

Risk Factors for HIV and Other Sexually Transmitted Diseases Among Adolescents in St. Petersburg, Russia

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Context: Over the past several years, there have been sharp increases in the prevalence of HIV and other sexually transmitted diseases (STDs) among young people in Russia. Very little is known about Russian adolescents' behaviors and attitudes that might influence their risk of acquiring these infections.

Methods: A 1995 survey of 533 students aged 15–17 attending eight St. Petersburg high schools assessed their sexual risk practices, AIDS-specific attitudes and beliefs, sexual relationship patterns and preferences, and social characteristics.

Results: Overall, 39% of students were sexually experienced, and these young people had had, on average, 3.4 sexual partners. Only 29% of sexually experienced students said they consistently used condoms, and 29% said they never did. Unprotected vaginal intercourse was the predominant and preferred sexual practice; it also was the practice that most often occurred with students' last sexual partner. In all, 28% of students defined "safer sex" as condom use. Many young people believed that AIDS is a threat only to members of particular "risk groups"; relatively few believed that they could get AIDS (17%) or said that AIDS information had influenced their sexual behavior (29% of those who were sexually experienced). Females were more likely than males to prefer having an exclusive partner, and males were more likely to prefer having casual partners.

Conclusions: Educational and behavioral interventions are urgently needed to help young people in Russia avoid HIV and other STDs. Risk and social characteristics identified in this study can help to guide the development and tailoring of risk reduction interventions.

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Rising rates of HIV, other sexually transmitted diseases (STDs) and drug use in Russia suggest that a major HIV epidemic is about to unfold there and that, as in many other countries, it will disproportionately affect young people. The development of effective programs aimed at preventing HIV and other STDs among teenagers requires a foundation of knowledge concerning their sexual behavior and its social and cultural context. Yet, much is not yet known about the behavioral and social issues surrounding the risk of these diseases among adolescents in post-Soviet Russia. In this article, we describe research undertaken to help assess the levels of HIV risk behavior and characterize psychosocial factors related to risk in a large sample of adolescents in St. Petersburg. Russia's largest city, St. Petersburg has the country's second highest number of HIV cases and is experiencing a major, sustained outbreak of other STDs among young people.

Background

Whereas HIV epidemics in Western nations and developing countries have long been recognized and are well studied, HIV in the eastern and central European coun-

tries of the former Soviet Union has only recently emerged as a grave public health threat. Throughout the first decade of AIDS, the number of HIV infections reported annually in Russia was small, and many Soviet health authorities doubted that AIDS would ever constitute a serious public health problem in their country. The threat of HIV seemed distant in Soviet-era Russia, given the context of limited personal freedoms, tight governmental and police controls related to drug use and prostitution, officially conservative values related to sexuality, and an authoritarian but effective approach to public-sector STD surveillance, treatment and contact tracing.

However, the sudden breakup of the Soviet Union and the rapid, tumultuous changes in the social, economic and cultural landscape of post-Soviet Russia dramatically altered the picture. The sharpest increases in the incidence of HIV and AIDS anywhere in the world are occurring in former Soviet-bloc countries of central and eastern Europe.¹

Until 1995, only 1,062 HIV infections had been reported throughout Russia.² However, the number of HIV infections

officially recorded then began doubling annually; by November 2000, the cumulative total had reached 83,000.³ Yet, because the effectiveness of HIV surveillance is limited and the incidence of infection is rising sharply within population segments at highest risk, the officially recorded number of HIV infections in Russia is believed to represent only 10–15% of the actual number.⁴ Some projections suggest that the cumulative number of infections may rise to two million by the end of 2001.⁵

To date, the majority of HIV infections officially reported in Russia have been among injection-drug users.⁶ However, there is strong reason to believe that a rapid transition to a predominant pattern of sexually transmitted HIV infection will soon take place. For example, in the late 1980s, the prevalence of syphilis was four cases per 100,000 population in Russia; by the mid-1990s, that rate had soared to 263 per 100,000—a roughly 62-fold increase.⁷ The gonorrhea rate rose from 75 cases per 100,000 in 1987 to 296 per 100,000 in 1997.⁸ Chlamydia and trichomonas have also had high prevalence rates—278 and 497 infections per 100,000, respectively, for samples in St. Petersburg in 1996.⁹

Furthermore, the greatest increase in STD rates in Russia—a 90-fold rise since the mid-1980s¹⁰—has occurred among teenagers. The rise is most dramatic among adolescents younger than 17, whose syphilis rate increased 99-fold dur-

