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# Attitudes, Behaviour and Knowledge on Sexuality among Female Adolescents in Zagreb, Croatia

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## ABSTRACT

*The aim of this study was to estimate the level of knowledge about sexuality, attitudes and sexual behaviour of female adolescents. The study included 194 female students, 117 from Medical High School (MHS) and 77 from General High School (GHS) in Zagreb. Data was collected using an anonymous self-administered questionnaire. In addition to items on personal data (age, parental education etc.), the participants were asked to define terms about sexuality (e.g. menstruation, puberty) the definitions of which are found in biology textbooks for the fifth and eighth grade of primary school. The aim of the third part of the survey was to collect information about attitudes and behaviour of female adolescents. The results showed a low level of knowledge in students of both schools. General High School students showed a higher level of knowledge than their Medical High School peers. One fifth of General High School students and 1/3 of Medical High School students were unable to define the term »menstruation«. The majority of adolescents talk about sexuality with their friends, 92.1% of General High School and 81.2% of Medical High School students. Almost 50% of students of both schools would like to talk about sexuality with their school doctor. 6.9% of Medical High School students had at least one sexual intercourse while none of the General High School students had been sexually active at the time of the survey. As the majority of students were not sexually active and results showed a rather low level of knowledge, this seems to be the ideal period for the implementation of educational programs aimed at increasing the level of knowledge, and thus preventing unwanted consequences (STD, pregnancy, abortion, infertility).*

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## Introduction

Sexuality is one of the basic qualities of human life, important for individual development, happiness, health and survival of the human race<sup>1</sup>. In 1882 Kraftz-Ebing from Vienna did the first research related to human sexuality<sup>2</sup>. In 1903, Ellis et al. conducted a terminological survey on sexuality, in a large sample introducing in this way one of the methodologically grounded approaches. Revolution in the research of this area begins during the 60's, while in Croatia Zvonarević carried out such research in 1967<sup>3</sup>.

It is important to follow the attitudes and knowledge because they determine the behaviour of young people. An attitude is defined as readiness for positive or negative reaction to certain appearances or events. It is based on the experience and knowledge acquired during lifetime and adopted by learning in the process of socialisation. Information is filtered by learning, thus forming a positive or negative attitude according to the given information. Attitudes established in that manner are very difficult to change. Education represents the basic tool for prevention of inadequate sexual and other behaviour of adolescents<sup>4</sup>.

## Methods

The aim of the study was to estimate the level of knowledge on sexuality among first-year high school female students and obtain information about their attitudes and sexual behaviour. A total of 194 female students, mean age 15 0.5, were involved in this study, out of which 117 were from Medical High School (MHS), and 77 from General High School (GHS). With respect to different social and economic backgrounds of the students and differences in admission criteria for each school, the attempt was made

to find out possible differences between them in the level of knowledge and sexual behaviour. Information was obtained by using an anonymous self-administered questionnaire. The time for completion of the questionnaire was thirty minutes. The questionnaire included fixed-alternative (close) items and some open-end items divided into three groups: 1. Basic data (information on primary school, parental education, number of children in the family), 2. Knowledge about sexuality (what is puberty, menstruation, pollution, conception, changes in puberty in boys and girls, sexual organs, contraception, STD), 3. Attitudes and behaviour (with whom they talk or would like to talk about sexuality, are they sexually active). The second group of items was scored according to the definitions found in biology textbooks for fifth and eighth grade of primary school. The obtained results are shown in frequency tables separately for Medical School and General High School students. Differences between the groups were tested by hi square (  $\chi^2$  ) test. The value of  $p < 0.05$  was considered statistically significant.

## Results

Ninety-seven point four percent of General High School students and 59.8% of Medical High School students completed their elementary education in Zagreb. 67.6% of fathers and 54.6% of mothers of General High School students, and 23.9% of fathers and 15.4% of mothers of Medical High School students had university education. Even 24% mothers and 17.1% fathers of Medical High School students completed only primary school. Most of the students live in a family with two children (71.4% of GHS and 65% of MHS students).

»Puberty is a period of human life when sexual organs develop fast and other changes happen«<sup>5</sup>. Key words sco-

red were period, fast development, sexual organs, other changes. 13.7% of MHS and 1.3% of GHS students used none of the scored words,  $p < 0.01$  (Table 1).

