HIV and STD Knowledge, Sexual Behaviors and Drug Taking Behaviors of Adolescents in southern Russia

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Abstract

English:

For several years, HIV infection has increasing rapidly in Eastern Europe and Russia (UNAIDS, 2000, 2003). The purpose of the study was to investigate the HIV and STD knowledge, sexual behaviors and drug taking behaviors of adolescents in southern Russia. The instrument was compiled by the authors, professionally translated, and pilot tested. Most of the subjects were female (52.1%) tenth graders (63.8%) from schools in Samara, Russia. The majority of subjects drank 1-3 drinks per month (51.4%), did not smoke cigarettes (68.6%) and did not inject drugs (89.3%). Most of the subjects had not participated in sexual intercourse (68.6%). Those females who had participated in sexual activity because of physical force were more than 4 times as likely to have had intercourse than those who had not participated in sexual activity because of physical force (Odd Ratio = 4.67). The majority of subjects correctly indicated that condoms reduce the risk of HIV transmission, however, the majority of subject also incorrectly indicated that condom use reduces the risk of transmission of all sexually transmitted diseases and that sexual intercourse is safe if a condom is used. Subjects had highest levels knowledge on items related to commonly discussed methods of transmission such as shaking hands or touching, using needles to inject drugs, and multiple partners. However, subjects were less knowledgeable about methods of transmission that are less commonly discussed such as transmission from a mosquito or other insect, transmission from a toilet seat or transmission at a restaurant where the cook has AIDS. The results of the study are consistent with earlier studies of Russian youth.

***Spanish**:*

Por varios años las infecciones de VIH han aumentado rápidamente en el este de Europa y Rusia (UNAIDS, 2000, 2003). El propósito del estudio fue investigar sobre el conocimiento de VIH y ETS, conductas sexuales y conductas durante el uso de drogas en adolescentes en el sureste de Rusia. El instrumento utilizado fue recopilado por los autores, traducido profesionalmente y probado antes de usarlo. La mayoría de los sujetos fueron féminas (51.1%) del grado 10mo (63%) de las escuelas en Samara, Rusia. La mayor parte de los sujetos bebieron de 1-3 tragos por mes (51.4%), no fumaron cigarrillos (68.6%) y no se inyectaron drogas (89.3%). La mayoría de los sujetos no han participado en relaciones sexuales íntimas (coito). Las féminas que fueron forzadas físicamente a participar en actividades sexuales fueron 4 veces más probables de tener coito comparadas con aquellas que no han participado en actividades sexuales (Proporción Impar = 4.67). La mayoría de los sujetos indicaron correctamente que los condones reduce el riesgo de la transmisión del VIH, aunque, la mayor parte de los sujetos también indicaron incorrectamente que el uso del condón reduce el riesgo de transmisión de todas las enfermedades sexualmente trasmitidas y que la relación sexualmente intima (coito) es seguro si se usa un condón. Los sujetos tienen un alto conocimiento en asuntos discutidos comúnmente relacionados con métodos/formas de transmisión tales como estrechar la mano o tocar, utilizar agujas para inyectarse drogas y tener múltiples parejos(as). Aunque, los sujetos con menos conocimiento sobre los métodos/formas de transmisión que son menos discutidos tales como la transmisión por un mosquito o insecto, transmisión por medio del asiento de un inodoro o transmisión en un restaurante porque el cocinero tienen SIDA. Los resultados del estudio son consistentes con estudios previos realizados con jóvenes rusos. Mientras que las conductas actuales de los sujetos son alentadoras, existe lugar/espacio para mejorar el conocimiento sobre el VIH/SIDA y otras enfermedades de transmisión sexual.

Key words: HIV/AIDS knowledge, drug use, adolescents, Russia

Introduction

HIV/AIDS is having its most severe impact on the adult population of countries, which because of economic challenges are not able to provide adequate primary prevention strategies. Specifically, those in the 24-35 aged group are most affected (UNAIDS, 2000). Given the typical amount of time between being infected with HIV and death from AIDS, it is likely that most of the 11.5 million people who have died were infected during their late teens or early 20s. Therefore, HIV infection and behaviors that could lead to HIV infection among adolescents continues to be a concern in many parts of the world.

HIV infection rates continue to rise in most regions of the world including the Russia and Eastern Europe (UNAIDS 2002). HIV rates have increased dramatically in Russia and Eastern Europe since the mid-1990s (UNAIDS, 2002). Currently, the HIV/AIDS epidemic is growing more rapidly in Russia and Eastern Europe than any region. While many studies have examined adolescent sexual knowledge, attitudes, and behavior and other HIV infection risk factors in North America and Europe, fewer have examined the same issues within Russian youth (Pinkerton et al., 2003; Kelly et al., 2001; Amirkhanian, Tiunov & Kelly, 2001; Lunin, Hall, Mandel, Kay & Hearst, 1995) and the authors found none that have examined adolescent HIV/AIDS risk factors or sexual behaviors in the Samara region.

A variety of studies have investigated the use of alcohol, tobacco and other drugs (ATOD) among adolescents in selected areas of Russia. Romanova and Grechanaia (1999) investigated ATOD use among early adolescents in Moscow. Blum, Blum, Phillips, Smith, and Slap (1996) reported on a variety of adolescent health issues, including ATOD, among adolescents in Moscow and St. Petersburg. However, again none were found that examined ATOD use among adolescents in the Samara region.