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ing the 1990s.¹¹ STD rates of young people in Russia are now among the highest of any developed country.¹²

A variety of factors probably account for these patterns. In the post-Soviet years, Russia has experienced sustained and severe economic upheavals, including the failure of its banking system, currency devaluation, corruption and the emergence of widespread joblessness and poverty. While economic dislocation has affected almost all segments of Russian society, its impact may be especially great on young people, many of whom have become fatalistic and hold out little hope for the future.¹³

Underscoring this situation, large rises have been found in the prevalence of illicit drug use, including opiate injection, among teenagers and young adult Russians. Of more than 7,000 young people aged 13–25 surveyed in St. Petersburg in 1997, 36% used illicit drugs, and 10% did so daily.¹⁴ Almost one-third of injection-drug users in the city are younger than 19, and a large number of young injection-drug users there have concurrent, active and untreated STDs,¹⁵ increasing the likelihood of an efficient and rapid HIV transmission “bridge” from these young people to their sexual partners. These social health problems emerged at a time when Russia’s economic difficulties and its trouble moving from state-controlled to private-sector services limited the resources available to improve the public health infrastructure for drug abuse prevention and treatment, STD diagnosis and care, and the capacity to address other health problems facing the young.

The Soviet period in Russia was officially conservative and traditional in areas related to sexual behavior. Since the end of the Soviet era, and with increased international contact and greater opportunities for social and sexual freedom, young people’s sexual attitudes have changed, reflecting liberalized values more typical of the West. However, unlike their counterparts in many western European countries, few young people in Russia are exposed to information about sexuality, contraception and STD prevention at an early age.¹⁶

In spite of soaring STD rates among Russian teenagers and now the grave threat posed by HIV, few published empirical reports have examined sexuality-related attitudes, beliefs and behavior among Russian youths. Surveys of large samples of 12–19-year-olds in the schools of large Russian cities between 1993 and 1995 found that more than one-half of

males and one-third of females aged 16–17 were sexually experienced, and that levels of sexual activity rose during that two-year period.¹⁷

In a survey of 370 St. Petersburg school students aged 14–17, 20% of females and 31% of males reportedly were sexually experienced.¹⁸ That study found evidence of widespread lack of accurate information about AIDS risk and negative attitudes toward condoms. Fifty-two percent of sexually experienced males felt that condoms are an effective form of contraception, 89% felt that they reduce sexual pleasure, 40% believed that they are necessary only with casual partners and 31% said that a condom can be used multiple times if it is washed. Among sexually experienced females, 49% did not feel that condoms are always needed, 32% said that condoms are unnecessary during relations with a partner who is loved, and 41% felt that the same condom, if washed, could be used repeatedly. Forty percent of sexually experienced students had never used a condom.

A more recent study of unmarried young people in vocational training schools found that 71% were sexually experienced and that most had first had intercourse before the age of 15.¹⁹ Fifty-one percent had had multiple partners in the past year. Only 12% of sexually experienced young people said that they consistently used condoms, while 74% rarely or never used them.

Even among university students, misconceptions about AIDS are prevalent. A survey conducted in 1999 found that 70% of Russian college students believe that they do not face any serious risk of contracting HIV during casual sexual encounters.²⁰

Methods

Sample and Data Collection

In 1995, we conducted a survey among students in grades 9–10 at eight high schools in St. Petersburg. Russian public schools consist of 10 grades, and enrollment is obligatory. We used two sampling criteria to select study high schools that represented socioeconomic diversity and differences in types of schools. First, we selected schools that were located in diverse areas with respect to residents’ income levels, the prevalence of drug use in the community and other risk indicators. Second, we selected both regular and specialized high schools: Five schools had standard high school curricula, and three offered advanced education in scientific fields. Each school had approximately two

ninth- and two 10th-grade classes, mostly including young people aged 15–17. The mean number of students in each class was 22.2.

A field team composed of male and female university students and led by a field supervisor from the Sociology Department of St. Petersburg State University collected the data. Team members contacted the administrations of selected schools to solicit their permission to conduct the survey. Three school administrations declined, and these schools were replaced with others in the same areas. School administrators scheduled data collection time periods for each class, after or between regular lessons. Every student in a class was asked to complete the group-administered questionnaire. More than 95% of students who were asked to participate did so.

Before administering the survey, members of the data collection team described to participants the study’s purposes, told them the name of the organization conducting the survey and emphasized the anonymity of responses. Students were informed that their participation was voluntary and that they could return their questionnaires blank. Researchers provided private assistance in answering participants’ questions when needed, made sure that students sat far enough apart to allow confidentiality and ensured that students did not talk with one another while completing the questionnaire. The survey required approximately 45 minutes for most participants to complete.

