

# Secondary school youth's knowledge of sexually transmitted diseases

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## SUMMARY

**Introduction.** The youth are particularly vulnerable to contracting sexually transmitted diseases. Educators' influence and health education seem to be effective tools to protect the group. The purpose of the study is to evaluate the level of secondary school student's knowledge of sexually transmitted diseases.

**Material and methods.** A group of young people learning in a secondary school in Sandomierz formed the study population (300 students). A diagnostic survey was the research method, while a proprietary questionnaire consisting of 25 closed questions concerning knowledge and opinion was the research technique.

**Results.** In the studied group girls revealed greater knowledge of sexually transmitted infections. The level of knowledge among students of classes with extended curriculum in biology and chemistry was higher than that of students attending classes with other extended curricula. School and the Internet were mentioned as the most common sources of knowledge of the issue. The majority of the respondents evaluated their level of knowledge of STD as satisfactory.

**Conclusions.** Students' knowledge of sexually transmitted diseases is insufficient. The results presented in the paper could be used to improve school curricula. They help to identify the areas where the knowledge level is the lowest and needs improvement.

**Key words:** Sexually Transmitted Diseases; Health Knowledge; Attitudes; Practice; Students; Adolescent

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## INTRODUCTION

Sexually transmitted diseases (STD) mainly spread through sexual contacts. They can pass from the mother to the baby during pregnancy and labour [1,2]. Young people are particularly vulnerable to venereal diseases. A lack of relevant health care, support and knowledge, which are indispensable components of proper sexual development, contribute to the status quo. STD prevention, as a very important component of sexual education, should include information about safe intercourses and discuss STD risk factors [3].

According to the data of the World Health Organisation (WHO) over one million of sexually transmitted diseases are contracted every day [1]. One should note that young people, who constitute 25% of sexually active society, cover about 50% of all newly-contracted sexually transmitted diseases [4]. There is an obligation for physicians to report new infections to the Central Register of Sexually Transmitted Diseases. The most commonly reported infection is *Chlamydia trachomatis*, whereby 73% of all cases are reported in young people aged 15-24, in particular among young women aged 15-19 [5].

In order for STD prevention to be successfully implemented among young people it is essential to learn their knowledge level of the issue. Proper education of this social group is extremely important due to that fact that according to WHO as much as 41% of people under 25 do not use any contraceptive measures during intercourses [5].

## Characteristics of the youth as a social group

Pubescence is a transition period between childhood and adulthood. Pubescence, or adolescence, is the time when physical, mental and social changes occur to prepare a young person to take social roles when they become adults.

The period is described as most difficult and among most important in human life, during which life attitude and stance develop and fix [6]. The World Health Organisation defines the youth as people between 10 and 19 years of age [7]. On this stage important changes occur leading to mental, social and biological maturity [8, 9]. Puberty is the period when sexual maturity is shaped. From the sexuality point of view biological, reproductive, sexual and psychosexual maturity can be differentiated. Nearly each of them occurs within a specific age frame. The period of changes in the sexual area tends to be stormy and often not easy. The newly acquired information and news is often shameful and embarrassing for young people and that is why young people often get the information on the topic from the Internet, where they can remain anonymous [10].

Considering the process of physical and biological pubescence of young people, they are particularly exposed to infections of the urogenital system and STD. The presence of immature metaplastic cervix epithelium, which is at high risk of sexually transmitted oncogenic cervix cancer factors, is of great importance in girls [11]. Sexuality of adolescents is also related to health problems caused by risky behaviour. The behaviour means premature sexual initiation, taking psychoactive drugs, behaviour related to suicide and crime and eating disorders. Early sexual initiation entails taking contraceptive measures, which is less regular among young people, and consequently the risk of STI increases [12]. That is why monitoring the youth's knowledge, and analysing and implementing relevant measures meant to improve the situation are so important [13].

Adequate sexual education makes a significant aspect of the right course of adolescence.

## AIM

The purpose of the study was to check the knowledge that young people in Polish secondary schools have of sexually transmitted diseases and to evaluate and compare the knowledge that girls and boys have, taking their age and school curriculum into account.