The purpose of this study was to add to the body of knowledge about Russian adolescent risk behaviors by examining the knowledge, attitudes and behaviors related to HIV/AIDS and other related constructs in adolescents in a region of Russia about which little research has been published. The data collected for this study was part of the *Youth at the CrossRoads*, a character education based HIV/AIDS curriculum that is currently in use in approximately 45 countries in Central America, Eastern Europe, Asia, Africa, and the Middle East.

Methods

Demographics

The sampling procedure for the study was a nonprobability sample of convenience using intact classrooms in the city and region of Samara in southern Russia. According to McDermott and Sarvela (1999, p 267) such a sampling procedure is appropriate and useful in the ". . . exploration of issues not previously examined." School administrators and classroom teachers selected intact classrooms from fourteen schools. The 290 subjects were primarily females (n = 151, 52.1%) and in the tenth grade (n = 185, 63.8%). The remaining subjects were in the 9th (19.3%, n = 56,) and 8th (7.6%, n = 22) grades. The average age of the subjects was slightly less than 15 years. Most of the subjects (n = 231, 79.7%) lived with both parents and 17.9% lived with mother only.

Instrumentation

The instrument was designed to elicit information related to HIV/AIDS knowledge, HIV transmission knowledge, sexual behaviors and attitudes toward moral values. The items that comprised the instrument were obtained from a variety of sources including previous existing instruments. The behavioral items were adapted from the YRBS (Kann et al., 1997; YRBS, 2001) and were modified slightly to be culturally relevant. The knowledge items were developed by the researchers to test knowledge related to HIV/AIDS and HIV/AIDS transmission. The instrument also included attitudinal items the analysis of which is not part of this paper. The reliability of the knowledge and attitudinal scales ranged from r = .74 for the Inner Dimension (Spirituality) scale to r = .68 for the Person of Values scale. After the instrument was compiled, professionally trained translators translated the instrument into Russian. Following translation, each item was reviewed concurrently by the instrument developers and by researchers from the Samara Educational Development Center to ensure that the original intent of each item was maintained after translation. The panel of researchers and translators also reviewed the translated instrument for face validity. The instrument was then piloted with a small group of students in Samara. Only minor changes were deemed necessary at that time. Institutional Review Board approval for the research protocol was obtained from the University of Wisconsin - La Crosse with assistance from the Samara Educational Development Center.

Administration

Trained researchers collected the data using intact classrooms. The classrooms were chosen by educational officials in Samara to be representative of the student population of the region. The researchers followed a written questionnaire administration protocol and script to standardize data collection. The subjects responded to the instrument using an optical scan form. Upon completion by the subjects, the

optical scan forms were placed in an envelope that was sealed and transported to the US for analysis. The transportation of the data included both the public mail system and private carriers to insure timely delivery and analysis.

Results

Background Information

The majority of the subjects (79.7%, n = 231) lived with both of their parents. None of the subjects reported having any family members who were HIV positive. In response to a question about where they received most of their information about sex, the most common responses were: television = 28.6% (n = 83); magazines - 21.4% (n = 62); friends - 21.7% (n = 63). Very few subjects indicated their primary source of information about sex was parents (6.2%, n = 18) and schools (2.1%, n = 6). In response to the question regarding how often they used pornography, the most common response was "rarely/never" (37.2%, n=108). Other response options were "a few times per year" (30% (n = 87); "monthly" (16.6%, n = 48); "weekly" (10.3%, n=30); and "daily' (5.9%, n = 17).

Drug-Taking Behavior

The results of items regarding drug-taking behavior are summarized in Table 1. The majority of the subjects (51.4%, n = 149) reported drinking 1-3 drinks per month while 70 (24.1%) never drank. The most commonly reported age of first drink was age 12-13 (35.9%, n = 104) followed by age 14-15 (31.4%, n = 91). With regard to smoking cigarettes, most subjects did not smoke any cigarettes (68.6%, n = 199), while only 17 (5.8%) smoked 7 or more cigarettes per day. The overwhelming majority of subjects (89.3%, n = 285) reported they did not inject drugs. One subject reported injecting drugs 1 time or less per year, one subject reported injecting drugs several times per year, one subject reported injecting drugs several times per month and two subjects reported injecting drugs at least once per month.

Table 1. Drug Taking Behavior

Characteristic	*n =*	*%*
Alcohol use		
1-3 drinks per month	149	51.4
Never drank	70	24.1
4-6 drinks per month	63	21.7
Age of first drink		
12-13	104	35.9
14-15	91	31.4
Did not drink	69	23.8
Cigarette use		
Did not smoke	199	68.6
1-3 cigarettes/day	45	15.5
4-6 cigarettes/day	28	9.7
7-10 cigarettes/day	10	3.4
> 10 cigarettes/day	7	2.4

Sexual Behavior

The results of items regarding sexual behaviors are summarized in Table 2. The majority (68.6%, n = 199) of the subjects had not participated in sexual intercourse. Thirty-two females (22.2%) and 34 males (30.9%) reported having sexual intercourse. Fourteen of those who reported having sexual intercourse did not respond to the gender question. Of those who reported having sexual intercourse (n = 80), the most commonly reported age of first intercourse was 14-15 (67.5%, n = 54) followed by 12-13 (16.3%, n = 13). Of those who had participated in sexual activity only two (2.5%) indicated their first intercourse occurred at age 10-11. A higher percentage of females reported not having participated in sexual intercourse (females = 77.8%, males = 69.1%). Of those who reported having intercourse, approximately one-half (n = 39) had used a condom at last intercourse. Thirty-eight subjects (13.1%) reported being in a situation where someone used some degree of physical force (twisting your arm, holding you down, etc.) to make them engage in sexual behavior. Further examination revealed that 46.9% (n =15) of the females who reported having intercourse had also participated in sexual activity because of physical force. Those females who had participated in sexual activity because of physical force were more than 4 times as likely to have had intercourse than those who had not participated in sexual activity because of physical force (Odd Ratio = 4.67). Twenty-four (8.3%) subjects reported having sexual intercourse with someone when they did not really want to because of continued arguments. Nine (3.1%) subjects reported having received money or things in return for engaging in sexual activities.