The survey sample consisted of 533 students aged 15–17, whose mean and median ages were 16 years, with an interquartile range (IQR) of zero. Reflecting the gender distribution of St. Petersburg’s adolescent public school population, 39% of participants were males and 61% females. Ninety-five percent of students said they were single and lived with their parents, 4% were single and lived alone, and 1% were married.

Measures

The survey measures were designed specifically for this study, although parts of the questionnaire were adapted from previous research.²¹ Measures, formats and retrospective time intervals for the assessment of sexual practices were similar to ones shown to be valid in past studies of adolescent risk behavior.²² The questionnaire was developed and presented in the Russian language; in this article, we present literal translations of questions, although some translations lack the nuances

Table 1. Mean value of sexual risk factors, or percentage of sexually experienced 15–17-year-old students with risk characteristics, by gender, St. Petersburg, Russia, 1995

Variable	Total (N=208)	Males (N=75)	Females (N=133)	t or χ^2
Means				
Age at first sex	14.7	14.8	14.6	.67 (206)
Lifetime no. of partners	3.4	3.0	3.6	-.90 (150)
No. of partners in past year	1.7	1.6	1.8	-.91 (206)
Percentages				
Frequency of condom use				6.32 (3)
Always	28.5	27.8	28.9	
Always only with casual partners	16.7	25.0	11.4	
Sometimes	25.8	20.8	28.9	
Never	29.0	26.4	30.7	
Past treatment for an STD	5.3	2.7	6.8	4.20 (2)
Ever pregnant	na	na	3.8	na
Ever made someone pregnant	na	4.0	na	na
Sold sex for money	2.4	0.0	3.8	na
Bought sex	1.4	2.7	0.8	na
Current relationship status				15.47 (3)***
Exclusive partner	32.5	25.0	36.5	
Regular and casual partners	11.9	7.4	14.3	
Casual partners only	16.0	29.4	8.7	
No current relationship, seeking a regular partner	39.7	38.2	40.5	
Duration of longest sexual relationship				15.85 (6)*
Several years	12.3	9.0	14.1	
About one year	29.2	19.4	34.4	
Several months	41.0	43.3	39.8	
Several weeks	7.7	13.4	4.7	
Several days	5.6	7.5	4.7	
Several hours	4.1	7.5	2.3	

*p<.05. ***p<.001. Note: na=not applicable.

of the originals. A pilot version of the questionnaire was completed by 50 teenage university students, and revisions were made to ensure clarity and applicability.

• *Sexual relationships.* Students were asked to indicate their age at first sex, what factors they believed were responsible for their first sexual contact, their lifetime number of sexual partners, their number of partners in the past year, their current relationship status and the duration of their longest sexual relationship.

• *Sexual risk practices.* Respondents were asked to choose from among four options to describe their frequency of condom use: “always,” “sometimes,” “never” and “only with casual partners.” Participants were asked the kinds of sexual practices they preferred, the practices in which they frequently engaged and the practices in which they had engaged with their most recent partner. Respondents could choose one or more of the following practices: unprotected vaginal intercourse, vaginal intercourse using contraceptives, sex during a woman’s menstrual period, anal sex, mutual oral sex, either giving or receiving oral sex, and mutual masturbation.

• *Sexual trauma and coercion.* Respondents were asked whether they sometimes enjoyed hurting someone they liked and whether being hurt by someone they liked

gave them pleasure. Participants were asked if they ever had fantasies in which they were rapists or in which they were raped. They were then asked whether they had ever been raped; response options were “yes,” “no” and “it’s difficult to answer.” The same options were used for a question on whether participants ever had taken part in perpetrating a rape. Because “difficult to answer” in this context often signifies a history of trauma, this response was scored as an affirmative.

• *Other risk-related behaviors.* Participants indicated whether they had ever paid someone or ever been paid by someone for sex, and whether they had ever been treated for an STD.

Females were asked whether they had ever been pregnant, and males whether they had been responsible for a pregnancy. Respondents described their sexual orientation using a five-option scale ranging from exclusively heterosexual to exclusively homosexual. They were then asked whether they had had same-gender sexual contacts.

• *Sexuality attitudes and concerns.* Participants described the role of sex in their life, indicating whether it “plays a major role,” “is not important,” “is a source of unpleasant feelings,” “creates fear due to the possibility of physical pain” or “is associated with something dirty and shameful.” They then indicated sources of worry during sex; possible responses were “having my relationships discovered,” “getting an STD,” “getting AIDS” and “lack of emotional response.”