## MATERIAL AND METHODS

The study population included 300 secondary school students - 150 girls and 150 boys aged 16 to 18 (secondary school year 1 to 3) who voluntarily filled anonymous questionnaires.

A diagnostic survey was the research method, while the research technique involved a proprietary questionnaire composed of 25 closed questions, including 4 questions concerning the participant's data (profile, sex, age, and year). The questionnaire included 7 general questions about sexually transmitted diseases and evaluation of one's knowledge of the issues mentioned in the questionnaire. The survey participants included students from classes with extended curricula in the humanities, mathematics and physics, mathematics and geography, and biology and chemistry. The study assumed 5 hypotheses, which were verified with a statistical analysis.

Two computer programmes were used for statistical processing of the study results. The results of the questionnaires were entered into Excel and grouped appropriately. The data prepared this way were transferred to IBM SPSS Statistics 20. ANOVA and Chi-Square-Test were used to check the statistical significance.

## RESULTS

The study population included 300 people - 50% females and 50% males aged 16 - 18. The majority of the sixteen-year-old respondents were women (48%), while men constituted 38% and 26% of the group of seventeen- and eighteen-year-old ones, respectively. Table I presents per cent share of the respondents divided according to sex, age, curriculum and year at school.

ANOVA statistical analysis and Chi-square test were used to check the statistical significance. Only the statistically significant questions were selected ( $p < 0.05$ ). Eleven questions which demonstrated statistically significant difference in the respondents' knowledge depending on age were selected ( $p < 0.05$ ). The analysis proved that women had greater knowledge of STD. Girls knew statistically more about vaccination against HPV, complications related to chlamydia infections and higher risk of concluding STD among women ( $p < 0.001$ ). Female respondents were also better informed than boys about ways to contract hepatitis B and about pathogens promoting development of cervix cancer ( $p < 0.05$ ). The mean result of females' answers to some questions was nearly twice higher than the mean results of males (Tab.2.).

The statistically most important questions ( $p < 0.001$ ) were related to sexually transmitted diseases, microbes which cause STD, consequ-

**Tab. 1.** Per cent share of the respondents according to sex, age, curriculum and year at school

	Women (n=150)		Men (n=150)		Total	
	N	%	N	%	N	%
<b>Age</b>						
16 years old	72	48	54	36	126	42
17 years old	47	31,3	57	38	104	34,7
18 years old	31	20,7	39	26	70	23,3
<b>Extended curriculum</b>						
biology and chemistry	94	62,7	35	23,3	128	42,7
mathematics and physics	26	17,3	73	48,7	99	33
mathematics and geography	11	7,3	25	16,7	37	12,3
humanities	19	12,7	17	11,3	36	12
<b>Year</b>						
1	69	46	51	34	120	40
2	47	31,3	60	40	107	35,7
3	34	26,7	39	26	73	24,3

**Tab. 2.** Dependence of the knowledge of STD on sex

Variables		N	Mean	Standard deviation	df	F	Statistical significance
Vaccination against STD	women	150	0,51	0,50163	1	29,046	0,001
	men	150	0,22	0,41563	298		
Complications of chlamydia infections	women	150	0,59	0,49408	1	18,300	0,001
	men	150	0,35	0,47750	298		
Hepatitis B virus infection	women	150	0,87	0,33371	1	5,211	0,023
	men	150	0,77	0,42008	298		
Pathogen promoting development of cervix cancer	women	150	0,40	0,49154	1	6,082	0,014
	men	150	0,27	0,44370	298		
Exposure to STD vs sex	women	150	0,55	0,49881	1	11,662	0,001
	men	150	0,36	0,48161	298		
STD symptoms	women	150	8,83	2,41199	1	32,570	0,001
	men	150	7,35	2,06647	298		
STD causing microorganisms	women	150	6,03	2,00809	1	17,265	0,001
	men	150	5,01	2,23753	298		
Symptoms of gonorrhoea	women	150	5,14	1,53277	1	4,509	0,035
	men	150	4,77	1,51244	298		
Consequences of untreated syphilis	women	150	4,53	1,11528	1	12,113	0,001
	men	150	4,97	1,07408	298		
Risk factors of vaginal fungal infection	women	150	4,16	1,02374	1	11,860	0,001
	men	150	3,76	0,98771	298		
Evaluation of accuracy of statements concerning STD	women	150	5,69	0,65484	1	15,448	0,001
	men	150	5,35	0,85911	298		

