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The Importance Of Studying The Epidemiological Characteristics Of Hiv Infection Among Women By Age

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Abstract

The article presents the results of an analysis conducted among age-based comparative groups of girls and women under the age of 18 infected with HIV. It is also noted that the distribution rates of transmission routes vary across administrative regions. The study emphasizes the need to consider age-specific indicators when strengthening epidemiological control over the spread of HIV infection among women in the Republic of Uzbekistan. Epidemiological analysis confirmed that 65.3% of women contracted HIV primarily through unprotected sexual intercourse. The findings highlight the necessity of conducting regular awareness-raising activities among vulnerable groups and mobile populations, as well as the importance of continuously monitoring their level of awareness through modern digital systems.

Keywords: HIV infection, danger zone, unprotected sexual intercourse, medical parenteral, age groups, vulnerable group, mobile population, modern digitalization system.

Introduction

It is known that one of the factors determining the intensity of the spread of HIV infection among the population is the age of patients. [5]. Currently, HIV infection and its consequences are considered a disaster for humanity throughout the world and are included in the group of diseases that pose a serious threat to health. The danger is that this disease is more common among the population aged 19–45 years, which is the

main force ensuring the development and socio-economic stability of each country [1]. The health of the reproductive age population largely determines the dynamics of demographic development. Therefore, the protection of reproductive health is an important direction in the development of state demographic policy [4].

According to UNAIDS data for 2023, since the beginning of the epidemic, the number of people living with HIV has reached 38.6 million people, of which 53% are women and girls infected with HIV [8].

Uzbekistan also faces the threat of the spread of HIV infection, which emerged in the late 20th century and poses a threat to human health and socio-economic development. HIV infection first entered higher education institutions in 1987 among students from foreign countries such as Panama, Uganda and Zaire. According to the rules in force at that time, after confirmation of the final diagnosis at the AIDS Center in Moscow, Russian Federation, a patient diagnosed with HIV was sent back to his home country. From 1989 to 1999, the prevalence of this infection was determined among local residents, that is, among 76 injection drug users who were at risk. In 1999, the first AIDS patient died [2].

The first woman in the republic became infected with HIV in 1999, and since 2000, cases of the disease have been registered among the population as a whole. When analyzing the prevalence rates by transmission routes to date, it was noted that due to the fact that spouses, i.e. sexual partners of the majority of women, left to earn money as long-term labor migrants to the Republic of Kazakhstan and the Russian Federation (32.2%), there was a sharp decrease in social control and, as a consequence, an increase in the sexual transmission of HIV infection. Labor migrants represent a high-risk group for sexually transmitted diseases due to the absence of a permanent sexual partner for a long time [6].

The specificity of preventive measures among people at risk of HIV infection leads to increased costs. When working with HIV-infected patients, strict confidentiality is required, and there are often cases when patients require legal and other services related to the provision of medical care. Systems for testing, diagnostics and treatment of HIV, as well as treatment regimens, are also being improved every year. Given the specificity of working with HIV-infected patients, specialists providing them with medical and psychological care must regularly improve their knowledge and skills. The following information is devoted to some aspects of reproductive health and family planning, although these two definitions are closely related. The problem of family planning is relevant at all stages of human development [7].

The role of mobile populations in preventing the spread of HIV among migrant workers is increasingly being studied. Global migration poses a number of economic and environmental risks to mobile populations living with HIV/AIDS, including lack of access to health services and information, as well as to treatment and prevention services and care [3].

Objective of the study: To study the significance of age indicators in the epidemic spread of HIV infection among women in the Republic of Uzbekistan.

Research materials: Official reporting forms of the AIDS Control Center of the Republic of Uzbekistan on the general incidence rate as of 01.01.2022 have been put into operation.

Research methods: Epidemiological and statistical methods were used.

RESULTS AND DISCUSSION

The results of a comparative analysis of the epidemic spread of HIV infection by gender in the Republic of Uzbekistan showed that women account for 45.4% of the total number of cases.

