Sexual Knowledge, Attitudes and Practice of Adolescents in Northern Serbia - Are We Making any Progress? Follow-up Study 2000-2008

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Sexual Knowledge, Attitudes and Practice of Adolescents in Northern Serbia – Are We Making any Progress? Follow-up Study 2000–2008

A. Kapamadzija, T. Vejnovic, A. Novakov Mikic, J. Vukelic, V. Kopitovic, A. Bjelica

Objectives: To compare adolescents’ sexual knowledge, attitudes and practice in Serbia presently and eight years ago with the aim of establishing the progress in education and plan further actions for improving reproductive health of our adolescents. Methods: 933 high school adolescents in Northern part of Serbia, in eight high schools were involved in the study conducted in year 2008. Questionnaire made for this survey included questions about knowledge, attitudes and practices of adolescents in reproductive health (sexuality, contraception and STI). Comparison is made with the situation in year 2000. Results: Almost half of the high school adolescents are sexually active – 44 %, the mean age of first intercourse being 16 years. Only 57.3 % of adolescents use contraception regularly, 40.7 % use it sometimes and 2 % have never used it. Majority of adolescents used condom – 58.1 %, and one quarter used a combination of several means of contraception – 26.1 %. There is not enough knowledge about significant STIs (Chlamydia, HPV, herpes). Half of adolescents want more education on sexuality, STIs and contraception, in schools, from experts. Conclusions: There are actions being conducted in Serbia with the aim of improvement of reproductive health of young people, but organized sexual education in the schools is not yet mandatory.

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Key words: adolescents, sexual knowledge, practice and attitudes of adolescents, sexually transmitted infections, contraception

Introduction

Serbia is still one of the countries with the highest number of abortions in Europe and the lowest usage rate of contraceptive pills and intrauterine devices (IUD/IUS-s). [1]. Sexual education is still not incorporated in the school system. Nevertheless, numerous activities are conducted – Family Planning services and youth friendly services are well developed in Serbia, training of peer educators and teams of include psychologists, pediatricians and juvenile gynecologists who would work in those counselling services is being conducted and workshops and lectures in schools are provided by health professionals. Still, there are a certain number of gynecologists in Serbia whose knowledge, attitudes and practice relevant for individual contraceptive choices are insufficient, conservative, and inadequate and they represent an important factor of slow transition of birth control in Serbia [2]. Adolescents are a very important part of any nation, and their reproductive health is of utmost importance especially in population where natality is very low, as in our case. With current trends of earlier onset of sexual life, postponing marriage and first child birth, young people are more exposed to sexually transmitted infections (STI) and abortions which may damage their reproductive health.

Material and Methods

Survey was conducted in year 2008, in Province of Vojvodina, Serbia. Eight high schools took part. 933 adolescents – 599 girls (59.9 %) and 374 boys (40.1 %) aged 15–19 years. They answered questions about knowledge, attitudes and practices of adolescents in reproductive health (sexuality, contraception and STI). Comparison was made with the similar survey which was conducted in 2000 [3], in order to establish whether the situation has been improved and what actions should be further planned.

Results

Knowledge

Knowledge on Sexually Transmitted Infections (STI)

Adolescents in Vojvodina in year 2008 believe that they know more about contraception, sexually transmitted infections (STI) and sexuality than eight years ago. 54 % of the adolescents are satisfied with their knowledge of STI, 66 % is satisfied with the knowledge on contraception, and on sexuality 68.8 %. The satisfaction of the adolescents have least improved when knowledge on STI is concerned. Girls are more satisfied with their knowledge on contraception, and when knowledge on sexuality is concerned, the satisfaction has doubled. Boys think they know enough about STI and sexuality more than girls (Tab. 1).