Behavioral Intent

One half of the subjects (50.4%, n = 138) indicated they "definitely will not" or "probably will not" would engage in sexual activities with a partner in the next 3 to 6 months. In contrast, only 20.5% (n = 56) indicated they "probably will" or "definitely will" engage in sexual activities with a partner in the next 3 to 6 months while 29.2% (n = 80) reported they "possibly will" would engage in sexual activities with a partner in the next 3 to 6 months. The overwhelming majority (96.6%) indicated they were likely to use a condom the next time they had sex. Specifically, 58.7% (n=155) said they "definitely

Table 2. Sexual Behavior		
Characteristic	n =	***%***
Sexual intercourse		
Yes	80	27.6
No	199	68.6
Yes - Males	34	24.5[1]
Yes - Females	32	21.2[2]
Yes – missing gender	14	4.8[3]
Age of first intercourse		
14-15	54	67.5
12-13	13	16.3
16 or older	11	13.8
10-11	2	2.5
Use of condom at last intercourse	39	48.8
Engaged in sexual behavior because of physical force	38	13.1
Sexual experienced females who had participated in sexual activity because of physical force	15	46.9
Engaged in sexual behavior because of continued arguments	24	8.3
Received money or thing in return for sexual activities	9	3.1

[1] percent of males; [2] percent of females; [3] percent of total sample

will," 20.1% (n=53) said they "probably will," and 17.8% (n=47) said they "possibly will" use a condom during their next sexual intercourse experience. Almost two-thirds (60.3%, n = 160) of the subjects indicated they "definitely will," "probably will," or "possibly will" refuse all sexual relations in order to avoid HIV. The most commonly reported motivation for the choices the subjects made about sexual behavior was "inner or moral convictions" (63.6%, n=168) followed by "benefits to future relationships" (20.8%, n=55), "risk of acquiring sexually transmitted diseases" (6.8%, n=18), "other" (5.3%, n=14), and "risk of pregnancy" (3.4%, n=9).

HIV and Other STD Knowledge

Table 3 presents the percent of subjects who correctly answered HIV and other STD knowledge questions. Of the 15 items that assessed general HIV and other STD knowledge, the average number of items answered correctly was 8.3 (55.3%). The majority of subjects correctly indicated that condoms reduce the risk of HIV transmission, however, the majority of subject also incorrectly indicated that condom use reduces the risk of transmission of all sexually transmitted diseases and that sexual intercourse is safe if a condom is used. The majority of subjects also did not correctly understand that women are at an increased risk for transmission of STDs and are at an increased risk for damage to their bodies.

Table 3. Percent of subjects who correctly answered HIV and Other STD Knowledge questions

Item (correct response)	**Percent correct**
Persons with HIV can transmit the virus even if they are not feeling sick. (T)	92.3
Most people with AIDS are homosexuals. (F)	80.6
The level of virus in the body stays the same from the point of infection until death. (F)	68.7
Other sexually transmitted diseases can cause death. (T)	80.7
Having other sexually transmitted disease can increase someone's risk for acquiring HIV infection through sexual behavior. (T)	73.7
Women experience more physical damage to their bodies than men if they acquire a sexually transmitted disease. (T)	46.7
Most babies born to an HIV infected mother will have the virus in their body at birth. (F)	13.9
It is possible to get HIV from prolonged passionate kissing. (T)	65.4
Condom use reduces the risk of HIV transmission. (T)	94.8
Condom use reduces the risk of transmission of all sexually transmitted diseases. (F)	15.1
HIV is present in all body fluids of an infected person. (T)	44.5
Engaging in sexual activity at an early age increases one's risk for acquiring a sexually transmitted disease. (T)	62.3
Sexual intercourse is safe if a condom is used during intercourse. (F)	33.5
Women are more likely to get sexually transmitted disease from men than men are likely to get them from women. (T)	25.2

HIV/AIDS Transmission Knowledge

There were 10 items that were used to assess the subjects' knowledge of HIV transmission. Response options were "Very likely," "Somewhat likely," "Unlikely," and "Not possible." Table 4 presents the percentage of these items that were answered correctly. Subjects had highest levels knowledge on items related to commonly discussed methods of transmission such as shaking hands or touching, using needles to inject drugs, and multiple partners. However, subjects were less knowledgeable about methods of transmission that are less commonly discussed such as transmission from a mosquito or other insect, transmission from a toilet seat or transmission at a restaurant where the cook has AIDS.