The results of a comparative analysis of HIV infection among women by administrative regions revealed that the most disadvantaged regions are the city of Tashkent, Andijan and Tashkent regions. The main reason for this is the current growth of internal migration in the city of Tashkent and Tashkent region, while almost the majority of those involved in external migration in Andijan region work in the Russian Federation.

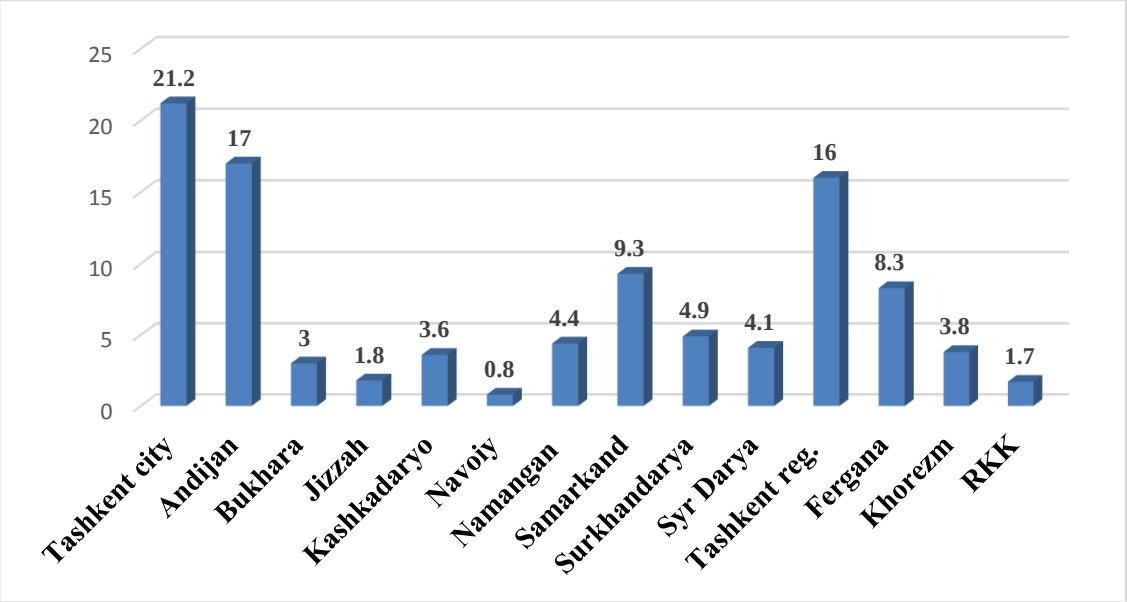

Figure 1. Analysis of the overall incidence of HIV infection among women in the Republic of Uzbekistan by administrative regions as of 01.01.2022 (%) (n = 20584)

According to the analysis of the total number of women and girls under 18 by administrative regions, Tashkent city accounts for 21.2%, Andijan - 17%, Tashkent - 16%, Samarkand - 9.3%, Fergana - 8.3%, Surkhandarya - 4.9%, Namangan - 4.4%, Syr Darya - 4.1%, Khorezm - 3.8%, Kashkadarya - 3.6%, Bukhara - 3%, the Republic of Karakalpakstan - 1.7%, Navoiy - 0.8%. [see 1-fig].

The results of the analysis of the routes of infection transmission, based on the laws of epidemiology, allow us to determine the level of prevalence. The data presented in the table indicate that the level of sexually transmitted infections (65.3%), which has been registered in recent years all over the world, is also high in our country. The medical parenteral route of transmission accounts for 12.0%, injection drug users - 10.5%, vertical transmission (from mother to child (perinatal, intranatal and postnatal) - 1.9%, non-medical parenteral transmission - 1.2%, and from the epidemiological point of view, the transmission route remains unclear for 8.6% of HIV-infected people. The main reason for this is that many people living with HIV do not suspect that they are infected, because they do not want to see a doctor or do not need medical care. The results of the comparative analysis presented in Table 1 show that the routes of infection transmission are uneven across administrative regions. Epidemiological analyses confirmed that 65.3% of women of reproductive age are infected with HIV, mainly through unprotected sexual intercourse. It was noted that the results of the comparative analysis in different regions are not the same. A significant role in the dynamics of the disease is also played by densely populated and mobile population, as well as the proportion of people involved in migration.