• *AIDS-related knowledge and safer-sex beliefs.* Participants were asked whether they had first learned about AIDS before or after becoming sexually experienced, whether they felt personally at risk of developing AIDS and whether information about AIDS had influenced their sexual life. To assess AIDS-related knowledge, we asked students whether they believed that having sex only with partners they knew well would protect them from AIDS and whether only members of high-risk

groups are at risk of HIV. Students indicated whether they agreed that condoms are not important if someone trusts his or her partner. Finally, an open-ended question asked participants to describe what “safer sex” means. These responses were classified into practices that would be effective in protecting against HIV and other STDs (e.g., condom use) and those that would not (e.g., use of birth control pills or withdrawal before orgasm).

• *Sexual relationship preferences.* Participants were asked to characterize their preferred type of sexual partner as one of the following: an exclusive partner, a very casual partner, a partner to whom they felt “spiritually close,” a person who can be cared for or a person to whom they were attracted only because of his or her appearance. Using a checklist of options, students described strategies to enhance their sexual desire, how they prefer to meet new partners, whether they actively seek out partners and whether they wait for others to pay attention to them. Participants could choose more than one response option for describing how they enhance their sexual desire and how they meet new partners.

Statistical Analysis

Responses were entered into a computer database for statistical analyses using SPSS 10.0. Frequencies, means, medians and IQRs for each variable were calculated. To compare gender and other group differences, we performed univariate analyses, using chi-square tests for categorical variables and t-tests for continuous variables.

Results

Sexual Risk Factors

Overall, 39% of students in the sample—36% of males and 41% of females—reported that they had had sex. These young people’s mean age at first sex (Table 1) was 14.7 years (median=15, IQR=2). They reported a mean of 3.4 sexual partners in their lives (median=2, IQR=3) and 1.7 partners in the past year (median=1, IQR=1). Fifteen percent of sexually experienced participants had had five or more partners in their lifetime, and the same proportion had had multiple partners in the past year (not shown); these rates were comparable among males and females. Among those with sexual experience, 36% of females and 17% of males had had at least four partners.

When asked about their patterns of condom use, 29% of sexually experienced students reported that they always used condoms, and the same proportion said that they never did (Table 1). Seventeen per-

cent reported that they always used condoms with casual partners, and 26% said they sometimes used condoms.

Among sexually experienced participants, 5% reported past treatment for an STD, 4% of females reported a past pregnancy and 4% of males said they had made a female pregnant. Small proportions of sexually experienced students reported that they had sold sex to get money (2%) or had bought sex (1%).

Sexually experienced males and females differed significantly with respect to their current relationship status: Females were more likely than males to be in an exclusive partnership (37% vs. 25%), and males were more likely than females to report having casual partners only or in addition to a regular partner (37% vs. 23%). Nearly three-fifths of students reported that their longest sexual relationships had lasted no more than several months, and males reported significantly shorter relationship durations than females.

Sexual Practices

Forty percent of sexually experienced students reported unprotected vaginal intercourse as their preferred sexual practice (Table 2). A significantly higher proportion of males (52%) than of females (33%) preferred this practice. Similarly, 37–38% of sexually experienced young people said that they frequently had unprotected vaginal intercourse and that they engaged in this practice with their most recent partner. Forty-five percent of males reported that unprotected intercourse was a frequent practice, compared with 33% of females, but this difference was only marginally significant ($p=.08$).

Vaginal intercourse with some form of contraception and vaginal intercourse during the woman's menstrual period both constitute strategies for pregnancy prevention. Protected intercourse was a preferred activity for 38% of sexually experienced participants, was a frequent practice of 27% and occurred with 24% of students' most recent partners. Vaginal intercourse during the woman's period was the preferred practice of 27% of these participants. Some 32% of females, but only 19% of males, reported this as their preferred sexual activity; this difference was statistically significant.