Table 4. Percent of subjects who correctly answered HIV/AIDS Transmission questions

Item (correct response)	Percent correct
A person could get HIV/AIDS from a toilet seat. (Not possible)	33.0
A person could get HIV/AIDS from being coughed on or sneezed on by someone who has AIDS. (Not possible)	42.7
A person could get HIV/AIDS from shaking hands or touching someone who has AIDS. (Not possible)	67.4
A person could get HIV/AIDS if they have another type of sexually transmitted disease. (Somewhat likely)	40.1
A person could get HIV/AIDS if they are at a restaurant where the cook has AIDS. (Not possible)	31.3
A person could get HIV/AIDS from donating blood. (Unlikely)	1.7
A person could get HIV/AIDS from mosquito or other insect. (Not possible)	27.4
A person could get HIV/AIDS from having multiple sexual partners. (Very likely)	60.8
A person could get HIV/AIDS from using needles to inject drugs. (Very likely)	63.7
A person could get HIV/AIDS by sleeping in the same room with someone who AIDS. (Not possible)	47.2

Discussion

There are several of the results that are worthy of further discussion. First, fewer of the subjects reported having sexual intercourse when compared with comparably aged youth from the United States. In this study, 28.7% (80 of 279) of the adolescents reported having participated in sexual intercourse. In contrast, the Youth Risk Behavior Surveillance (Kann et al., 1997; YRBS, 2001) reported that approximately 45% of the respondents had ever participated in sexual intercourse. The AddHealth study (1999) reported that approximately 40% of adolescents in the United States have participated in sexual intercourse. The average ages of the subjects in the AddHealth and YRBS studies were older than the current study by approximately one and two years respectively. Therefore, it is possible that the differences in sexual activity may be a result of the difference in the mean age of the samples. However, other studies (Golod, 1993; Remennick, 1991; Amirkhanian, Tiunov & Kelly, 2001) of Russian adolescents have reported proportion of adolescents participating in sexual intercourse closer to the above-mentioned US studies.

The findings related to forced sexual activity were similar to previous studies. In this research, 32 females (21.2%) reported having participated in sexuality activity against their wishes as a result of physical force. Lunin et al. (1995) reported that 25% of the females reported unwanted sexual activity. In the current study, 15 of the 32 (46.9%) females who reported having sexual intercourse also reported having been forced to participate in sexual activity by use of physical force while Lunin et al. (1995) reported that 64% of sexually experienced females reported unwanted sexual activities. Lunin et al. (1995) also reported that 16% of sexually inexperienced females had participated in unwanted sexual activities while in the present study 15.5% (17 of 107) of the females who reported not being sexually active indicated they had been forced to participate in sexual activity. Stated another way, in the present study, 46.9% (15 of 32) of the females who had been forced to participate in sexual activity reported being sexually active. Those females who had participated in sexual activity as a result of the use of physical force were more than four times as likely (OR = 4.67) to report having participated in sexual intercourse. These similar findings from disparate parts of Russia seem to indicate that forced sexual activity may be a serious problem within the female adolescent population.

The results indicate that the overwhelming majority of subjects were not placing themselves at risk of HIV transmission because of IV drug use. This is an important positive finding in an area where a substantial proportion the HIV transmissions are the result of IV drug use (UNAIDS, 2002). The reported use of IV drugs in this research is lower than that reported in previous studies of other regions of

Russia and Eastern Europe (UNAIDS, 2002). It is possible that the incidence of IV drug use, if it exists to a similar degree in the Samara region, occurs in a population older that this sample.

There are also several areas of knowledge related to HIV and other STD and their transmission that are worthy of further discussion. First, more than 70% of the subjects answered correctly on only five of the 25 knowledge questions. The overwhelming majority (85%) of subjects incorrectly thought that condoms can reduce the risk of all sexually transmitted diseases when research has shown that condoms do not reduce the risk of the transmission of Chlamydia and HPV (NIAID, 2001; Kjaer et al., 1997; Kriess et al., 1992; Jamison et al., 1995; Syrjanen et al., 1985; and reduce the risk of herpes (NIAID, 2001, Kjaer et al., 1997; Oberle et al., 1989) and syphilis (NIAID, 2001; Pemberton et al., 1972) by only 40-60%. It is of concern that approximately one-third of the subjects believed that it was possible for a person to get HIV/AIDS by shaking hand with or touching someone who has AIDS. One-third also believed that it was not possible to get HIV/AIDS from using needles to inject drugs. Previous research (Amirkhanian et al., 2001; Lunina & Lunin, (1994) found similar deficits in HIV-related knowledge. The present research was also consistent with previous research (Kelly et al., 2001) with regard to the sources of information related to sexual issues. In this study, the majority of subjects (71.7%, n = 207) reported getting the majority of their information related to sexuality from television, magazines, or friends.

In addition, over 98% of the subjects thought that a person could get HIV/AIDS from donating blood. It is difficult to assess the actual risk of HIV transmission from donating blood and is beyond the scope of this study. However, it is clear that the subjects perceived that HIV could be transmitted from donating blood.

With regard to ATOD use among adolescents in Russia, there are several points that need to be discussed. Blum et al. (1996) report that heavy alcohol use among adolescents. They indicate that as much as one quarter of 14 and 15 year olds are believed to drink daily. They further report that as many as 76% of boys and 94% of girls in St. Petersburg may drink five to six times weekly. Romanova and Grechanaia (1999) reported that only 9% of ninth graders in Moscow had never tried alcohol during their lifetime. In contrast, a much higher proportion of the subjects in this study (24.1%) reported never drinking. With regard to cigarette smoking, inconsistencies also exist between the current study and previous research. Romanova and Grechanaia (1999) reported that 29% of Moscow ninth graders indicated they had never smoked and Blum el al. (1996) reported that 24% of boys and 94% of girls were current smokers. The findings of the current research are not consistent with the previous results. Only 31% of the subjects reported daily cigarette use and 69% reported they did not smoke any cigarettes. Clearly the reported cigarette use is much lower in the current study than has been preciously reported. At least two possible explanations can be posited. It is possible that alcohol and cigarette varies widely in varying regions of Russia. Examples of these possible variations may be found in the previous research of Blum et al. (1996) and Romanova and Grechanaia, (1999). A second possibility the current sample is not representative of the larger adolescent population in the Samara region.

