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WHERE AND HOW DO POLISH PATIENTS CONTRACT HIV?

GDZIE I JAK POLSCY PACJENCI ZAKAŻAJĄ SIĘ HIV?

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STRESZCZENIE

Do niedawna niewiele badań w Polsce poświęcono związkowi między miejscem zamieszkania, poziomem edukacji a zakażeniem HIV. Osobom żyjącym z HIV, podczas ich spotkań, a także wizyt w ośrodkach referencyjnych rozdano anonimowe ankiety, w których pytano między innymi o miejsce zamieszkania i poziom wykształcenia osiągnięty na rok przed dowiedzeniem się o zakażeniu. Wśród pacjentów, którzy odpowiedzieli na pytania zawarte w ankiecie dominowały kobiety nabywające zakażenie poprzez przyjmowanie narkotyków w iniekcjach lub kontakty heteroseksualne. Przed zakażeniem większość osób przyjmujących narkotyki w iniekcjach, które odpowiedziały na pytania (66,4%) mieszkało na wsiach i w małych miastach (do 20 000 mieszkańców), zwykle razem z rodzicami, większość była słabo wykształcona (kontynuacja nauki lub ukończenie szkoły podstawowej lub zasadniczej zawodowej). Lepiej wykształcone były osoby, które nabyły zakażenie w następstwie kontaktów heteroseksualnych. W tej grupie nie obserwowano różnic w miejscu zamieszkania. Mężczyźni zakażeni w następstwie kontaktów homoseksualnych byli lepiej wykształceni, większość z nich mieszkała w Warszawie lub innych dużych miastach. Mimo wszystkich ograniczeń przedstawione wyniki sugerują, że większość zakażeń HIV w Polsce nabywana jest przez młodych ludzi mieszkających na wsiach i w małych miasteczkach, słabo wykształconych, co wskazuje na pilną potrzebę wzmocnienia profilaktyki HIV wśród młodych ludzi w Polsce.

Słowa kluczowe*: HIV, drogi zakażenia, przyjmowanie narkotyków, zachowania seksualne, poziom edukacji*

ABSTRACT

Until now, few studies have focused on the relationship between place of living, the level of education and HIV infection in Poland. The anonymous questionnaires containing questions about place of living and level of education one year before diagnosis of HIV infection were distributed among HIV-infected patients during their meetings or were sent to patients of the HIV/AIDS reference treatment centres in Poland. Among patients who responded to questionnaire women contracting HIV infection through injecting psychoactive drugs and by heterosexual contacts predominate. Prior to diagnosis, most injection drug users who responded to questionnaire (66.4%) lived in villages and small towns (up to 100,000 inhabitants), usually with parents, and the majority (69.8%) were poorly educated (still continued or already completed primary or basic vocational school). Better educated were those who contracted the infection trough heterosexual contacts. In this group, no differences were observed in relation to the place of living. HIV infected men who have sex with men were better educated, most of them lived in Warsaw and other large cities. Despite all the limitations, the findings suggest that majority of HIV infections in Poland are acquired by young people living in small towns and villages who are poorly educated. So the most urgent need exist to enhance HIV prevention amongst young people in Poland.

Key words: *HIV, transmission, drug use, sexual behaviour, education level*

INTRODUCTION

Since implementation of surveillance in 1985 till 30 April 2011, HIV infection was diagnosed in 14,474 Polish citizens, including at least 5,772 (39,9%) infected through injection drug use (data from the State Department of Hygiene). The incidence rate of HIV infection in Poland is considered to be relatively low and stable. However Poland borders on the east with the Russian Federation, and Ukraine where HIV infection now increasing as one of the fastest rates in the world (1, 2).

Funding allocated to HIV prophylaxis in Poland are very limited. Preventive programs coordinated by the National AIDS Centre, an agency of Polish Ministry of Health, usually focus on large cities, where a lot non-governmental organizations, conducting preventive action and supporting people living with HIV also operate. Social campaigns conducted in the mass media urge people to undergo tests for the presence of anti-HIV antibodies. However, a still common belief that HIV

equals AIDS and AIDS equals death scares them off. AIDS is still frequently diagnosed almost at the same time as HIV. In 2008, 99 out of 159 AIDS cases (62.3%) were diagnosed within 3 months after HIV infection had been recognised (3).