Almost all pupils in high school have heard of HIV (97.3 % vs 99.4 % in 2000.), boys and girls alike. It is interesting that when compared to eight years ago, today 68.9 % of them know of hepatitis B and C, compared to 4.4 % in 2000. Gonorrhea is known to 50.3 % of boys and 67.6 % girls (62.7 % in 2000). Only 16 % boys and 8 % girls know of syphilis (55.6 % in 2000). Chlamydia infection is better known among girls – 30.8 % vs 8.3 % of boys (in 2000: 5.2 % of girls and 1.7 % of boys). 0.5 % of boys have heard of genital warts (4.8 % of girls), and other types of HPV infections of cervix are not mentioned by the adolescents. Only 0.8 % boys and 2.9 % girls know of herpes. Girls are better acquainted with STI than boys and know much more infections apart from syphilis. It can be concluded that adolescents know most about HIV because of intensive media campaigns, that infection being still very rare in our country, but do
not know of infections that are much more frequent and may jeopardize their reproductive health (Chlamydia, HPV). As the best protection from STI, majority of adolescents name condom, 62.7% (66% in 2000), use of contraception 20.8%, one partner 7.9%, medical check ups 4.4% and abstinence 2.2%.

**Knowledge on Contraception**

When naming contraceptive methods that are known to them it is seen that the majority of adolescents know of condom (98.8%), but the rest of the methods are not sufficiently known. Girl named twice as many methods of contraception as boys did, but they are not familiar with great number of them either. Almost all girls have heard of oral contraception – 97.7%, compared with three quarters of boys (75.3%). Less than half of all the girls know of IUD – 44.4%, compared to 17.4% boys, while urgent contraception is stated by only 10% girls and 3.2% boys. Interrupted intercourse is named by a small number of adolescents (1.1% boys, 3.6% girls), with the assumption that this way of protection of unwanted pregnancy is not a method of contraception, but it is still used by a great number of couples in Serbia. Boys do not know at all about female condom and patch, and spermicides are mentioned by only 1.1% of boys (AB film), and 7.5% of girls (AB film, foams, spermicides). The majority of adolescents believe that condom is the safest contraceptive (83.8%) because of double protection – of unwanted pregnancy and STI. Only 6% of adolescents believe that the pills are most reliable, 1.7% think it is IUD and 5.9% believe that the combination of a condom and pill is most reliable. These answers show lack of knowledge about other means of contraception, especially of their safety. The adolescents know that condom means double protection – from unwanted pregnancy and STI, but do not know enough about other methods of contraception, especially hormonal pills and intrauterine devices (IUD). Combined method – condom and pill is indeed very safe method, good for adolescent age, but very few adolescents know about it (5.9%). Of those who answered the question which method is the most acceptable for adolescents, again majority of them state condom – 93.3% of boys and 86.8% of girls, and the girls name combination of condom and pills in 8.4%, and boys in only 1.2%. Pills as most acceptable method for adolescents are named in 3.1%. Boys do not name natural methods at all (interrupted intercourse and calendar rhythm method) whereas girls mentioned them in only 0.6%. Similar results were in year 2000 as well. Adolescents at the question whether they have heard of urgent contraception (“morning after pill”), answer affirmatively in 82.1% of cases, although they do not mention it spontaneously in the part of the survey where they name contraceptive methods they know of. In year 2000, only 34% of adolescents knew of this method, and then this method has not been present at our market. Girls have heard of this method more often than boys (87.7% vs 68.7%). When asked to explain when and how urgent contraception is used, only one quarter of adolescents answered correctly (24.6%), one half of them do not know the answer (48.3%), and one quarter is not sure (27.1%). From those adolescents that heard of urgent contraception, only 30.1% know exactly what it is and how it is used, 33.3% are not sure, a 36.6% do not know a correct answer.

Most important sources of information from which adolescents get information on sexuality, reproductive health and sexually transmitted diseases are magazines, television and books – 50.4% (2000: 39.4%), friends – 18.2% (2000: 28.8%), gynecologists and other experts – 9.7% (2000: 6.6%), parents – 8.7% (2000: 10.6%), internet 6.8%, teachers at school – 4.7% (2000: 2.3%), partners – 0.8% (Fig. 1).