**Tab. 3.** Respondents' total knowledge vs sex (ANOVA)

Variables	N	Mean	Standard deviation	Minimum	Maximum	df	F	Statistical significance
women	150	51,05	6,93	23,00	67,00	1	36,78	0,001
men	150	46,45	6,19	30,00	63,00	298		
Total	300	48,75	6,95	23,00	67,00			

ences of untreated syphilis, risk factors of vaginal fungal infections and accuracy of some statements concerning STD. The statistical significance of a question about gonorrhoea was  $p=0.035$ . According to the results, women had greater knowledge of STD. The mean of the answers given by women was higher than the mean results of males in the case of five out of six questions. Men revealed higher knowledge level of the consequences of untreated syphilis and reached the mean of correct answers of 4.97, which was by 0.44 point more than females (Tab.2.).

The analysis of data in Table 3 revealed that women know statistically more of STI than men do ( $p<0.001$ ). The mean of correct answers given by women was 51.05, while in the case of men it amounted to 46.45. The conclusions corresponded to the ones presented based on Table 2 (Tab.3.).

Seven questions which revealed statistical significance for the survey participants' age were selected. The highest statistical significance  $p<0.001$  applied to the question on the sex which is more exposed to STD. The highest number of correct answers was given by eighteen-year-old students, followed by sixteen-year olds, while the knowledge level among the students at the age of seventeen was definitely lower. The statistical significance of other questions was  $p<0.05$ . In one of the questions the respondents were asked to select behaviour which promotes syphilis infection. The highest number of correct was given by eighteen-year-old students, followed by seventeen-year olds. Sixteen-year-old students selected the fewest correct answers. The mean of correct answers to the question concerning hepatitis B virus infection was the highest for students at the age of eighteen and the lowest for the group of seventeen-year-old ones. The respondents were asked to select correct answers concerning sexually transmitted microorganisms. The mean of the answers given by eighteen-year-old students was the highest (0.60), while it was the lowest for seventeen-year-old students (0.30). Based on the presented results a conclusion was drawn that eighteen-year-old students had the vastest knowledge of sexually transmitted diseases, while the knowledge level of the issue among seventeen-year-old students was the lowest (Tab.4.).

One question applied to STD symptoms. The difference in the mean of answers among sixteen- and eighteen-year-old students was low (8.39 and 8.37, respectively). The respondents

aged seventeen gave the fewest correct answers. Another question concerned STD risk factors. There was no statistical difference between sixteen- and eighteen-year-old students, but the difference could be observed for seventeen-year-old students who gave the lowest number of correct answers. Students at the age of eighteen provided most of the correct answers to a question about ways to contract HIV, while the number was the lowest for sixteen-year-old ones (Tab.4.).

Based on the presented results it was concluded that students aged 17 had the lowest knowledge level of STD. The knowledge level of STD was higher among sixteen-year-old students, while the respondents at the age of eighteen gave the highest number of correct answers.

A statistically important difference in the students' knowledge of sexually transmitted diseases was observed between seventeen- and sixteen-year-old students versus the eighteen-year-old ones. Students at the age of eighteen had the greatest knowledge of STD. Students aged sixteen revealed slightly lower knowledge level than the oldest respondents. The study participants at the age of seventeen had the poorest knowledge of STD. Similar conclusions were drawn based on Table 5. (Tab.5.).

Eight questions were selected for ANOVA statistical analysis. The statistical significance of the questions was  $p<0.05$ . The highest statistical significance ( $p<0.001$ ) applied to the question about the sex which is more exposed to STD. The 3rd year students gave the highest number of correct answers, while the 2nd year students gave the fewest correct answers. The same relationship was true for two subsequent questions concerning behaviour which promotes infection with syphilis and hepatitis B virus. The smallest number of correct answers to the question concerning the pathogen promoting development of cervix cancer was provided by the 1st year students. The analysis revealed that the 3rd year students had greater knowledge of STD (Tab.6.).