Until now, few studies have focused on the relationship between place of living, the level of education, and the incidence rate of HIV in Poland. In Russia HIV prevalence is strongly associated with the process of urbanisation, particularly in already highly-urbanised regions (1). Bärninghausen et al., who performed their research in South Africa, have demonstrated that every additional year of education reduces the risk of seroconversion by 7% (4). Hargreaves et al. have found that education protects women but not men against HIV infection (5). In Denmark, better educated people more frequently underwent tests for anti-HIV antibodies on their own initiative (6).

Epidemiologic data collected in Poland refer mostly to possible modes of HIV transmission, age, gender and province where the patients live. Data concerning education and place of living before being diagnosed HIV-positive are their significant supplementation.

METHODS

In order to compare the life of HIV-positive patients before and after they learnt they were infected, we designed a questionnaire in consultation with sociologists, psychologists, doctors concerned with anti-HIV therapy and HIV-infected patients themselves. The questionnaire forms were distributed among HIV-infected patients during their meetings (at the Polish National Meeting for People Living with HIV and at the "Salon of Acceptance" in Warsaw, a monthly meeting of those who have recently learnt that they are HIV positive), or were sent to patients of the HIV/AIDS reference centres in (alphabetic order) Białystok, Bydgoszcz, Chorzów, Kraków, Łódź, Poznań, Szczecin, Warszawa (Medical University Department of Infectious Diseases, Provincial Hospital of Infectious Diseases) and in Wrocław, how it was described earlier (7). The questionnaires were not discussed with patients. The respondents were asked to complete them at home and send them back in the enclosed envelopes to the person conducting the research. The patients were asked about possible modes of HIV transmission, as well as education and place of living one year before diagnosis. Within question about place of living there was a closed question about living in Warsaw, the capital of Poland, because Warsaw being the largest city in Poland is considered to have higher numbers of intravenous drug users (IDU) and men who have sex with men (MSM) compared to other cities. The questionnaires were distributed in the period of June 2004 - May 2005.

Statistical analysis was performed using SPSS 11.5 PL program.

The Ethical Committee at the Medical University of Białystok approved the study protocol.

RESULTS

The response was obtained from 321 subjects out of 500 questionnaires prepared (64.2%). Demographic characteristics of the patients have been presented in Table I.

Table I. Demographic characteristics of patients (n = 321)
Tabela I. Charakterystyka demograficzna pacjentów (n = 321)

Gender		
women: 117 (36.4%)		
men: 201 (62.6%)		
lack of data: 2 (0.9%)		
Age at the time of questionnaire completion:		
mean 35.29 ± 8.0 years (min – 21 years, max – 65 years)		
Age at the time of HIV diagnosis:		
mean 27.8 ± 7.9 years (min – 15 years, max – 64 years)		
Possible modes of HIV transmission*:		
Injecting narcotic drugs:		190 (68.9%)
	women:	80 (68.4% out of 117 examined women)
	men:	110 (54.7% out of 201 examined men)
heterosexual contacts:		
		88 (37.8%)
	women:	47 (40.2% out of 117 examined women)
	men:	41 (20.4% out of 201 examined men)
homosexual contacts:		
		61 (23.5%), (29.9% out of 201 examined men)
blood transfusion:		2 (0.6%)
others:		5 (1.6%)**
unknown:		3 (0.9%)
Education before the diagnosis of HIV infection (n = 319):		
primary:		85 (26.5%)
basic vocational:		101 (31.7%)
secondary comprehensive:		59 (18.5%)
secondary vocational:		49 (15.4%)
higher:		25 (7.8%)
Place of living prior to contracting HIV (n = 319):		
village, town to 20,000 inhabitants:		65 (20.4%)
town from 21,000 to 100,000 inhabitants:		108 (33.9%)
city above 100 000 inhabitants:		99 (31.0%)
Warsaw:		47 (14.7%)

*sometimes patients admitted more than one way of contracting infection, with injection drugs and heterosexual contacts being most common.