Both sexes equally get information from magazines, books, television and friends. Girls more often get information from parents –11.1%; in 2000: 13%; than boys (9%; 2000: 7.7%), which is also the case with getting information from gynecologists and other experts (girls in 12.7%, boys in 5.2%; in 2000: 9.7%/2.9%). Boys more often than girls get information on reproductive health at the internet (boys 13.4%, girls 2.4%) (Fig. 2).

Our results showed that the adolescents most often talk about sex with their peer friends (68.3%; in 2000: 77.9%), then with partners (boyfriend/girlfriend – 29.4%; in: 2000: 31.4%), with siblings (14.1%), and least often with parents.
The situation with talking about sex with parents is worsening, the number is cut in half compared to the numbers from eight years ago – 15.8 % of girls talk with their parents about sex (2000: 27.9 %) and 7.1 % of boys (2000: 13.6 %). Concerning is the fact that every tenth adolescent does not talk about sex with anybody (11.6 %) as well as that they talk to experts in only 1.6 % cases (0.3 % of boys and 1.3 % of girls).

**Additional Knowledge**

Additional knowledge on this issue want similar number of adolescents as 8 years ago – about STI wants to know more 51.7 %, about sex 45.8 % and about contraception 41.4 %. Boys are least interested in additional knowledge on contraception (35 %). Girls are generally more interested than boys – 50 % of girls want additional knowledge on all issues compared to 40 % of boys. The adolescents would like to get additional knowledge on sexuality in schools (overall 31.9 %, boys 40 %) and in counseling services (overall 31.3 %, 37.5 % of girls). Despite the fact that the first information was provided by television, magazines and books, only 13.2 % of adolescents want additional knowledge from these sources. Additional knowledge from internet is wanted by only 5.1 % of adolescents (8.6 % of boys and 3 % of girls).

78.4 % of adolescents have computer and internet connection at home (70 % in smaller towns, up to 90 % in smaller towns). Only one third of boys 33.5 % and one quarter of girls – 23.2 % use internet frequently to get more information on life topics that interest them, and half of them use them only sometimes for this reason. Internet is never used by every fifth boy (19.9 %) and every fourth girl 26.7 %. The most desired source of information on sexuality, STI and reproductive health is gynecologist (69.5 %; 2000: 71.1 %). 5 % of the adolescents want additional information from parents (2000: 10.3 %), from teachers 4.7 %, and from friends of the same age 0.9 % (probably have not heard of peer educators).

**Attitudes**

When adolescents were asked what they thought was the earliest age when sexual intercourses could be conducted, it was seen that boys and girl consider an average cut off of 16 years as appropriate. This question was answered by about 70 % of adolescents and the rest did not answer the actual question, but discuss other issues of importance to the onset of sexual activity. Half of the adolescents of both sexes consider the age of 20 to be the latest when first sexual intercourse should be conducted. Half of adolescents (53.7 %) states that for beginning of sexual activity are more important some other issues, rather than age alone. About 40% of adolescents think that most important is maturity and responsibility (40.7 % of boys and 39.6 % of girls). “Readiness” comes second, for 33.3 % of adolescents (girls 36.2 %, boys 26.7 %). “Love” as a condition for sexual activity is stated by 15.3 % of boys and 12.3 % of girls, and when combination of “love and trust” is added as an answer, this option is chosen by 23.3 % of boys, and 20.8 % of girls. Boys more often than girls mention the “right person” as a prerogative for first intercourse (6.7 % of boys, 2 % of girls). Desire is mentioned by 2.7 % of boys and 1.1 % of girls.