The highest statistical significance ( $p<0.001$ ) is related to the question about STD risk factors. The 1st and 3rd year students on average gave a very similar number of correct answers (4.39 and 4.38), while the 2nd year students provided more incorrect answers. The majority of correct answers about STD were given by the 1st year students, followed by the 3rd year students, while the number of correct answers to the question was the smallest among the 2nd

year students. The majority of correct answers to the following two questions concerning the ways to contract HIV and risk factors of vaginal fungal infection were given by the 3rd year students, while the 1st year students had the poorest result (Tab.6.).

The analysis proved that the 3rd year students had the greatest knowledge about STD as compared to students from other years.

Based on the data presented in Table 7 a conclusion was drawn that the 3rd year students had the greatest knowledge of STD, with the mean of the answers of 50.78, while the 2nd year students revealed the poorest knowledge reaching the mean of 47.39 (Tab. 7.).

With regard to statistical calculations, among the extended curricula the biology and chemistry extended curriculum was identified as most relevant for the results. Other extended curricula (humanities, mathematics and geography and mathematics and physics) were taken together. Nine questions were selected for which the statistical significance was  $p < 0.05$ . Students from the classes with extended curriculum in biology and chemistry gave more correct answers to all the questions. The questions applied e.g. to vaccination against HPV, infection with hepatitis B virus, pathogen promoting development of cervix cancer and predisposition to STD infection depending on sex (Tab.7.).

**Tab. 4.** Relationship between knowledge of STD and sex

Variables		N	Mean	Standard deviation	df	F	Statistical significance
Behaviour promoting syphilis infection	16 y.o.	126	0,83	0,38114	2	4,529	0,012
	17 y.o.	104	0,88	0,33232	297		
	18 y.o.	70	0,97	0,16780			
Hepatitis B virus infection	16 y.o.	126	0,81	0,39424	2	3,853	0,022
	17 y.o.	104	0,77	0,42337	297		
	18 y.o.	70	0,93	0,25940			
Pathogen promoting development of cervix cancer	16 y.o.	126	0,25	0,43702	2	3,135	0,045
	17 y.o.	104	0,38	0,48886	297		
	18 y.o.	70	0,40	0,49344			
Exposure to STD vs sex	16 y.o.	126	0,51	0,50193	2	9,296	0,001
	17 y.o.	104	0,30	0,45963	297		
	18 y.o.	70	0,60	0,49344			
STD symptoms	16 y.o.	126	8,39	2,45266	2	4,339	0,014
	17 y.o.	104	7,55	2,14919	297		
	18 y.o.	70	8,37	2,38456			
STD risk factors	16 y.o.	126	4,33	1,13842	2	5,012	0,007
	17 y.o.	104	3,95	0,86327	297		
	18 y.o.	70	4,36	0,99325			
Ways to contract HIV	16 y.o.	126	6,38	1,10892	2	3,825	0,023
	17 y.o.	104	6,55	1,23760	297		
	18 y.o.	70	6,84	0,94233			

**Tab. 5.** Respondents' total knowledge vs age (ANOVA)

Variables	N	Mean	Standard deviation	Minimum	Maximum	df	F	Statistical significance
16 years old	126	48,42	6,94	23,00	66,00	2	3,07	0,048
17 years old	104	47,96	7,17	30,00	67,00	297		
18 years old	70	50,50	6,42	38,00	67,00			
Total	300	48,75	6,95	23,00	67,00			

Among the following questions, the highest statistical significance ( $p < 0.001$ ) was related to the ones concerning sexually transmitted diseases, microorganisms which cause STD, ways to contract HIV and risk factors of vaginal fungal infection. The greatest difference in the mean of answers (1.52) was observed for the question on the microbes which cause STD (Tab.8.).

Based on the presented results it was concluded that students from classes with extended curriculum in biology and chemistry possessed

more considerable knowledge of sexually transmitted infections.

The knowledge level of STI was higher among students of classes with extended curricula in biology and chemistry as compared to other curricula. The demonstrated statistical significance amounts to  $p < 0.001$ . The mean of correct answers among students from classes with extended curricula in biology and chemistry was 51.21, while in the case of students from classes with other curricula it was by over 4 points lower (46.89). (Tab.9.)