The current research has some notable limitations. First, the sample was not a randomly obtained and represents a small percentage of students in Samara and the surrounding region. Generalization of these findings cannot be sustained on this evidence alone. Second, all of the findings are based upon self-reports and may, therefore, be subject to the potential inconsistencies common to self-report data. However, self-report methods are warranted in the exploration of constructs such as values, character issues and knowledge (Chirkov & Ryan, 2001).

Recommendations for future studies include enlarging the sample and subjects from other cities and regions of Russia. The authors also recommend including older subjects in future studies. A sample of older subjects would likely include larger proportion of individuals who are currently engaging in sexual intercourse and likely a larger proportion of individuals participating in IV drug use. In addition, further studies need to be conducted to explore the issue of forced sexual activity. These further studies should attempt to identify who is using the force.

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Abstract

English:

For several years, HIV infection has increasing rapidly in Eastern Europe and Russia (UNAIDS, 2000, 2003). The purpose of the study was to investigate the HIV and STD knowledge, sexual behaviors and drug taking behaviors of adolescents in southern Russia. The instrument was compiled by the authors, professionally translated, and pilot tested. Most of the subjects were female (52.1%) tenth graders (63.8%) from schools in Samara, Russia. The majority of subjects drank 1-3 drinks per month (51.4%), did not smoke cigarettes (68.6%) and did not inject drugs (89.3%). Most of the subjects had not participated in sexual intercourse (68.6%). Those females who had participated in sexual activity because of physical force were more than 4 times as likely to have had intercourse than those who had not participated in sexual activity because of physical force (Odd Ratio = 4.67). The majority of subjects correctly indicated that condoms reduce the risk of HIV transmission, however, the majority of subject also incorrectly indicated that condom use reduces the risk of transmission of all sexually transmitted diseases and that sexual intercourse is safe if a condom is used. Subjects had highest levels knowledge on items related to commonly discussed methods of transmission such as shaking hands or touching, using needles to inject drugs, and multiple partners. However, subjects were less knowledgeable about methods of transmission that are less commonly discussed such as transmission from a mosquito or other insect, transmission from a toilet seat or transmission at a restaurant where the cook has AIDS. The results of the study are consistent with earlier studies of Russian youth.

Key words: HIV/AIDS knowledge, drug use, adolescents, Russia

Introduction

HIV/AIDS is having its most severe impact on the adult population of countries, which because of economic challenges are not able to provide adequate primary prevention strategies. Specifically, those in the 24-35 aged group are most affected (UNAIDS, 2000). Given the typical amount of time between being infected with HIV and death from AIDS, it is likely that most of the 11.5 million people who have died were infected during their late teens or early 20s. Therefore, HIV infection and behaviors that could lead to HIV infection among adolescents continues to be a concern in many parts of the world.

HIV infection rates continue to rise in most regions of the world including the Russia and Eastern Europe (UNAIDS 2002). HIV rates have increased dramatically in Russia and Eastern Europe since the mid-1990s (UNAIDS, 2002). Currently, the HIV/AIDS epidemic is growing more rapidly in Russia and Eastern Europe than any region. While many studies have examined adolescent sexual knowledge, attitudes, and behavior and other HIV infection risk factors in North America and Europe, fewer have examined the same issues within Russian youth (Pinkerton et al., 2003; Kelly et al., 2001; Amirkhanian, Tiunov & Kelly, 2001; Lunin, Hall, Mandel, Kay & Hearst, 1995) and the authors found none that have examined adolescent HIV/AIDS risk factors or sexual behaviors in the Samara region.

A variety of studies have investigated the use of alcohol, tobacco and other drugs (ATOD) among adolescents in selected areas of Russia. Romanova and Grechanaia (1999) investigated ATOD use among early adolescents in Moscow. Blum, Blum, Phillips, Smith, and Slap (1996) reported on a variety of adolescent health issues, including ATOD, among adolescents in Moscow and St. Petersburg. However, again none were found that examined ATOD use among adolescents in the Samara region.

The purpose of this study was to add to the body of knowledge about Russian adolescent risk behaviors by examining the knowledge, attitudes and behaviors related to HIV/AIDS and other related constructs in adolescents in a region of Russia about which little research has been published. The data collected for this study was part of the *Youth at the CrossRoads*, a character education based HIV/AIDS curriculum that is currently in use in approximately 45 countries in Central America, Eastern Europe, Asia, Africa, and the Middle East.

Methods

Demographics

The sampling procedure for the study was a nonprobability sample of convenience using intact classrooms in the city and region of Samara in southern Russia. According to McDermott and Sarvela (1999, p 267) such a sampling procedure is appropriate and useful in the ". . . exploration of issues not previously examined." School administrators and classroom teachers selected intact classrooms from fourteen schools. The 290 subjects were primarily females (n = 151, 52.1%) and in the tenth grade (n = 185, 63.8%). The remaining subjects were in the 9th (19.3%, n = 56,) and 8th (7.6%, n = 22) grades. The average age of the subjects was slightly less than 15 years. Most of the subjects (n = 231, 79.7%) lived with both parents and 17.9% lived with mother only.