**Practice**

**Sexual Contacts and Sexual Intercourse**

Sexual contacts such as kissing, petting and oral sex had 85.7 % adolescents. Girls had fewer sexual contacts than boys. Only 51.2 % of girls kissed, compared to 86.2 % of boys (mean age 13.5 yrs). Petting experienced 48.4 % girls (66.6 % boys) (mean age 15.1 yrs). Oral sex had every fifth girl (21.9 %) and one third of boys (38.8 %) (mean age 15.7 yrs.). Complete sexual intercourse had one third of girls (36.5 %) and about half of boys (55.6 %). In the survey conducted in year 2008, first sexual intercourse adolescents had at the mean age of 16.1 yrs, which is similar age compared to the year 2000 (16.14 yrs). Boys start with sexual intercourses earlier (15.8 yrs), than girls (16.38 yrs). Sexual activity of the adolescents was higher in year 2008 – 44.2 % of adolescents had sexual intercourse, compared to the year 2000 (36.6 %) (Tab. 2, 3). Sexual activity of adolescents in the 15/16 years of age group was more intensive (Tab. 4). Girls had first sexual intercourse more often when in steady relationship (84.3 %) than boys (42.8 %). Boys had first intercourse in casual affair more often than girls (35.5 % vs. 12.2 %). Every

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**Table 2: Sexual activity of high school adolescents and average age of first sexual intercourse**

<table>
<thead>
<tr>
<th>Year</th>
<th>Boys</th>
<th>Girls</th>
<th>Together</th>
<th>IV grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sexually active</td>
<td>1. Intercourse (mean age)</td>
<td>Sexually active</td>
<td>1. Intercourse (mean age)</td>
</tr>
<tr>
<td>2000</td>
<td>43.2%</td>
<td>15.9</td>
<td>30.6%</td>
<td>16.45</td>
</tr>
<tr>
<td>2008</td>
<td>55.6%</td>
<td>15.8</td>
<td>36.5%</td>
<td>16.38</td>
</tr>
</tbody>
</table>
fifth boy had first intercourse with a girl that he was with for that time only (20.7 %), which is much more often than girls (3.4 %).

**Reasons for Onset of Sexual Activity**

Girls quote love as main reason for sexual intercourse (75 % in 2000, 77 % in 2008), whereas boys quote sexual desire as main reason (2008 – 63.7 %, 2000 – 45.4 %). Boys start with sexual activity because “love” less often today than 8 years ago – today only every third boy compared half of the boys from the survey in 2000. Curiosity as motivation for the onset of sexual activity is on the third place – today less often in both sexes than before. The rest of the reasons are mentioned rarely (“when partner insisted” – 1.9 % [3.6 % of girls eight years ago]). This was a multiple choice question.

About half of the adolescents had one sexual partner (44.2 % of boys and 58.6 % of girls). One fifth of adolescents had two sexual partners – 20.8 % of boys and 22.7 % of girls. More than 5 partners had 19.3 % boys and 6 % girls. Average number of partners was 2.12 (girls 2.02, boys 2.24).

**Use of Contraception**

The majority of adolescents that used contraception decided in favor of condom – 58.1 %, and one quarter used a combination of several means of contraception – 26.1 %. Interrupted intercourse was practiced by only 8.9 % of adolescents, which is good, but contraceptive pill was used by only 1.5 % of adolescents, whereas intrauterine device was not used. “Morning after pill” was used in only 1 %, fertile days in 0.5 %. Only 57.3 % of adolescents use contraception regularly, 40.7 % use it sometimes and 2 % have never used it. This is much better situation than in 2000, when 22.8 % of sexually active adolescents have never used contraception. 8 years ago 95 % of the adolescents that used contraception used condom, 2.3 % contraceptive pills, 4.7 % spermicides and 1.2 % rhythm method. The adolescents most often decide of contraception method together (53.7 %), which is stated by the girls in 61.4 %, and by the boys in 45.7 %. Boys in the same percentage state that they decide what contraception to use by themselves in 45.7 % (girls in only 18.7 %). Girls had recommendation of gynecologist in 14 % of cases. Only 3.6 % of adolescents state that their partner decided about the method of contraception. Objections to contraception expressed 16.5 % of sexually active pupils. Every third pupil who has an objection to contraception states that it is too expensive, has adverse effects (27.3 %) and intimidation while purchasing (22.7 %). The rest of the answers encompassed “it bothers me” (10.6 %), and “the condom broke” (4.5 %). One girl declared that the cycle became irregular after the use of contraceptive pill and allergy occurred in one case. Adolescents were asked about their opinion on the time and place where it would be most convenient to get the contraception. Vast majority opted for pharmacies as the best place to get contraception both in 2008 (girls 90 %, boys 80.7 %) and 2000 (girls 82 %, boys 72.1 %). Boys mention small shops in 11.4 % (2008)/14.2 % (2000), “machine” (15.6 %), whereas girls mention consultations with gynecologist (5.6 %). The rest of the answers have frequency of less than 2 % – all places, markets, schools, automats (3 boys).