**Tab. 6.** Relationship between knowledge of sexually transmitted diseases vs year at school

Variables		N	Mean	Standard deviation	df	F	Statistical significance
Syphilis infection promoting behaviour	1 <sup>st</sup> year	121	0,83	0,38030	2	4,571	0,011
	2 <sup>nd</sup> year	107	0,87	0,33881	297		
	3 <sup>rd</sup> year	72	0,97	0,16549			
Hepatitis B virus infection	1 <sup>st</sup> year	121	0,82	0,38730	2	4,566	0,011
	2 <sup>nd</sup> year	107	0,76	0,43091	297		
	3 <sup>rd</sup> year	72	0,93	0,25599			
Pathogen promoting development of cervix cancer	1 <sup>st</sup> year	121	0,25	0,43361	2	3,408	0,034
	2 <sup>nd</sup> year	107	0,38	0,48845	297		
	3 <sup>rd</sup> year	72	0,40	0,49390			
Exposure to STD vs sex	1 <sup>st</sup> year	121	0,51	0,50192	2	10,866	0,001
	2 <sup>nd</sup> year	107	0,29	0,45577	297		
	3 <sup>rd</sup> year	72	0,61	0,49092			
STD symptoms	1 <sup>st</sup> year	121	8,50	2,42942	2	6,488	0,002
	2 <sup>nd</sup> year	107	7,45	2,13786	297		
	3 <sup>rd</sup> year	72	8,38	2,38798			
STD risk factors	1 <sup>st</sup> year	121	4,39	1,10583	2	8,365	0,001
	2 <sup>nd</sup> year	107	3,89	,89366	297		
	3 <sup>rd</sup> year	72	4,38	,98492			
Ways to contract HIV	1 <sup>st</sup> year	121	6,40	1,08458	2	4,228	0,015
	2 <sup>nd</sup> year	107	6,49	1,26166	297		
	3 <sup>rd</sup> year	72	6,88	,93353			
Risk factors of vaginal fungal infections	1 <sup>st</sup> year	121	3,87	,99952	2	3,162	0,044
	2 <sup>nd</sup> year	107	3,89	1,04905	297		
	3 <sup>rd</sup> year	72	4,22	,99608			

**Tab. 7.** Students' total knowledge vs year at school (ANOVA)

Variables	N	Mean	Standard deviation	Minimum	Maximum	df	F	Statistical significance
1 <sup>st</sup> year	121	48,74	6,63	35,00	66,00	2	5,25	0,006
2 <sup>nd</sup> year	107	47,39	7,39	23,00	67,00	297		
3 <sup>rd</sup> year	72	50,78	6,37	38,00	67,00			
Total	300	48,75	6,95	23,00	67,00			

## DISCUSSION

Sexual education and making young people aware of sexually transmitted diseases and their consequences is extremely important. In order to implement valid forms of education it is necessary to carry out high quality studies focusing on the knowledge that different age groups have of sexually transmitted diseases.

The greatest number of studies checking students' knowledge of sexually transmitted diseases is related to HIV, AIDS and HPV issues. They are definitely of high importance but other STD are also worthy of attention, because information about them is not so widespread and commonly discussed as in the case of HIV and AIDS.

The main objective of the study was to check the young people's knowledge of sexually trans-

mitted diseases. The obtained results suggest that students' knowledge level of STD related issues is not significant. The results of the research are presented below and compared with the results from other studies.

Based on data presented by Borges et al. over 20% of teenagers aged 12-17 in Brazil had already experienced sexual initiation, whereby as much as 50% of seventeen-year-old participants of the study had already had their first sexual intercourse. The authors also quote that in 2012 28.7% of students at the age of 13-15 began their sexual initiation. According to the authors, the age when students start their sexual life is determined by sex, region of residence and kind of school that young people go to [14]. Gonçalves H. et al. also presented worrying findings concerning early sexual initiation. The study population included 4325 teenagers,