1-table

Comparative analysis of the total number of people living with HIV infection in the Republic of Uzbekistan as of 01.01.2022 by administrative regions depending on the routes of transmission (%) (n = 38573)

Administrative regions	medical parenteral routes	Parental notice	Vertical	Sexual	N/A	Injection drug users
the city of Tashkent	13.2	20.5	28.2	24.6	58.4	38.4
Andijan region	2.6	0.4	0.6	0.6	0.2	0.04
Bukhara region	4.1	11.0	2.7	4.3	2.6	1.5
Jizzakh region	1.6	1.6	2.1	2.0	1.8	0.6
Kashkadarya region	6.6	8.2	4.3	4.5	4.8	0.7
Navoiy region	0.7	2.6	0.4	1.3	1.0	0.7
Namangan region	10.6	2,2	3.3	4.8	4.8	0.2
Samarkand region	11.2	12.9	10.4	11.1	4.0	17.0

Surkhandarya region	2.4	6.8	3.7	6.4	4.8	6.8
Sir Darya region	5.5	25.2	7.8	4.6	1,1	1.7
Tashkent region	20.2	-	28.3	18.0	3.2	23.2
Fergana region	18.5	1,2	4.4	9.1	8.4	2.6
Khorezm region	2.0	5.2	2.7	5.3	3.4	3.5
Republic of Karakalpakstan	0.08	1.8	0.5	2.6	0.9	2.5
Total	**12.0**	**1,2**	**1.9**	**65.3**	**8.6**	**10.5**

Note: N/A - Some cases among women were reported with an unknown route of HIV transmission.

Next comes the medical parenteral transmission, which accounts for 12.0%. This is a very dangerous and alarming indicator from the epidemiological point of view. Relatively more often, the transmission of infection by medical parenteral route was detected in Tashkent (20.2%) and Fergana (18.5%) regions. It was also found that the non-medical parenteral route of transmission was 25.2% in Syrdarya region and Tashkent city, transplacental route of HIV transmission in Tashkent city - 28.2%, Tashkent region - 28.3%, sexual route of transmission in Tashkent city - 24.6%, Tashkent region - 18.0%, unknown route of transmission - 58.4%, the proportion of HIV-infected in Tashkent city - 38.4%, Tashkent region - 23.2%, Samarkand region - 17.0%. At the national level, it has been established that the prevalence of HIV infection is relatively low in the Navoiy region and the Republic of Karakalpakstan. It is worth noting that in the Tashkent region, there have been no registered cases of non-medical parenteral transmission of infection. Non-medical parenteral transmission of HIV infection is understood to mean the use of HIV-infected blood and its components that have not undergone serological testing, the use of non-sterilized instruments during non-medical procedures involving damage to the integrity of the skin , such as tattoos, pedicures and manicures in beauty salons, the reuse of non-sterile non-medical instruments containing blood residues, as well as the reuse of a syringe used by another person when injecting drugs.

Based on the objective of our study, based on the results of the analysis of the overall prevalence of HIV infection among girls under 18 years of age in the Republic of Uzbekistan, it was determined that among the administrative regions, the most dangerous region is the Andijan region.