Of all sexually active pupils in only 5 cases an unwanted pregnancy occurred (1.2 %) and they all ended in ToP. Sexually transmitted diseases occurred in two boys and four girls (1.5 %), 2 boys and 9 girls developed “psychological trauma” (2.7 %), and one boy and one girl had fear of pregnancy.

**Discussion**

In population of the Republic of Serbia in year 2007 there were 6.05 % of adolescents aged 15–19 years (boys 3.09 %, girls 2.95 %), and in the Province of Vojvodina, that percentage is 6.27 % (3.21 % girls and 3.06 % boys) [4].

Sexual activity among adolescents in Serbia grows, which is manifested by higher proportion of adolescents under 15, who are sexually active [5]. In this study about one fifth of the population under 15 had sexual intercourse in 2008 (20.73 %; 30 % of boys and 14.2 % of girls). In Germany 33.5 % of boys and 22.5 % of girls are sexually active [6]. One third of young people of this age in England, Scotland and Ukraine have already become sexually active, as well as about one fifth of them in Spain, Poland, Hungary, Czech Republic, Croatia, and Macedonia (FYRM) [6–9]. In the autonomous province of Vojvodina, northern Serbia, in year 2000 about 3 % of young people at the age 13 and 14 were sexually active, and they were all boys [10]. Young people in Serbia become sexually active at the mean age of 16 [11], which is confirmed in this study as well – in 2008 mean age of first sexual intercourse was 16.1 years. In the period 1982–1991 mean age of first sexual intercourse in Serbia was 17.55 years [12], in the period 1995–1997 16.9 years [13], and in 2000 16.14 years [3]. Average age of the first intercourse of 16.1 years is one of the lowest in Europe – in Island it is 15.7, in Germany 16.2, in Austria 16.3, in The Netherlands and Sweden 16.4 [14]. In 2004, general conclusion was that the young people between 16 and 20 years become sexually active earlier, with the
mean age of 16.5 years [14]. According to the WHO report in 1997, mean age of first sexual intercourse in Germany was 16.2, in The United States of America it was 15.8, in France 16.8, while in The Netherlands it was higher than today – 17.7 [15].

In Serbia, in 2008, 44.2 % of adolescents between 15 and 19 years had sexual intercourse (girls 36.5 %, 55.6 %). In the United States of America, in 2007, 48 % of high school pupils had sexual intercourse, and 15 % of them had 4 and more partners [16]. In Serbia in 2008, 19.3 % of adolescent boys and 6 % of girls had more than five partners.

