, and eating together also raise questions: from 13% to 25% of respondents found it difficult to answer unequivocally.

Above, it was discussed how HIV infection is transmitted and what every person should know about this disease. In order to reduce stigma and discrimination against PLHIV, the population must know how HIV is not transmitted.

71% of respondents know how to detect HIV infection in a person, however, among schoolchildren, only 55% could answer this question correctly, which is 1.5 times less than older respondents. 95% of the respondents who answered correctly know that HIV can be determined by donating blood for antibodies.

In every region of our Republic, in the Republic of Karakalpakstan and in Tashkent city there are AIDS Centers, where after the diagnosis of HIV infection is established, patients are registered at the AIDS Centers at their place of residence. The AIDS Centers have laboratories for testing the blood of patients for clinical, biochemical and immunological (CD4 cells) parameters. I would like to note that more than half of the survey participants (57.6%) know that blood must be donated at the AIDS Centers. More than a third of schoolchildren found it difficult to answer this question, apparently, they did not receive such information.

To date, there is no scientific evidence that pregnancy can accelerate the progression of HIV infection. To protect the child from developmental disorders and fetal diseases, HIV-infected women, like all pregnant women, need to change their lifestyle for a healthier one. Complete rejection of alcohol, cigarettes and, of course, drugs. A woman should follow a balanced diet and follow all the recommendations of the attending physician. It is strictly necessary to follow the course of ART. Without proper precautions during pregnancy, labor and delivery, the risk of a newborn being infected with HIV is as high as 40%. With timely started prevention, it can be reduced to 1-2%. To find out the level of knowledge of our respondents about the above, they were asked the question "Can an HIV-infected mother give birth to a healthy child?" Almost 2/3 of respondents 2 and 3 answered correctly to the question posed, while 77% of schoolchildren found it difficult to answer this question or answered incorrectly.

Only half of the respondents believe that HIV infection can be contracted at any time, and there is no guarantee that this problem will not affect them. Therefore, this category of people will always be extremely careful and will follow all precautionary rules. However, 44% of schoolchildren found it difficult to answer this question, and 35% believe that this problem will not affect them in any way.

We also asked the respondents whether they need additional information about HIV. Strange as it may seem, the schoolchildren answered this question negatively, although for all the previous questions this particular category could not give correct answers.

## DISCUSSIONS

The level, structure and dynamics of changes in the epidemic situation for HIV infection in the districts of the city of Tashkent for the period from 2010-2019 was analyzed. The prevalence of risk factors for HIV infection among the population of Tashkent city was studied. The awareness of some contingents of the population regarding HIV infection has been analyzed. Determined the level of awareness of nurses of family polyclinics, health care facilities and specialized AIDS centers in Tashkent in issues of HIV infection.

## CONCLUSION

The HIV epidemic threatens the sustainability of modern society in many countries around the world, including Uzbekistan. To date, HIV infection has been registered in all regions and cities of the Republic of Uzbekistan. Given the international experience in the fight against HIV and the experience gained in Uzbekistan, HIV prevention education not only reduces the risk of infection, but also develops skills for a healthy lifestyle and responsible behavior in the younger generation creates a perspective. The disease is a socio-medical-biological phenomenon, characterized by dynamism, increasing negative effects, and reflects the symptoms of an emergency and long-term problems. This situation requires immediate response, the development of a system of long-term protection and countermeasures.

At present, most of the programs to prevent HIV infection among the most vulnerable segments of the population, which are based only on the promotion of healthy lifestyles, are not very effective in practice. In view of the above, the initiation of preventive work should



be as early as possible, because the actions to prevent HIV infection are not only informational and educational work, but also a permanent goal-oriented activity to form human value, health. It takes a long time to inculcate the skills to lead a healthy lifestyle.

Thus, our survey of some population groups, in particular children and adolescents, young people under 30 and people over 30, showed that the level of awareness of these categories on HIV infection is relatively low. Particular attention should be paid to the fact that on almost all issues there is a very low level of knowledge among schoolchildren of secondary schools and lyceums.

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