Instrumentation

The instrument was designed to elicit information related to HIV/AIDS knowledge, HIV transmission knowledge, sexual behaviors and attitudes toward moral values. The items that comprised the instrument were obtained from a variety of sources including previous existing instruments. The behavioral items were adapted from the YRBS (Kann et al., 1997; YRBS, 2001) and were modified slightly to be culturally relevant. The knowledge items were developed by the researchers to test knowledge related to HIV/AIDS and HIV/AIDS transmission. The instrument also included attitudinal items the analysis of which is not part of this paper. The reliability of the knowledge and attitudinal scales ranged from r = .74 for the Inner Dimension (Spirituality) scale to r = .68 for the Person of Values scale. After the instrument was compiled, professionally trained translators translated the instrument into Russian. Following translation, each item was reviewed concurrently by the instrument developers and by researchers from the Samara Educational Development Center to ensure that the original intent of each item was maintained after translation. The panel of researchers and translators also reviewed the translated instrument for face validity. The instrument was then piloted with a small group of students in Samara. Only minor changes were deemed necessary at that time. Institutional Review Board approval for the research protocol was obtained from the University of Wisconsin - La Crosse with assistance from the Samara Educational Development Center.

Administration

Trained researchers collected the data using intact classrooms. The classrooms were chosen by educational officials in Samara to be representative of the student population of the region. The researchers followed a written questionnaire administration protocol and script to standardize data collection. The subjects responded to the instrument using an optical scan form. Upon completion by the subjects, the

optical scan forms were placed in an envelope that was sealed and transported to the US for analysis. The transportation of the data included both the public mail system and private carriers to insure timely delivery and analysis.

Results

Background Information

The majority of the subjects (79.7%, n = 231) lived with both of their parents. None of the subjects reported having any family members who were HIV positive. In response to a question about where they received most of their information about sex, the most common responses were: television = 28.6% (n = 83); magazines - 21.4% (n = 62); friends - 21.7% (n = 63). Very few subjects indicated their primary source of information about sex was parents (6.2%, n = 18) and schools (2.1%, n = 6). In response to the question regarding how often they used pornography, the most common response was "rarely/never" (37.2%, n=108). Other response options were "a few times per year" (30% (n = 87); "monthly" (16.6%, n = 48); "weekly" (10.3%, n=30); and "daily' (5.9%, n = 17).

Drug-Taking Behavior

The results of items regarding drug-taking behavior are summarized in Table 1. The majority of the subjects (51.4%, n = 149) reported drinking 1-3 drinks per month while 70 (24.1%) never drank. The most commonly reported age of first drink was age 12-13 (35.9%, n = 104) followed by age 14-15 (31.4%, n = 91). With regard to smoking cigarettes, most subjects did not smoke any cigarettes (68.6%, n = 199), while only 17 (5.8%) smoked 7 or more cigarettes per day. The overwhelming majority of subjects (89.3%, n = 285) reported they did not inject drugs. One subject reported injecting drugs 1 time or less per year, one subject reported injecting drugs several times per year, one subject reported injecting drugs several times per month and two subjects reported injecting drugs at least once per month.

Table 1. Drug Taking Behavior

Characteristic	*n =*	*%*
Alcohol use		
1-3 drinks per month	149	51.4
Never drank	70	24.1
4-6 drinks per month	63	21.7
Age of first drink		
12-13	104	35.9
14-15	91	31.4
Did not drink	69	23.8
Cigarette use		
Did not smoke	199	68.6
1-3 cigarettes/day	45	15.5
4-6 cigarettes/day	28	9.7
7-10 cigarettes/day	10	3.4
> 10 cigarettes/day	7	2.4

Sexual Behavior

The results of items regarding sexual behaviors are summarized in Table 2. The majority (68.6%, n = 199) of the subjects had not participated in sexual intercourse. Thirty-two females (22.2%) and 34 males (30.9%) reported having sexual intercourse. Fourteen of those who reported having sexual intercourse did not respond to the gender question. Of those who reported having sexual intercourse (n = 80), the most commonly reported age of first intercourse was 14-15 (67.5%, n = 54) followed by 12-13 (16.3%, n = 13). Of those who had participated in sexual activity only two (2.5%) indicated their first intercourse occurred at age 10-11. A higher percentage of females reported not having participated in sexual intercourse (females = 77.8%, males = 69.1%). Of those who reported having intercourse, approximately one-half (n = 39) had used a condom at last intercourse. Thirty-eight subjects (13.1%) reported being in a situation where someone used some degree of physical force (twisting your arm, holding you down, etc.) to make them engage in sexual behavior. Further examination revealed that 46.9% (n =15) of the females who reported having intercourse had also participated in sexual activity because of physical force. Those females who had participated in sexual activity because of physical force were more than 4 times as likely to have had intercourse than those who had not participated in sexual activity because of physical force (Odd Ratio = 4.67). Twenty-four (8.3%) subjects reported having sexual intercourse with someone when they did not really want to because of continued arguments. Nine (3.1%) subjects reported having received money or things in return for engaging in sexual activities.