**Tab. 8.** Knowledge of sexually transmitted diseases vs school curriculum

Variables		N	Mean	Standard deviation	df	F	Statistical significance
Vaccination against an STD	O	171	0,30	0,45620	1	8,848	0,003
	E	129	0,46	0,50012	298		
Infection with hepatitis B virus	O	171	0,79	0,41298	1	4,344	0,038
	E	129	0,88	0,33090	298		
Pathogen promoting development of cervix cancer	O	171	0,29	0,45348	1	3,942	0,048
	E	129	0,40	0,49083	298		
Exposure to STD	O	171	0,40	0,49204	1	4,568	0,033
	E	129	0,53	0,50121	298		
STD symptoms	O	171	7,71	2,35569	1	10,964	0,001
	E	129	8,60	2,27904	298		
Microorganisms causing STD	O	171	4,87	2,15730	1	40,115	0,001
	E	129	6,39	1,90522	298		
Ways to contract HIV	O	171	6,33	1,21268	1	14,807	0,001
	E	129	6,83	,94476	298		
Risk factors of vaginal fungal infections	O	171	3,78	1,03183	1	12,241	0,001
	E	129	4,19	0,96887	298		
Evaluation of accuracy of statements concerning STD	O	171	5,42	0,89941	1	7,291	0,007
	E	129	5,66	0,56591	298		

O - other extended curricula; E - extended curriculum in biology and chemistry

**Tab. 9.** Suma wiedzy respondentów a nachylenie profilowe (ANOVA)

Variables	N	Mean	Standard deviation	Minimum	Maximum	df	F	Statistical significance
O	171	46,89	6,93	23,00	67,00	1	31,28	0,001
E	129	51,21	6,20	35,00	67,00	298		
Total	300	48,75	6,95	23,00	67,00			

O - other extended curricula; E - Biology and chemistry

18.6% of whom reported that they had had their first sexual intercourse before the age of 15 (16.4% of boys and 14.8% of girls). Sexual initiation at an early age is among STD risk factors and that is why sexual education in this age group is so important [15]. Finer and Philbin in their studies on sexual initiation among young people revealed that as much as 52% of the youth starting their sexual life before the age of 15 do not use any contraceptive measures [16]. Moreover, research carried out among teenagers in Taiwan showed that early sexual initiation was related to a number of behaviour problems, especially among young women [17]. The data are worrying and attract attention to the need to introduce sexual education from the very young age.

Studies by Genz et al. provide information about the students' knowledge of sexually transmitted diseases. The study population included 532 teenagers aged 10 to 19. An anonymous questionnaire concerning STD was used. The studies revealed that 89.2% of the girls and 90.3% of the boys could define the notion of sexually transmitted diseases. 38.1% of the girls and 44.8% of the boys gave correct answers on STI. In the authors' own studies and in the studies presented by Genz over 90% of the respondents said correctly that sexual relations are a risk factor of STD infections. Only 8.8% of the study participants said that breastfeeding may cause STD infection, as compared to 23.7% of correct answers given by students in the authors' study. When asked if STD can be transmitted by shaking hands with an infected person, 98% of the respondents in both studies gave negative answers [18].

Similar research carried out by Drago et al. concerns the knowledge of sexually transmitted diseases among Italian teenagers. The study population included 2,867 people aged 14-21. Similarly to the result of this study, the survey participants revealed insufficient knowledge of HPV. Only 32% of the people indicated HPV as a potentially carcinogenic infection. 17% of the respondents knew that there is vaccination against HPV. It is worrying that only 15.5% of the students knew that one sexual intercourse without protection suffices to contract an STD. Contrary to own studies it turned out that Italian teenagers had more limited knowledge of HIV as compared to HPV [19].

A study by Samkange-Zeeb et al. was published in 2011. The study focuses around young European people's awareness and knowledge of sexually transmitted diseases, based on literatu-

re. The results were developed on the basis of 15 studies carried out between 1990 and 2000. The study population included people aged 13 - 20. It was concluded that young people had limited knowledge of STD. The respondents demonstrated greater knowledge of HIV and AIDS. The study carried out by Samkange-Zeeb et al., similarly to own studies, showed that girls possessed more considerable knowledge of STD. The respondent's knowledge level in the reference studies was lower than the knowledge level of the participants of the authors' study. The period in which the reference studies were conducted could affect the result: from 1989 to 2000. At present, educational materials are widely available. Despite a significant difference in the conducted studies, young people's knowledge of sexually transmitted diseases is still insufficient [20].