Only 2–3% of sexually experienced respondents indicated that anal sex was their preferred sexual practice, a frequent practice or an activity with their most recent partner. Twenty-six percent indicated that mutual oral sex was their preferred sexual activity, 19% that it was a fre-

Table 2. Percentage of sexually experienced students who prefer various sexual practices, engage in them frequently and engaged in them with their most recent partner, all by gender

Gender	Vaginal intercourse			Anal intercourse	Oral sex		Mutual masturbation
	Unprotected	Protected	During menstruation		Mutual	Giving/receiving	
Prefer	39.9	38.0	26.9	2.9	25.5	10.1	14.9
Males	52.0	40.0	18.7	2.7	25.3	10.7	9.3
Females	33.1	36.8	31.6	3.0	25.6	9.8	18.0
χ^2	7.16 (1)**	0.20 (1)	4.06 (1)*	0.02 (1)	0.00 (1)	0.04 (1)	2.87 (1)
Engage in frequently	37.5	26.9	19.2	2.4	18.8	7.7	11.5
Males	45.3	32.0	12.0	2.7	14.7	4.0	6.7
Females	33.1	24.1	23.3	2.3	21.1	9.8	14.3
χ^2	3.07 (1)	1.54 (1)	3.95 (1)	0.04 (1)	1.28 (1)	2.25 (1)	2.73 (1)
Engaged in with last partner	37.0	23.6	14.4	3.4	16.8	13.9	14.4
Males	41.3	29.3	12.0	4.0	14.7	9.3	8.0
Females	34.6	20.3	15.8	3.0	18.0	16.5	18.0
χ^2	0.94 (1)	2.17 (1)	0.56 (1)	0.15 (1)	0.39 (1)	2.08 (1)	3.92 (1)*

* $p<.05$. ** $p<.01$. Note: Percentages add to more than 100% because students could give more than one response.

quent practice and 17% that it occurred with their most recent partner. Ten percent of sexually experienced respondents reported that they prefer only giving or receiving oral sex, 8% said that this is a frequent practice and 14% that it occurred with their most recent partner.

Females tended more often than males to report mutual masturbation as a preferred practice (18% vs. 9%) and as a frequent practice (14% vs. 7%), but the differences did not achieve statistical significance ($p=.09$ and $p=.10$, respectively). Females and males did, however, differ significantly in the proportions saying that they practiced mutual masturbation with their most recent sexual partner (18% and 8%, respectively).

AIDS Knowledge and Attitudes

The vast majority of sexually experienced students (91%) reported that they had learned about AIDS before beginning their

sexual life (Table 3). However, misconceptions about the disease were common. Twelve percent of all participants believed that having sex with well-known partners protects against getting AIDS. Males appeared to be more likely than females to hold this belief (13% vs. 11%), but the difference was only marginally significant. In addition, 17% of participants believed that condoms are not important if someone trusts his or her partner; males were significantly more likely than females to hold this belief (22% vs. 14%). When asked the meaning of safer sex, only 28% of students correctly specified condom use; this proportion was significantly higher among females (30%) than among males (26%).

Males believed more strongly than females that HIV risk is limited to certain groups—prostitutes (39% vs. 26%), homosexual men (33% vs. 16%) or injection-drug users (29% vs. 15%). Thirteen percent

Table 3. Percentage of students, by AIDS-related knowledge, attitudes and beliefs, according to gender

Variable	Total	Males	Females	χ^2
Learned about AIDS before having sex†	90.9	88.0	92.5	1.93 (3)
Believe that sex with well-known partners protects against getting AIDS	11.5	12.8	10.7	5.90 (2)
Believe that condoms are not important with a trusted partner	16.7	21.8	13.5	6.50 (2)*
Describe safer sex as condom use	28.3	26.1	29.8	9.41 (2)**
Believe that HIV risk is limited to:				
Prostitutes	30.8	39.1	25.5	11.11 (1)****
Homosexual men	22.9	33.3	16.3	20.92 (1)****
Injection-drug users	20.3	29.0	14.7	15.94 (1)****
Blood donors	12.9	15.5	11.3	1.90 (1)
Persons with multiple partners	51.2	49.3	52.5	0.51 (1)
Others/not only these groups	32.6	27.1	36.2	4.81 (1)*
Information about AIDS influenced sexual life†	29.1	23.6	32.3	1.89 (2)
Perceive personal vulnerability to AIDS	16.9	17.4	16.6	0.64 (3)

* $p\leq.05$. ** $p\leq.01$. *** $p\leq.001$. **** $p\leq.0001$. †Based on sexually experienced participants only.