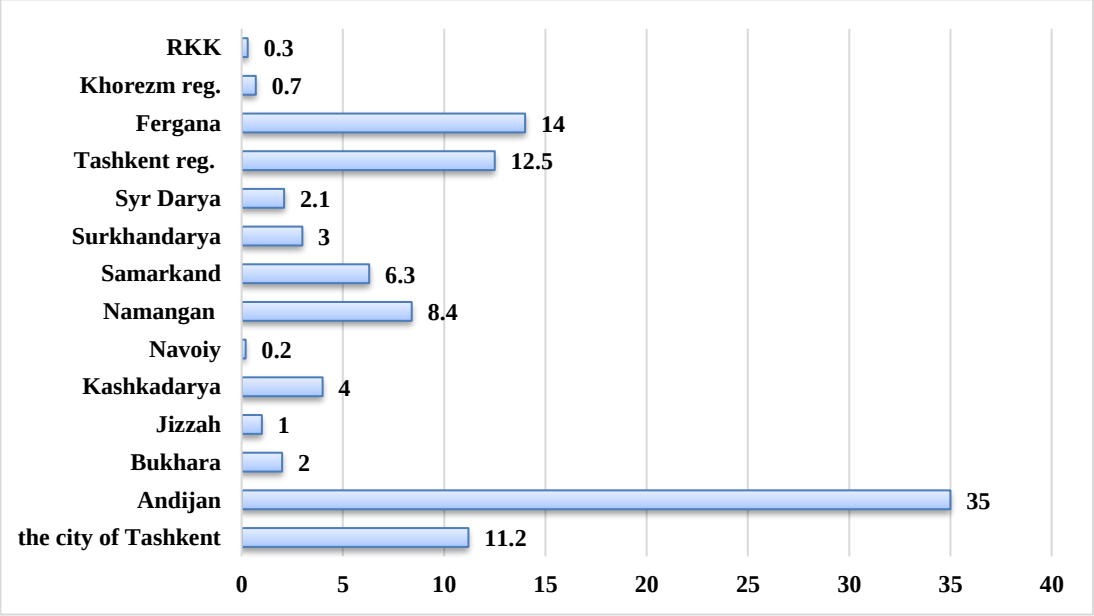

Figure 2. Analysis of the overall incidence of HIV infection among girls under 18 years of age in the Republic of Uzbekistan (%) (n = 2669)

Figure 2 analyzes the dynamics of HIV-infected girls under 18 by administrative region. Andijan region ranks first in prevalence among girls – 35%. It is followed by Fergana Valley – 14%, Tashkent region – 12.5% and Tashkent city – 11.2%. The lowest incidence rates were recorded in Navoi region – 0.2%, the Republic of Karakalpakstan – 0.3% and Khorezm region – 0.7%. The results of the subsequent analysis included an

epidemiological analysis of the routes of HIV infection among girls under 18. The analysis of the routes of HIV infection showed that most girls under 18 were infected through medical parenteral route, i.e. injection route.