The results of studies carried out in a group of 8,155 teenagers and young people in Nepal on their knowledge of sexually transmitted diseases were published in 2013. Based on the presented results it can be concluded that mass media are among most important sources of developing awareness of STD and their prevention. Introducing sexual education focusing on sexually transmitted diseases to radio and television can help to improve the knowledge level among the youth [21]. The respondents' in the authors' studies mentioned the Internet followed by school as the main sources of knowledge of STD. Only 17.3% of the students said that their parents were their source of information. Studies carried out in a population of Afro-American youth revealed that parents' greater involvement in sexual education of their children reduces the frequency of the children's contracting STD [22]. It shows the extremely important role that parents have to play in educating the school youth. The studies by Ethier et al. carried out in a group of 533 teenagers proved that correct relationships of teenagers with their mothers can have a positive impact on the teenagers' knowledge concerning sexual initiation and reduce the probability of risky sexual behaviour among the youth [23]. In the studies by Genz et al. the participants were asked who they talk to about sexual relations and who provides them with knowledge about STD. In response to both questions girls mentioned their mothers (69.4% and 69.8%, respectively). Boys talked to their friends about sexual relations (54.8%), while conversations about STD were most often held with their mothers (57.7%). Completely diffe-



rent results were obtained in own studies where only 17.3% of students gained information about STD from their parents. The answers related to the ways of finding knowledge of STD varied. In the studies by Genc et al. as much as 60.4% of girls said they gained knowledge of STD at school, while only 54.3% of boys gave the same answer. In the authors' study, when asked about the source of knowledge of STD the majority of the respondents mentioned school (69.7%) and the Internet (61.3%). 24% of students got information from magazines or medical books, as compared to 38.1% of the girls and 30.9% of the boys in the study by Gen et al. The studies conducted by Genz et al. show that the Brazilian youth seek information about sexual health from reliable sources, i.e. teachers and parents. The data are optimistic considering the fact that contemporary parents spend less time with their children and shift the whole responsibility onto school. Remembering the results it is worth ensuring as high level of education at schools as possible. [18]. In the studies by Drago et al. 95% of the students claimed that school should play the main role in education about STD but they also admitted that the education they received was insufficient for 36% of them and sufficient for 32%. 23% of the students admitted that sexual education was not provided by their schools [19].

The respondents' subjective assessment of the knowledge versus the results of the studies is also worth analysing. The authors of the study asked the students to assess their knowledge level of STD. 57.3% of the study participants assessed their knowledge level as insufficient. In the study by Drago et al. 53% of the respondents declared that they had sufficient knowledge to avoid contracting an STD [19].

The analysis of the results of the published studies and their comparison with conclusions

drawn from own studies make us realise that the youth's knowledge of STD is insufficient. Young people demonstrate the will to extend their knowledge of health and sex issues and sexually transmitted diseases. With regard to the gradually decreasing age of sexual initiation, sexual education should be introduced as early as possible. Reproductive health makes a very important aspect of a young person's life and that is why effective treatment of sexually transmitted diseases is as important as enhancing the society's knowledge of their prevention.

## CONCLUSIONS

1. Based on the study conducted it was concluded that the respondents' knowledge of sexually transmitted diseases is insufficient. The lowest knowledge level is related to HPV and chlamydiosis.
2. Girls demonstrated the greatest knowledge of STD. Generally, eighteen-year-old students had the vastest knowledge of STD, while the knowledge revealed by the seventeen-year old ones was most limited.
3. The knowledge level among students from classes with extended curriculum in biology and chemistry was higher than among students from classes with other curricula.
4. The most common sources of STD knowledge for the youth are the school and Internet.
5. The results presented in the paper could be used to improve school educational programmes. The results enable identification of the areas where students' knowledge is limited and needs improvement. It is worth investing in the education of the youth and to ensure good conditions to extend their knowledge e.g. via a long-term general Polish educational programme.

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