Behavioral Intent

One half of the subjects (50.4%, n = 138) indicated they "definitely will not" or "probably will not" would engage in sexual activities with a partner in the next 3 to 6 months. In contrast, only 20.5% (n = 56) indicated they "probably will" or "definitely will" engage in sexual activities with a partner in the next 3 to 6 months while 29.2% (n = 80) reported they "possibly will" would engage in sexual activities with a partner in the next 3 to 6 months. The overwhelming majority (96.6%) indicated they were likely to use a condom the next time they had sex. Specifically, 58.7% (n=155) said they "definitely

Table 2. Sexual Behavior		
Characteristic	n =	***%***
Sexual intercourse		
Yes	80	27.6
No	199	68.6
Yes - Males	34	24.5[1]
Yes - Females	32	21.2[2]
Yes – missing gender	14	4.8[3]
Age of first intercourse		
14-15	54	67.5
12-13	13	16.3
16 or older	11	13.8
10-11	2	2.5
Use of condom at last intercourse	39	48.8
Engaged in sexual behavior because of physical force	38	13.1
Sexual experienced females who had participated in sexual activity because of physical force	15	46.9
Engaged in sexual behavior because of continued arguments	24	8.3
Received money or thing in return for sexual activities	9	3.1

[1] percent of males; [2] percent of females; [3] percent of total sample

will," 20.1% (n=53) said they "probably will," and 17.8% (n=47) said they "possibly will" use a condom during their next sexual intercourse experience. Almost two-thirds (60.3%, n = 160) of the subjects indicated they "definitely will," "probably will," or "possibly will" refuse all sexual relations in order to avoid HIV. The most commonly reported motivation for the choices the subjects made about sexual behavior was "inner or moral convictions" (63.6%, n=168) followed by "benefits to future relationships" (20.8%, n=55), "risk of acquiring sexually transmitted diseases" (6.8%, n=18), "other" (5.3%, n=14), and "risk of pregnancy" (3.4%, n=9).

HIV and Other STD Knowledge

Table 3 presents the percent of subjects who correctly answered HIV and other STD knowledge questions. Of the 15 items that assessed general HIV and other STD knowledge, the average number of items answered correctly was 8.3 (55.3%). The majority of subjects correctly indicated that condoms reduce the risk of HIV transmission, however, the majority of subject also incorrectly indicated that condom use reduces the risk of transmission of all sexually transmitted diseases and that sexual intercourse is safe if a condom is used. The majority of subjects also did not correctly understand that women are at an increased risk for transmission of STDs and are at an increased risk for damage to their bodies.

Table 3. Percent of subjects who correctly answered HIV and Other STD Knowledge questions

Item (correct response)	**Percent correct**
Persons with HIV can transmit the virus even if they are not feeling sick. (T)	92.3
Most people with AIDS are homosexuals. (F)	80.6
The level of virus in the body stays the same from the point of infection until death. (F)	68.7
Other sexually transmitted diseases can cause death. (T)	80.7
Having other sexually transmitted disease can increase someone's risk for acquiring HIV infection through sexual behavior. (T)	73.7
Women experience more physical damage to their bodies than men if they acquire a sexually transmitted disease. (T)	46.7
Most babies born to an HIV infected mother will have the virus in their body at birth. (F)	13.9
It is possible to get HIV from prolonged passionate kissing. (T)	65.4
Condom use reduces the risk of HIV transmission. (T)	94.8
Condom use reduces the risk of transmission of all sexually transmitted diseases. (F)	15.1
HIV is present in all body fluids of an infected person. (T)	44.5
Engaging in sexual activity at an early age increases one's risk for acquiring a sexually transmitted disease. (T)	62.3
Sexual intercourse is safe if a condom is used during intercourse. (F)	33.5
Women are more likely to get sexually transmitted disease from men than men are likely to get them from women. (T)	25.2

HIV/AIDS Transmission Knowledge

There were 10 items that were used to assess the subjects' knowledge of HIV transmission. Response options were "Very likely," "Somewhat likely," "Unlikely," and "Not possible." Table 4 presents the percentage of these items that were answered correctly. Subjects had highest levels knowledge on items related to commonly discussed methods of transmission such as shaking hands or touching, using needles to inject drugs, and multiple partners. However, subjects were less knowledgeable about methods of transmission that are less commonly discussed such as transmission from a mosquito or other insect, transmission from a toilet seat or transmission at a restaurant where the cook has AIDS.

Table 4. Percent of subjects who correctly answered HIV/AIDS Transmission questions

Item (correct response)	Percent correct
A person could get HIV/AIDS from a toilet seat. (Not possible)	33.0
A person could get HIV/AIDS from being coughed on or sneezed on by someone who has AIDS. (Not possible)	42.7
A person could get HIV/AIDS from shaking hands or touching someone who has AIDS. (Not possible)	67.4
A person could get HIV/AIDS if they have another type of sexually transmitted disease. (Somewhat likely)	40.1
A person could get HIV/AIDS if they are at a restaurant where the cook has AIDS. (Not possible)	31.3
A person could get HIV/AIDS from donating blood. (Unlikely)	1.7
A person could get HIV/AIDS from mosquito or other insect. (Not possible)	27.4
A person could get HIV/AIDS from having multiple sexual partners. (Very likely)	60.8
A person could get HIV/AIDS from using needles to inject drugs. (Very likely)	63.7
A person could get HIV/AIDS by sleeping in the same room with someone who AIDS. (Not possible)	47.2

Discussion

There are several of the results that are worthy of further discussion. First, fewer of the subjects reported having sexual intercourse when compared with comparably aged youth from the United States. In this study, 28.7% (80 of 279) of the adolescents reported having participated in sexual intercourse. In contrast, the Youth Risk Behavior Surveillance (Kann et al., 1997; YRBS, 2001) reported that approximately 45% of the respondents had ever participated in sexual intercourse. The AddHealth study (1999) reported that approximately 40% of adolescents in the United States have participated in sexual intercourse. The average ages of the subjects in the AddHealth and YRBS studies were older than the current study by approximately one and two years respectively. Therefore, it is possible that the differences in sexual activity may be a result of the difference in the mean age of the samples. However, other studies (Golod, 1993; Remennick, 1991; Amirkhanian, Tiunov & Kelly, 2001) of Russian adolescents have reported proportion of adolescents participating in sexual intercourse closer to the above-mentioned US studies.