»Menstruation is the separation of endometrial lining due to rupture of blood vessels which results with vaginal bleeding if fertilisation does not occur»<sup>5</sup>. Key words scored were separation, rupture of blood vessels, vaginal bleeding, and fertilisation. 31.6% of MHS students and 19.5% of GHS students used none of the scored words,  $p > 0.05$  (Table 2).

»Pollution is sporadic, uncontrolled nocturnal emission of sperm«<sup>5</sup>. Key words scored were sporadic, uncontrolled, nocturnal, emission, sperm. 29.9% of MHS and 27.3% of GHS students used none of the scored words,  $p > 0.05$  (Table 3).

»Fertilisation is a union of ovum and sperm«<sup>5</sup>. 40.2% of MHS and 6.5% of GHS

students were not able to define this term,  $p < 0.01$ .

The following terms for puberty changes were scored: a) for girls: breast development, pubic hair growth, menstruation, broadening of hips, psychological changes and b) for boys: voice change, pubic hair growth, pollution, broadening of shoulders, psychological changes. 6.8% of MHS and 3.9% of GHS students did not know any of the mentioned puberty changes. A similar distribution of answers applies to puberty changes in boys.

In two items, the participants in the survey were asked to list female and male sexual organs. The following terms were scored: vagina, uterus, fallopian tubes and ovaries for women and penis, scrotum and testicles for men. Vagina is the most frequently used term in 63.2% of MHS students and 59.7% of GHS stu-

**TABLE 1**  
DISTRIBUTION OF CORRECT ANSWERS TO THE QUESTION:  
»WHAT IS PUBERTY?«

Number of correct answers	General High School students		Medical High School students		P value
	n (77)	%	n (77)	%	
0	1	1.3	16	13.7	< 0.01
1	23	29.9	44	37.6	> 0.05
2	47	61.0	38	32.4	0.01
3	6	7.8	16	13.7	> 0.05
4	–	–	3	2.6	–

**TABLE 2**  
DISTRIBUTION OF CORRECT ANSWERS TO THE QUESTION:  
»WHAT IS MENSTRUATION?«

Number of correct answers	General High School students		Medical High School students		P value
	n (77)	%	n (77)	%	
0	15	19.5	37	31.6	> 0.05
1	25	32.4	40	34.2	> 0.05
2	28	36.4	31	26.5	> 0.05
3	9	11.7	9	7.7	> 0.05

**TABLE 3**  
DISTRIBUTION OF CORRECT ANSWERS TO THE QUESTION:  
»WHAT IS POLLUTION?«

Number of correct answers	General High School students		Medical High School students		P value
	n (77)	%	n (77)	%	
0	21	27.3	35	29.9	> 0.05
1	1	1.8	4	3.4	> 0.05
2 – 5	55	70.9	78	66.7	> 0.05

**TABLE 4**  
LIST FEMALE GENITAL ORGANS

Scored terms	General High School students		Medical High School students		P value
	n (77)	%	n (77)	%	
Vagina	46	59.7	74	63.2	> 0.05
Uterus	40	51.9	53	45.3	> 0.05
Ovarian tubes	36	46.8	17	14.5	< 0.05
Ovary	22	28.6	50	42.7	> 0.05

**TABLE 5**  
LIST MALE GENITAL ORGANS

Scored terms	General High School students		Medical High School students		P value
	n (77)	%	n (77)	%	
Penis	58	75.3	100	85.5	> 0.05
Testis	41	53.2	35	29.9	< 0.05
Scrotum	11	14.3	17	14.5	> 0.05

dents. 17.1% of MHS and 9.1% of GHS students did not list any female sexual organ,  $p > 0.05$  (Table 4) while 9.4% of MHS and 7.8% of GHS students did not know any of the male sexual organs,  $p > 0.05$  (Table 5).

In items on contraception methods, the following answers were scored: condom, diaphragm, IUD, oral contraceptives, foam, periodic abstinence, Billings' method. Eighty one point two percent of MHS and 93.5% of GHS students mentioned condom,  $p < 0.05$ ; term »pills« was

used by 72.6 % of MHS and 92.2% of GHS students,  $p < 0.01$ ; the term »foam« was used by 52.1% of MHS and 40.3% of GHS students,  $p < 0.05$ . 8.5% of MHS and 1.3% of GHS students did not know any of the contraception methods,  $p < 0.05$  (Table 6).