Table 4. Percentage of students, by social and relationship characteristics, according to gender

Characteristic	Total	Males	Females	χ^2
Reason for first sex†				
Falling in love	48.6	36.0	55.6	7.41 (1)**
Sexual desire	43.8	65.3	31.6	22.20 (1)****
Curiosity	24.5	20.0	27.1	1.29 (1)
Loneliness	2.9	2.7	3.0	0.02 (1)
Partner pressure	13.5	5.3	18.0	6.65 (1)**
Being drunk	11.1	13.3	9.8	0.62 (1)
Rape	1.4	0.0	2.3	1.72 (1)*
Desire to feel grown up	7.2	5.3	8.3	0.62 (1)
Desire to gain independence from family	2.4	0.0	3.8	2.84 (1)
Desire to create a family	0.5	0.0	0.8	0.57 (1)
Preferred sexual partners†				
Exclusive	60.1	52.0	64.7	3.21 (1)
Attractive	25.5	38.7	18.0	10.74 (1)****
Spiritually close	23.1	20.0	24.8	0.63 (1)
Very casual	7.7	13.3	4.5	5.26 (1)*
Persons who can be cared for	2.9	6.7	0.8	5.99 (1)*
Preference for finding partners				
Seek out	8.4	15.9	3.7	24.62 (1)****
Wait to be sought out	34.1	19.8	43.3	30.95 (1)****
Do both	52.3	57.5	49.1	3.59 (1)

*p≤.05. **p≤.01. ***p≤.001. ****p≤.0001. †Based on sexually experienced participants only. Notes: In the first two panels, percentages add to more than 100% because students could give more than one response. In the bottom panel, percentages add to less than 100% because of missing data.

of all students believed that only blood donors are at risk of acquiring HIV, and 51% that risk is limited to persons with multiple sexual partners; males and females did not differ in their perceptions of these groups' risks. Thirty-three percent of participants believed that anyone could be at risk for HIV; females were significantly more likely than males to hold this view (36% vs. 27%).

Among sexually experienced students, 29% reported that information about AIDS influenced their sexual life. However, only 17% of all participants said that they perceived any personal vulnerability to the disease.

Sexual Trauma, Control and Coercion

Two percent of students said that they had participated in a rape, and 6% reported that they had been raped. Rape was reported by 10% of females and 1% of males ($\chi^2=16.55$, $df=2$, $p=.0001$). Higher proportions of students reported having fantasies about rape. Twenty-four percent of males and 5% of females had had fantasies about raping someone ($\chi^2=45.21$, $df=1$, $p=.0001$), while 22% of females and 2% of males had had fantasies about being raped ($\chi^2=42.06$, $df=1$, $p=.0001$).

Overall, 24% of students said they got pleasure from hurting someone they liked. Females (30%) were more likely than males (14%) to report this ($\chi^2=19.79$, $df=1$, $p=.0001$). Females were marginally more likely than males to report pleasure when hurt by someone they liked (11% vs. 6%, $\chi^2=3.44$, $df=1$, $p=.06$).

Attitudes and Social Context

When asked about sources of worry during sex, 30% of sexually experienced students cited the possibility of getting an STD, and 23% the possibility of getting AIDS. Fifteen percent said that the possibility of having their relationships discovered was a concern, and 13% mentioned their partner's lack of emotional response. Eight percent of sexually experienced students reported fear of pregnancy. There were no significant gender differences in sources of worry during sex.

Seventy-one percent of the overall sample said that they were exclusively heterosexual, 23% mainly heterosexual, 6% bisexual and fewer than 1% mainly homosexual. No participants indicated that they were exclusively gay. A significantly smaller proportion of females (68%) than of males (76%) reported an exclusively heterosexual orientation ($\chi^2=8.53$, $df=3$, $p=.04$). Six percent of sexually experienced participants, all females, had had same-sex partners.

Nearly two-thirds of sexually experienced participants reported that sex plays a major role in their lives. Sixteen percent said sex is not important, 5% said that sex is a source of unpleasant feelings, 2% feared possible pain and fewer than 1% felt that sex is dirty and shameful. Females tended to report sex as a source of unpleasant feelings more often than males (7% vs. 1%), but the difference was only marginally significant ($\chi^2=3.09$, $df=1$, $p=.08$).

The majority of sexually experienced students (64%) said that they preferred to meet new sexual partners in the company of friends. Other preferred strategies were to meet new partners in work or study environments (20%), casually on the streets (17%) or only through a friend's recommendation (9%); 6% said they had no preferences. There were no significant gender differences in these preferences.