** tattoos made using unsterile equipment (2 men), social contacts with HIV-infected flatmates (2 men), sharing a shaver with an infected person (1 woman).

Gender vs. modes of HIV transmission

The use of injection drugs as a possible way of HIV infection was reported by 80 women (68.4% of female respondents) and 110 men (54.7% of male respondents), (statistically significant difference in Chi^2 test $p = 0.015$).

Among 88 persons who were probably infected by heterosexual contacts were 47 women (53.4%), including three who contracted the disease from their husbands, who were their first and only sexual partners. Heterosexual contacts were responsible for HIV infection in 41/88 men who were heterosexually infected (46.6%), (statistically significant difference in Chi^2 test $p < 0.001$).

Homosexual contacts were a likely cause of HIV infection in 62 men (29.9%); none of the female respondents reported such a possibility (statistically significant difference in Chi^2 test $p < 0.001$).

Education vs. modes of HIV transmission

Differences were found in the level of education of patients before and after HIV infection according to mode of HIV transmission and patients' gender.

Prior to HIV infection, women were less educated than men, although the differences were not statistically significant (in Chi^2 test $p = 0.097$).

Before the diagnosis of HIV infection more male respondents were educated in basic vocational schools (34.0% - men and 26.7% - women, respectively) and in secondary vocational schools (18.0% - men and 11.2% - women), whereas more women graduated from primary schools (34.5% - women and 22.0% - men), (statistically significant differences in Chi^2 test $p = 0.036$). Women studied in comprehensive secondary schools (19.8%) more frequently than men (18.0%). The percentage of subjects with higher education was similar (8.0% - men and 7.8% - women).

Prior to HIV infection, 61.7% of men and 47.4% of women ceased to attend school (statistically significant difference in Chi^2 test $p = 0.019$).

Patients who were still at school before being infected were slightly younger (mean: 25.84 ± 7.46 years) as compared to those who did not continue their education (mean: 29.36 ± 7.96 years), (statistically significant difference in Levene's test: $p < 0.001$).

The place of living vs. modes of HIV transmission

Before diagnosis, out of persons giving settling in small cities (20 000 – 100 000 inhabitants) 66,4% became infected through injections, out of living on villages and in small towns (to 20 000 inhabitants) – 61.5%. The fewest of them lived in Warsaw. The correlation between place of living and HIV infection through psychoactive drug injection was close to statistical significance (in Chi^2 test $p = 0.079$).

No correlation was found between infection transmission due to heterosexual contacts and the place of living $p = 0.874$). However, homosexual contacts were the most frequent cause of HIV infection in patients living in Warsaw (40.4%) and in large cities (20.2%), more seldom in villages (13.8%) and in small towns (12.1%), (statistically significant difference in Chi^2 test $p < 0.001$).

As many as 51.6% of men and 48.4% of women were village and small town inhabitants before the diagnosis of HIV infection. The larger the town the higher the percentage of men: 60.4% of HIV-infected men lived in towns with the population of 20,000-100,000, 67.3% in cities with the population of 100,000 - over 500,000, most in Warsaw – 74.5% (in Chi^2 test $p = 0.062$).

Prior to being HIV-infected, the majority of subjects lived together with parents. Among them were 63.1% of village and small town inhabitants and 62.6% of those living in towns with the population of 20,000-100,000; in big cities the percentage was 41.4%, being the lowest in Warsaw (23.4%). Of those sharing a flat with parents before infection, 70.8% were IDU, 23.6% contracted the virus through heterosexual contacts and 11% were MSM. Of the HIV-infected flat owners, 36.2% contracted the infection through injectiing drugs, 46.6% by heterosexual contacts and 24.1% by homosexual contacts. Differences related to the place of living vs. mode of HIV transmission were statistically significant (in Chi^2 test $p < 0.001$ do < 0.010).