The last two questions in the second group were about sexually transmitted diseases (STD). STD taken into consideration was AIDS, gonorrhoea, syphilis, HPV, Chlamydial infections. According to expectations, the most frequent disease was AIDS, mentioned by 94% of MHS

**TABLE 6**  
CONTRACEPTION METHODS

Contraception methods	General High School students		Medical High School students		P value
	n (77)	%	n (77)	%	
Condom	72	93.5	95	81.2	< 0.05
Pills	71	92.2	85	72.6	< 0.01
Diaphragm	39	50.6	37	31.6	< 0.05
IUD	39	50.6	46	39.3	> 0.05
Foam	31	40.3	61	52.1	> 0.05
Periodical abstinence	4	5.2	2	1.7	> 0.05
Billings method	1	1.3	2	1.7	> 0.05

**TABLE 7**  
LIST SEXUALLY TRANSMITTED DISEASES (STD)

STD	General High School students		Medical High School students		P value
	n (77)	%	n (77)	%	
AIDS	65	84.4	110	94.0	< 0.05
Gonorrhoea	63	81.8	43	36.8	< 0.0001
Syphilis	58	75.3	97	82.9	> 0.05
HPV	4	5.2	1	0.9	> 0.05
Chlamydia	2	2.6	0	–	–

and 84.4% of GHS students,  $p < 0.05$ . Only 36.8% of MHS and 81.8% of GHS students mentioned gonorrhoea,  $p < 0.0001$  (Table 7).

The question of increased risk of contracting STD in the two sexes was answered as follows: *men* – 12% of MHS and 14.3% of GHS students, *women* – 38.5% of MHS and 27.3% of GHS students, and *both* – 49.5% of MHS and 58.4% of GHS students,  $p > 0.05$ . Explanation of answers was requested. When the answer was that men more often contract STD, some of the explanations were: »men are untidy«, »they change partners more often«, and when the answer regarded women, some explanations were »women are more sensitive«, »they start with sex

life earlier«, »their sexual organs are inside the body«!

The third group of items regarding attitudes and behaviour asked with whom the students most often talk and would like to talk about sexuality. Possible choice included: parents, brothers and sisters, friends, school doctor, and possible answers were: always, sometimes, never. The results show that the students most often talk about sexuality with their friends; answers »always« and »sometimes« were chosen by 81.2% of MHS and 92.1% of GHS students. 18.8% of MHS and 24.7% of GHS students never talk about sexuality with their parents. 42.7% of MHS and 49.4% of GHS students never talk about sexuality with their school

**TABLE 8**  
SEXUAL EXPERIENCE OF THE STUDENTS

Sexual experience	General High School students		Medical High School students	
	n (77)	%	n (77)	%
Never	77	100	103	88.0
Once	–	–	1	0.9
Periodical	–	–	7	6.0

doctor. The ratio was probably higher because 1/3 of female students left this question unanswered. Fifty one point three percent of MHS and 49.4% of GHS students answered that they would like to talk about sexuality with the school doctor. A high percentage of students left this question unanswered: 35% of MHS and 25.6% of GHS students. The last question referred to sexual experiences of female students. None of the GHS and 6.9% of MHS adolescents had at least one sexual intercourse at the time of the research; 5.1% of students left this question unanswered (Table 8).

## Discussion

In the last ten years, numerous studies about sexuality, attitudes, habits and behaviour of high school students were done. Their results mostly indicate a relatively low level of knowledge on the subject and early beginning of sexual life<sup>6,7</sup>. The level of knowledge of adolescent female participants in this research was relatively low. MHS students show lower level of knowledge than their GHS peers, which can be partly attributed to the different education level of their parents<sup>8</sup> and the fact that they completed elementary school in smaller towns in Croatia (40.2% of MHS students).

The results about STD show a considerable impact of the media. When asked about STD, most of the students men-

tioned AIDS, as expected, in view of the media attention focused on this problem during the last ten years. Similar distribution of answers was also shown in the research of Asuzu, where 85% of the subjects knew about AIDS, and only 7% knew the cause of the disease<sup>9</sup>, which shows that students have the information about the disease, but not the whole knowledge on transmission, causative organism and possibilities of protection. Most of the students did not mention HPV and Chlamydial infection as causative organisms of STD, although their prevalence in adolescence has significantly increased in the last years<sup>10</sup>.