To better understand the social context of risk, we also examined young people's social and relationship characteristics. Results show that sexually experienced participants' reasons for initiating sex fell into

Table 5. Percentage of students, by strategies reported for increasing sexual desire, according to sexual experience status and gender

Strategy	Total	Males	Females	χ^2 for gender differences	χ^2 for differences by sexual experience
Feel strong love for the partner					
Sexually experienced	53.8	44.0	59.4	4.58 (1)*	0.18 (1)
Not sexually experienced	55.7	45.5	62.7	9.44 (1)**	
Do something unusual to the partner					
Sexually experienced	36.5	42.7	33.1	1.90 (1)	38.46 (1)****
Not sexually experienced	13.5	20.5	8.8	9.08 (1)**	
Change partners					
Sexually experienced	19.7	25.3	16.5	2.34 (1)	15.83 (1)****
Not sexually experienced	8.0	10.6	6.2	2.05 (1)	
Drink alcohol or use drugs					
Sexually experienced	11.1	9.3	12.0	0.35 (1)	11.21 (1)***
Not sexually experienced	3.7	6.1	2.1	3.51 (1)	
Do something unusual to oneself					
Sexually experienced	8.7	5.3	10.5	1.64 (1)	7.93 (1)**
Not sexually experienced	3.1	3.8	2.6	0.38 (1)	
Feel aggression toward the partner					
Sexually experienced	7.2	6.7	7.5	0.05 (1)	5.82 (1)
Not sexually experienced	2.8	1.5	3.6	1.30 (1)	

*p≤.05. **p≤.01. ***p≤.001. ****p≤.0001.

several clusters (Table 4). One cluster was primarily psychological: Students said that their primary reason for first having sex was that they fell in love (49%), had sexual desire (44%), were curious (25%) or were lonely (3%). Females were significantly more likely than males to cite falling in love as a reason (56% vs. 36%), and males were more likely than females to report sexual desire as a reason (65% vs. 32%).

The second cluster of reasons for first sex involved sexual coercion and substance use. Fourteen percent of sexually experienced participants reported partner pressure as a reason they began having sex. Females were more likely than males to cite this reason (18% vs. 5%). Eleven percent of participants described drunkenness as a reason for initiating sex. Two percent of females reported that their first sexual experience was rape.

A third cluster of reasons was social. Young people reported having had sex out of a desire to feel grown up (7%), to gain independence from their family (2%) or to create a family (1%). All of the students who reported having first sex because of a desire to gain independence from their families were females.

When asked about the kinds of sexual partners they preferred, 60% of sexually experienced students said exclusive partners, 26% physically attractive partners, 23% spiritually close partners, 8% very casual partners and 3% partners who can be cared for. Males were significantly more likely than females to base their preference on a partner's appearance (39% vs. 18%) and to prefer very casual partners (13% vs. 5%) and partners who can be cared for (7% vs. 1%). By contrast, females tended more often than males to say that they preferred having an exclusive partner (65% vs. 52%), but the difference was only marginally significant ($p=.07$).

As expected, males were more aggressive than females in terms of how they preferred to seek out potential sexual partners. Sixteen percent of males said they actively sought out partners, compared with 4% of females. A significantly higher proportion of females (43%) than of males (20%) said they waited for others to pay attention to them. Fifty-eight percent of males and 49% of females said they did both.

Strategies to Enhance Sexual Desire

The most common strategy students reported for increasing their sexual desire was feeling stronger love for their partner (Table 5): This response was given by 54% of sexually experienced participants and 56% of participants who were sexually in-

experienced (whose responses reflected what they supposed they would do). Regardless of their sexual experience status, females were more likely than males to give this response. The second most common strategy was doing something unusual to the partner, reported by 37% of sexually experienced participants and 14% of others. Other strategies—changing partners, drinking alcohol or using drugs, doing something unusual to oneself and directing aggression toward a partner—were cited by 7–20% of sexually experienced students and by 3–8% of those who were not sexually experienced. Differences according to whether students were sexually experienced were stronger than differences between male and female participants.

Discussion

In this study, we sampled students from schools in different areas of St. Petersburg and obtained an extremely high participation rate. Our results show that students frequently engaged in risky sexual behavior and exhibited relationship characteristics related to risk.