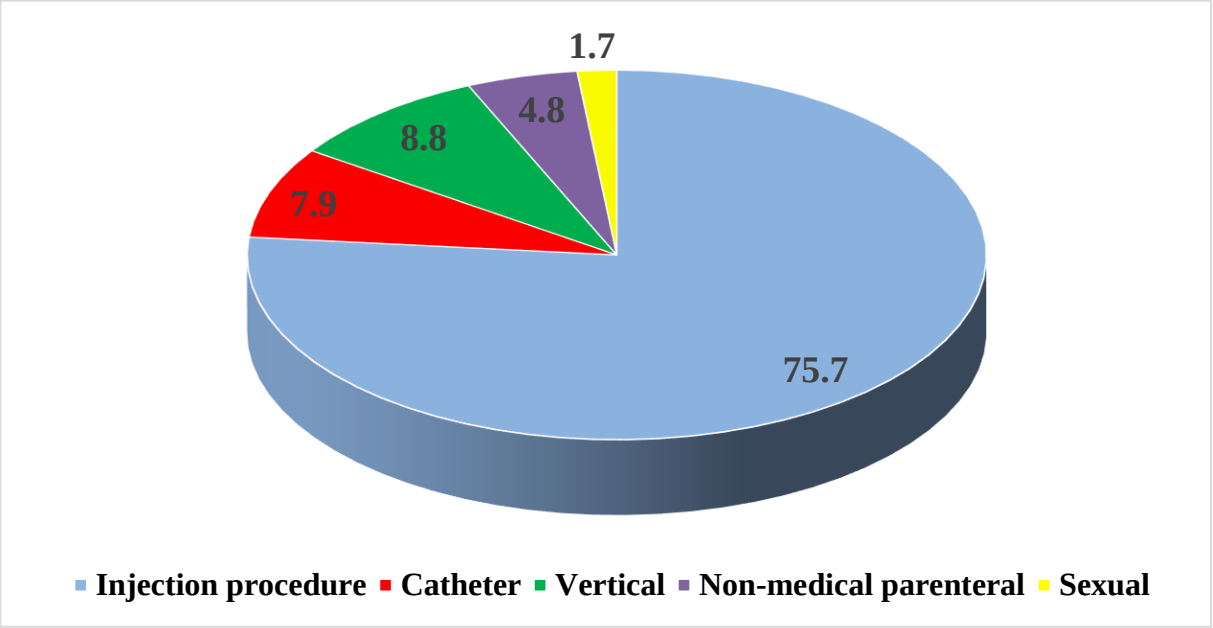

Figure 3. Comparative analysis of HIV transmission routes among girls under 18 years of age in the Republic of Uzbekistan (%)

The data presented in Figure 3 indicate that among girls under 18 years of age, HIV infection was mainly transmitted by medical parenteral route – 75.7%, vertical route – 8.8%, catheter route – 7.9%, non-medical parenteral route – 4.8% and sexually – 1.7%.

2-Table

Comparative analysis of the total number of women infected with HIV in the Republic of Uzbekistan, by age groups (%) (n=17915)

Administrative regions	Ages 18-24	Ages 25-29	Ages 30-39	Ages 40-49	Ages 50		Over 60 ages
the city of Tashkent	10.1	7.6	16.7	31.0	36.3		44.7
Andijan region	33.2	27.9	13.9	9.1	5.2		4.2
Bukhara region	1.4	2.0	2.7	3.9	4.6		4.2
Jizzah region	1	1.8	2,3	1.7	1.5		1.7
Kashkadarya region	2	3.5	4.2	3.0	2.7		3.8
Navoiy region	0.2	0.9	0.9	0.8	0.9		0.8
Namangan region	9	10.2	3.6	1,2	1.8		1
Samarkand region	6.4	7.5	12.0	8.9	8.9		9.5
Surkhandarya region	9.3	10.7	5.5	3.3	1.8		1.5
Syr Darya region	4.4	2.4	4.4	5.2	4.4		4.4
Tashkent region	8.6	9.4	18.2	19.0	18.2		14.8
Fergana region	11.2	9.8	9.1	5.4	5.1		2.8
Khorezm region	2.5	3.8	4.0	4.7	5.5		4
Republic of Karakalpakstan	0.6	1.8	1.8	2.0	2.4		2

Table 2 presents the results of a comparative analysis of the total number of women infected with HIV in the Republic of Uzbekistan by age groups, from which it follows that 33.2% of women aged 18-24 years and 27.9% of women aged 25-29 years lived in the Andijan region, 18.2% of women aged 30-39 years - in the

Tashkent region, 31.0% of women aged 40-49 years, 36.3% of women aged 50 years and 44.7% of women aged 60 years and older - in the city of Tashkent. The incidence rate was recorded in Navoi region.

CONCLUSION

It is worth noting that in the Republic of Uzbekistan it is necessary to strengthen epidemiological control in areas at risk of HIV infection, establish a digitalization system for timely identification of the source of the disease, and carry out remote monitoring of population groups involved in migration. This modern technological system allows for remote social control of the mobile population. It is also necessary to regularly conduct explanatory work among vulnerable groups of the population on the use of disposable non-reusable products or high-quality sterilized products during injection procedures, as well as constantly monitor the level of knowledge and literacy of medical workers through a modern digitalization system to ensure that they acquire knowledge and skills.

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