The result showing that students usually talk about sexuality with their friends were expected, because adolescents mostly depend on the opinion of their peers<sup>11</sup>. In addition to their friends, the most frequent source of information is television, radio and newspapers<sup>12–14</sup>. However, the problem with media is that they are not expertly focused on adolescents<sup>15,16</sup>.

Six point nine percent of exclusively MHS students has had at least one sexual intercourse, while data from literature show a different proportion of sexually active 15 year old girls. The research conducted by Ralph et al. in USA established that 37% of female adolescents were sexually active<sup>17</sup>, and in the research of Buga et al. conducted in South Africa that percentage was as high as

74.6%<sup>18</sup>. In the USA, the average age for starting with sexual life is 17.5 years<sup>19,20</sup>.

In view of the low level of knowledge, still low percentage of sexually active students and vast interest among the students for discussion on sexuality with their school doctor, this seems to be the optimal period for educational programs. The information that about one million of adolescent girls in the USA get pregnant every year and that as much as 86% of all infections with STD occur in the 15–29 age group confirms the need for education of adolescents and prevention of unwanted consequences<sup>21</sup>. Previous reports confirm the benefits of educational programs<sup>22–24</sup>.

## Conclusions

The results of this research show a relatively low level of knowledge about sexuality among the analyzed population of female adolescents. MHS students show a lower level of knowledge when com-

pared to GHS students. The level of knowledge can be improved with appropriate educational programs. Other studies show that average age for the beginning of sexual life among adolescents is 17.5 years, so the age of the investigated female adolescents is optimal for conducting educational programs. School doctors and gynaecologists should be actively involved in education, with vast help of teachers, parents and media. Such programs should postpone the beginning of sexual life until psychological maturity and for those who want to be, or already are, sexually active, those programs should help in the choice and regular use of contraception.

Attitudes, habits and behaviour of adolescents could be changed with increased level of knowledge; thus preventing unwanted consequences (STD, unwanted pregnancies, artificial abortions, and possible infertility).

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## **STAVOVI, PONAŠANJE I ZNANJE ADOLESCENTICA O SPOLNOSTI U ZAGREBU**

### **S A Ž E T A K**

Cilj ovog istraživanja je utvrđivanje razine znanja učenica prvih razreda srednje škole o spolnosti te dobivanje uvida u stavove te spolno ponašanje ispitanih adolescentica. Istraživanje je provedeno na uzorku od 194 učenice, od čega je bilo 117 učenica Medicinske škole i 77 jedne od zagrebačkih gimnazija. Podaci su prikupljeni anonimnom anketom gdje je, pored općih podataka o učenicama (dob, naobrazba roditelja itd.), bilo potrebno definirati pojmove vezane za seksualnost (npr. menstruacija, pubertet), a s kojima su se učenice prethodno susretale u osnovnoj školi i čije su definicije napisane u udžbeniku biologije za peti i osmi razred osnovne škole. Trećom skupinom pitanja su dobiveni podaci o stavovima te ponašanju adolescentica. Dobiveni rezultati ukazuju na relativno nisku razinu znanja učenica obje škole. Učenice Medicinske škole pokazuju nižu razinu znanja u odnosu na učenice gimnazije. Tako 1/5 učenica gimnazije i čak 1/3 učenica Medicinske škole ne zna definirati pojam »menstruacija«. Najviše se o spolnosti razgovara s prijateljicama, 92,1% učenica gimnazije i 81,2% učenica Medicinske škole. Polovica anketiranih učenica obje škole željela bi razgovarati o spolnosti sa školskim liječnikom. 6,9% učenica Medicinske škole je barem jednom imalo spolni odnos dok niti jedna učenica gimnazije do trenutka anketiranja nije bila spolno aktivna. Kako rezultati istraživanja pokazuju nisku razinu znanja anketiranih učenica, a većina učenica nije spolno aktivna, to je idealan period za provođenje edukativnih programa s kojima bi se podigla razina znanja i zdravstvene kulture te time prevenirale neželjene posljedice (spolno prenosive bolesti, neželjene trudnoće, pobačaji, neplodnost).