Many young people in this sample began their sexual lives early: Thirty-nine percent were sexually experienced. However, the proportion of sexually experienced 15–17-year-olds found in large U.S. samples in 1995 was higher: 45–53%. On the other hand, these Russian women were at greater risk than their U.S. counterparts. Twenty-five percent of U.S. and 36% of Russian sexually experienced female adolescents reported four or more lifetime sexual partners. (The situation was reversed among young men, however: Thirty-eight percent of sexually experienced male adolescents in the United States, but only 17% of those in Russia, had had four or more partners.)²³

We found many indicators of risk in our study. A large proportion of adolescents did not associate safer sex with condom use, and perhaps for this reason, most sexually experienced students did not report consistent condom use. Unprotected vaginal intercourse was the most frequently cited preferred sexual activity and the practice that reportedly occurred most with recent sexual partners. A minority of sexually experienced adolescents said they were in exclusive relationships. However, even these relationships occurred within the context of serial monogamy. The average duration of young people's sexual relationships was only several months. Teenagers frequently cited changing partners as a way to enhance sexual

pleasure. On average, sexually experienced adolescents already had had more than three partners. These behaviors, accompanied by widely held beliefs that AIDS is a threat primarily to members of "high-risk groups" and that condoms are not important with familiar partners, create circumstances that facilitate the rapid spread of HIV and other STDs.

Not unexpectedly, young people often cited falling in love and sexual desire as reasons for first sex. However, substantial proportions of adolescents reported drunkenness and partner pressure as reasons. In addition, psychological, relationship and emotional factors appeared to play important roles related to risk. This was most evident in the finding that while nine in 10 sexually experienced adolescents first learned about AIDS before beginning their sexual lives, fewer than one-third said that information about the disease had influenced their behavior.

The presence of gender differences in many HIV risk-related psychosocial characteristics indicates that prevention programs need to be tailored to gender-specific issues. These data also show that sexual behavior, attitudes and knowledge about HIV risk have created a foundation for the rapid spread of STDs among adolescents. Education and behavioral prevention efforts are urgently needed.

The Need for Sexuality Education

With two-fifths of youths sexually experienced, sexuality education programs must be undertaken before adolescents begin their sexual lives. Because public school in Russia is obligatory, this is a feasible environment for reaching the maximum number of young people. Students attending schools require basic information about their health, sexuality and sexuality-related risks—STDs and undesired pregnancy. It is important to teach students about how HIV is and is not transmitted, and to correct widespread misperceptions that HIV risk occurs only for certain "risk groups."

Clarification about the differences between pregnancy prevention and STD prevention is critical, but other contextual issues should also be addressed in educational programs. Adolescents' preferences for unprotected sex show that young people need assistance in feeling more confident communicating with their partners about protection during sex. Experimental "valeology" (healthy living) classes that included sexuality education activities appeared in Russian public schools for several years in the past

decade, but conservative public pressure led officials to prohibit this discipline. Restoration of quality programs on this subject and the use of professional valedology educators would provide cost-effective opportunities to deliver nationwide STD and pregnancy prevention education, even given the existing economic conditions of Russia.

The Need for Behavioral Interventions

Prevention programs must be delivered in the environments where adolescents socialize, communicate, and meet new friends and potential sexual partners. Teenagers consider these social environments "safe" places; two-thirds of students said they prefer to meet new sexual partners in the company of friends, and others said they meet new partners only through the recommendation of friends. If participants trust their friends enough to start new relationships with recommended persons, these friends and their companions can play extremely important roles in HIV prevention efforts.²⁴ Adolescents are often skeptical of advice given by adults and authority figures. Especially in Russia, with its Soviet-era history of propaganda and media control, adolescents may trust their peers more than authorities. Studies are needed to determine the feasibility and effectiveness of peer-based prevention interventions that work through adolescents' natural social networks.

Female participants were most likely to cite falling in love as a reason for their first sex, and females preferred monogamy. Most male students said the reason for first sex was sexual desire, and they were more likely than females to accept multiple and casual relationships. These and other findings concerning relationship values suggest that traditional gender roles are common among Russian youths. Interventions that promote relationship stability are needed, as are approaches that support some youths' decisions to defer sex. However, the high rates of multiple and casual partner contacts make condom promotion a high priority. The use of multiple approaches for behavioral change—including efforts aimed at changing attitudes and intentions, and at enhancing self-efficacy through one-on-one peer

communications—is one of the most appropriate strategies to prevent a widespread HIV epidemic among adolescents in Russia.

Conclusion

This study has certain limitations. Surveys could be conducted only in schools whose administrations permitted it. The behavior of students in other schools could be different. Like most behavioral research on AIDS, this study relied on participants' self-reports. Although anonymity of responses was assured, some young people may have underreported stigmatized behavior, such as same-sex behavior among males.

Recent surveys of adolescents in United States and other Western countries show declining rates of sexual risk behavior and increased condom use.²⁵ Such trends have not yet been found among young people in Russia. In fact, rates of risky sexual risk behavior have steadily increased.²⁶ Interventions undertaken now to reduce sexual risk and the transmission of HIV and other STDs can avert the growing threat of these diseases to Russian youth.

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