In the structure of all the deliveries, according to the official statistics, in Serbia 7.3 % of all the puerpera are younger than 20 years of age. In the USA in 2002, there were 12 % adolescent puerpera [17]. Birth rate of girls aged 15–19 in Serbia was in 2007 17.4/1000 women of the same age [5], which places Serbia in the group with low birth rates (10–19.9). The lowest birth rate is in Japan (3.9 %), and the highest in the developed countries group is in the USA (54.4 %) [18]. In Europe the birth rates are between 5.39 in Switzerland [6], 16.1 in Sweden, 16.2 in Iceland, 18.4 in Finland, to 39 in Bulgaria [9]. There are no reliable data on abortions in Serbia, because there is no adequate registration in the private practices (underreporting). According to the official data of the Statistical Office of the Republic of Serbia [19], the rate of adolescent abortions in the 15–19 years age group has slightly decreased from 5.1 in 1999 to 4.1 in 2006. The adolescent pregnancy rate in this age group has increased from 13.6 pregnancies on 1000 girls in 1999 to 21.0 in 2006, which is considered to be low pregnancy rate (20–39.9). In Europe pregnancy rates are between very low (12.38) in Italy to moderate (64.73) in Russia [6]. During the last sexual intercourse, 78.4 % of adolescents used contraception in Serbia. In the last year, one third of adolescents used unreliable methods of contraception – rhythm method and interrupted intercourse [11]. In this study, in Vojvodina in 2008 contraception is used more than eight years ago – only 3.5 % of adolescents never used contraception, whereas 8 years ago 22.6 % of adolescents did not use it. In the 15–19 age group, majority use condoms – 84 %, due to extensive campaigns for HIV and AIDS prevention. Condoms are mentioned as a protection of STI in 62.7 %. Prejudices towards combined oral contraception (COC) and IUD still exist, and COC was used only by 1.5 % of adolescents, urgent contraception by 1 %, and none used IUD. Interrupted intercourse was practiced by 8.9 % of adolescents, whereas rhythm method used only 0.5 %.

Sexual activity of adolescents at high school in the northern region of Serbia, province of Vojvodina, has increased – more adolescents in the age group 15–19 years practice sex in 2008 than eight years ago (44.2 % vs 36.7 %), at similar age (onset 16.1, compared to 16.14), and girls have more sexual partners than 8 years ago (2. vs 1.7). Only 2.2 % of girls in the age group 16–17 years were sexually active in 1964, in 2000 there were 26.2 % of them [20], and in 2008 34 %.

Early sexual activity of adolescents cannot be prevented, as many studies have showed but the use of contraception can be improved by educating them of the benefits of their use, to talk about sex more freely, to use facilities of primary health care and counseling services and to organize sexual education in schools. Countries that have the smallest percentage of adolescent pregnancies and abortions are those countries where sex is not a taboo, sexuality is an intrinsic part of life, sexual education is taught in schools, youth friendly counselling services are organized in which non-judgmental educated staff is available to adolescents, providing them with information and advice, and where different methods of cheap or free modern contraception are available to everybody [21]. There is strong evidence that school-based sexuality education can be effective in reducing sexual risk behavior and it is neither associated with increased sexual activity nor does it increase risky sexual behavior. Sexual education is mandatory in Austria, Belgium, Czech Republic, Slovakia, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Latvia, Luxembourg, Estonia, Netherlands, Norway, Portugal and Sweden [9].

There is no sexual education in Serbian schools, sexuality is not openly dis-
as far as use and knowledge of contraception is concerned, as well as knowledge on some STIs (hepatitis B, C and chlamydial infections among girls) compared to 8 years ago, which is a result of action undertaken in this area, but there is still great need for a universal education of adolescents in schools, at earliest age possible.

Educational campaigns addressing safe sexual behavior appear to be working. It is of utmost importance to develop programmers and strategies, give appropriate information, improve “youth friendly” adolescent contraceptive services and organize sexual education in schools.

### Conclusion

Sexual activity of high school adolescents in northern Serbia is intensifying, they start sexual activity earlier than before, but use contraception more, especially condom. There is prejudice against hormonal contraception which is rarely used at this age, but among older population as well. There is not enough knowledge about significant sexually transmitted diseases (chlamydia, HPV, herpes). Sexual education in Serbia does not exist in schools, but education of adolescents is organized through lectures at schools, as well as peer education, developing and spreading youth friendly services throughout country, with the aim of decreasing the number of abortions that is still high in our country, as well as decreasing number of STD and preserving reproductive health of adolescents.

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