The findings related to forced sexual activity were similar to previous studies. In this research, 32 females (21.2%) reported having participated in sexuality activity against their wishes as a result of physical force. Lunin et al. (1995) reported that 25% of the females reported unwanted sexual activity. In the current study, 15 of the 32 (46.9%) females who reported having sexual intercourse also reported having been forced to participate in sexual activity by use of physical force while Lunin et al. (1995) reported that 64% of sexually experienced females reported unwanted sexual activities. Lunin et al. (1995) also reported that 16% of sexually inexperienced females had participated in unwanted sexual activities while in the present study 15.5% (17 of 107) of the females who reported not being sexually active indicated they had been forced to participate in sexual activity. Stated another way, in the present study, 46.9% (15 of 32) of the females who had been forced to participate in sexual activity reported being sexually active. Those females who had participated in sexual activity as a result of the use of physical force were more than four times as likely (OR = 4.67) to report having participated in sexual intercourse. These similar findings from disparate parts of Russia seem to indicate that forced sexual activity may be a serious problem within the female adolescent population.

The results indicate that the overwhelming majority of subjects were not placing themselves at risk of HIV transmission because of IV drug use. This is an important positive finding in an area where a substantial proportion the HIV transmissions are the result of IV drug use (UNAIDS, 2002). The reported use of IV drugs in this research is lower than that reported in previous studies of other regions of

Russia and Eastern Europe (UNAIDS, 2002). It is possible that the incidence of IV drug use, if it exists to a similar degree in the Samara region, occurs in a population older that this sample.

There are also several areas of knowledge related to HIV and other STD and their transmission that are worthy of further discussion. First, more than 70% of the subjects answered correctly on only five of the 25 knowledge questions. The overwhelming majority (85%) of subjects incorrectly thought that condoms can reduce the risk of all sexually transmitted diseases when research has shown that condoms do not reduce the risk of the transmission of Chlamydia and HPV (NIAID, 2001; Kjaer et al., 1997; Kriess et al., 1992; Jamison et al., 1995; Syrjanen et al., 1985; and reduce the risk of herpes (NIAID, 2001, Kjaer et al., 1997; Oberle et al., 1989) and syphilis (NIAID, 2001; Pemberton et al., 1972) by only 40-60%. It is of concern that approximately one-third of the subjects believed that it was possible for a person to get HIV/AIDS by shaking hand with or touching someone who has AIDS. One-third also believed that it was not possible to get HIV/AIDS from using needles to inject drugs. Previous research (Amirkhanian et al., 2001; Lunina & Lunin, (1994) found similar deficits in HIV-related knowledge. The present research was also consistent with previous research (Kelly et al., 2001) with regard to the sources of information related to sexual issues. In this study, the majority of subjects (71.7%, n = 207) reported getting the majority of their information related to sexuality from television, magazines, or friends.

In addition, over 98% of the subjects thought that a person could get HIV/AIDS from donating blood. It is difficult to assess the actual risk of HIV transmission from donating blood and is beyond the scope of this study. However, it is clear that the subjects perceived that HIV could be transmitted from donating blood.

With regard to ATOD use among adolescents in Russia, there are several points that need to be discussed. Blum et al. (1996) report that heavy alcohol use among adolescents. They indicate that as much as one quarter of 14 and 15 year olds are believed to drink daily. They further report that as many as 76% of boys and 94% of girls in St. Petersburg may drink five to six times weekly. Romanova and Grechanaia (1999) reported that only 9% of ninth graders in Moscow had never tried alcohol during their lifetime. In contrast, a much higher proportion of the subjects in this study (24.1%) reported never drinking. With regard to cigarette smoking, inconsistencies also exist between the current study and previous research. Romanova and Grechanaia (1999) reported that 29% of Moscow ninth graders indicated they had never smoked and Blum el al. (1996) reported that 24% of boys and 94% of girls were current smokers. The findings of the current research are not consistent with the previous results. Only 31% of the subjects reported daily cigarette use and 69% reported they did not smoke any cigarettes. Clearly the reported cigarette use is much lower in the current study than has been preciously reported. At least two possible explanations can be posited. It is possible that alcohol and cigarette varies widely in varying regions of Russia. Examples of these possible variations may be found in the previous research of Blum et al. (1996) and Romanova and Grechanaia, (1999). A second possibility the current sample is not representative of the larger adolescent population in the Samara region.

The current research has some notable limitations. First, the sample was not a randomly obtained and represents a small percentage of students in Samara and the surrounding region. Generalization of these findings cannot be sustained on this evidence alone. Second, all of the findings are based upon self-reports and may, therefore, be subject to the potential inconsistencies common to self-report data. However, self-report methods are warranted in the exploration of constructs such as values, character issues and knowledge (Chirkov & Ryan, 2001).

Recommendations for future studies include enlarging the sample and subjects from other cities and regions of Russia. The authors also recommend including older subjects in future studies. A sample of older subjects would likely include larger proportion of individuals who are currently engaging in sexual intercourse and likely a larger proportion of individuals participating in IV drug use. In addition, further studies need to be conducted to explore the issue of forced sexual activity. These further studies should attempt to identify who is using the force.

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