Most of those who were flat owners lived in Warsaw prior to being infected (29.8%). Also the largest number of the respondents who admitted living in a place defined as "other" in the questionnaire (i.e. at the railway station, staircase, allotments, etc.) were from the capital city. Statistical analysis showed that the differences between living conditions and the size of town are significant (in Chi^2 test $p < 0.001$).

DISCUSSION

In many countries, HIV/AIDS epidemic, as well as scientific research and preventive measures it involves are mostly associated with large cities, in which the infection spreads among MSM and injection drug users IDU. However HIV/AIDS epidemics spreads also in smaller towns. In Italy for example risky heterosexual behaviors occur more frequently among people living in central and southern Italy than among people from the north, which is determined by important cultural differences (8).

Among the study respondents, men constituted the predominant group (62.6%). According to Polish registry of HIV infections majority of HIV infections in 2006 concerned men, and women constituted 22.8% of

the registered cases (3). Injection drug use was the most common possible mode of contracting HIV infection (68.9%). The mean age of patients at the moment of diagnosis was 27.8 years, which is consistent with the all-Polish data for the years 1999 – 2004 (9). However, among study respondents women predominated both among those being infected through injection drugs (68,4% female respondents) and heterosexual contacts (53,4% among 88 patients who were infected by heterosexual contacts); they were also less educated than men. Three of the female respondents admitted being infected by their husbands, who were their first and only sexual partners. The problem of women who do not realize that their husbands are HIV-positive has been emphasized at the beginning of AIDS epidemic (10). Sexual partners transmitting the virus to their female partners are not always aware of being infected, as the risk of transmission is greater in the very early phase (acute, primary infection) than in a later asymptomatic stage (11). HIV infection is transmitted in sexual contacts easier to women than to men (12), which accounts for a larger number of women infected into this way. Although HIV is not the most infectious virus, cases of HIV transmission to women after one unprotected heterosexual contact have been reported (13).

Against the belief that taking injection drugs is most common in the suburbs of large cities, the majority of our respondents infected in this way lived in villages and small towns. However, no correlation was found between infections due to heterosexual contacts and the place of living. Homosexual contacts were the most common causes of infection in Warsaw and large cities. MSM lived more frequently in large cities and in the capital city, which has been confirmed in other European countries (6). In large cities, men who have sex with men have a possibility to take advantage of HIV/AIDS preventive actions and support groups for seropositive men, which is not the case in smaller towns.

Not many data referring to the place of living of HIV/AIDS patients prior to contracting the virus in developed countries are available in medical literature. Reports from the USA indicate that the infection rate increases in villages and small towns, which is due to poverty, lack of psychological support system, necessity of travelling a long distance to receive medical care and intolerance towards otherness (14, 15). HIV and HIV incidence among women continues to escalate in the United States and globally. In Poland the highest percentage of women with HIV infection in 2008 occurred in 3 voievodships (administrative areas) with low level of urbanization (lubuskie - 37.5%, warmińsko-mazurskie - 31.0%, zachodniopomorskie - 30.0%), (3). We revealed that HIV infection frequently affects village and small town inhabitants (up to 100,000), women taking injection drugs and having heterosexual contacts. Our findings also indicate that living with parents or caregivers under one roof does not prevent being addicted nor contracting HIV infection through injection drugs or sexual contacts. It is not only Poland where parents cannot talk to their children about risks associated with intravenous drug use or early sexual initiation (16). Schools also fail to provide adequate information (17).

However, the data obtained in the current study have some limitations. The patients who completed the questionnaire were members of a support group or had a regular contact with their doctor, a specialist in HIV therapy in one of the ten reference centres. Thus, our respondents seem to cope with the diagnosis of HIV and living with the virus, and are aware of therapeutic potentials, therefore don't constitute the representative group for Polish people living with HIV.

In spite of all limitations the achieved results indicate the urgent need to enhance the preventive actions among women, less educated subjects as well as village and small towns inhabitants, and suggest the necessity of education, mostly among women, in the field of sexuality.

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