

Doctoral School of Interdisciplinary Medicine

**Reproductive health information, behaviour and sexual
education of adolescent girls in Hungary**

Summary of PhD Thesis

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INTRODUCTION

National and international surveys have shown that adolescents are having their first sexual intercourse at a younger age; a growing proportion of the young starts their sexual life quite early, at the age of 14 or even earlier. In the international study of school-aged children (Health Behaviour of School-aged Children, HBSC), which also involved Hungary, the proportion of 15-year-olds who have had sexual intercourse was 21% in 2013/2014, the proportion among the Hungarian students is higher than the HBSC average. It should also be emphasised that among the 15-year-old students 48.8% of sexually active boys and 40.6% of sexually active girls have started sexual life at the age of 14 or younger. The most commonly used method for protected sexual intercourse among sexually active students was condom – alone or combined with other methods –, however 14.2% of students have never used any protection methods.

In connection with early sexual life, the proportion of unwanted pregnancies is predominantly high in Eastern Europe, including Hungary. The number of pregnancies and abortions among adolescents aged ≤ 19 years is still high in Hungary. In 2011, more than 5000 live births and almost the same number of abortions were registered in this age group in Hungary. According to the data of the Central Statistical Office of Hungary in 2016, there is a decreasing tendency of teenage abortions, however one third of more than 10 000 pregnancies were registered in the age group of 19 years and younger (63.4% among 10–14-year-olds, 36.2% among 15–19-year-olds) ended in abortion.

With the tendency of having the first sexual act at a younger age, the risk of being exposed to HPV (human papillomavirus) infection is also increasing. Nowadays this is considered to be the most common sexually transmitted viral infection affecting about 80% of sexually active females at least once in their lifetime. Fortunately, the virus disappears spontaneously in 90% of these females within 3–6 months. However, the carcinogenic HPV infection can exist for longer times (even for 12–36 months) in 10% of females, which means a higher risk for the development of cervical cancer.

In Europe, cervical cancer is a common malignant tumour in women younger than 45. Although, the mortality rates for cervical cancer declined across European Union (EU) countries between 2003 and 2013, Hungary's situation is unfavorable as compared to other EU countries in relation to cervical cancer mortality. In 2014, according to the National Cancer Registry, 1161 new cervical cancer cases were registered in Hungary. Compared to developed

countries, mortality is also very high in Hungary; in 2016 the number of women who died because of cervical cancer was 396. Moreover, in Hungary the participation in screening aimed at an early recognition of cervical cancer is among the lowest in the OECD (Organization for Economic Co-operation and Development) countries, a tendency shared by the other Eastern European countries.

Hungarian studies of sexual education and knowledge point out that even though young people/adolescents have some knowledge of sexual life, neither the quantity, nor the quality (content and form of education) of this knowledge fit the expectations. It is also typical in this age group that physical maturity is not always equals to psychic maturity, which can be more risky when it is associated with the lack of knowledge regarding sexuality. Unprotected sexual life initiated at the age of 14 or younger has an impact on subsequent health behaviour as well.

Sexuality in young ages and the prevention of related unwanted consequences – pregnancy, infectious diseases, etc. – means a worldwide problem, the solution of which requires multisectorial (health care, education, family, etc.) approach, since only those adolescents are able to make responsible decisions about their sexual life who receive proper sexual education.

AIMS

In our study sexual activity of adolescent girls, their knowledge related to contraception and sexually transmitted infectious diseases, and gynecological (examination, cancer screening, etc.) experiences were measured before sexual education performed by a gynecologist.

This study aimed to assess the relationship between menarche and some socio-demographic parameters, sexual activity and tobacco smoking; the knowledge about sexually transmitted infection and cervical cancer screening; whether sociodemographic characteristics of adolescent girls, their knowledge about cervical cancer screening, and their sexual activity are associated with whether or not they have visited a gynecologist.

Finally, our aim was to determine the way of sexual education of young people provided by physicians – GPs, pediatricians, obstetrician-gynecologists etc. – in accordance with the results of the questionnaire-based study, the experiences gained during the interactive education and the recommendations of related international guidelines.

MATERIALS AND METHODS

Self-administered (paper and pencil) questionnaire-based study was carried out at the Pediatric Gynecology Centre of the Department of Obstetrics and Gynecology, University of Szeged, Hungary, among participants of professional sexual education, held by a pediatric and adolescent gynecologist. Convenience sampling was based on the availability of participants; they were 13–18-year-old girls attending primary or secondary school. The survey was carried out between 2009 and 2016. The questionnaire comprised sociodemographic characteristics, risk behaviour (sexual activity, smoking), onset and parameters of their periods, knowledge about contraceptive methods, cervical cancer screening, and HPV infection, sources of information, and the visits to the gynecologist.

Six questions were included to measure the knowledge about the cervical screening process and its evaluation. There were two open-ended questions about how the screening test is done and the target population; the answers were assessed by a gynecologist. Four closed questions were related to the painful nature of screening, to its recommended frequency, to pathological findings and to the screening as a preventive measure of cervical cancer. The answers were classified as ‘correct’ and ‘incorrect’. The assessment of the answers was performed on the basis of definitions provided by current textbooks. Taking the correct answers into consideration, a 6-item score was developed where the higher the scores were, the better the level of knowledge turned out to be.

Statistical analysis was carried out using SPSS 24.0 for Windows. We used simple descriptive statistics to describe the overall characteristics of the sample. Chi-square and one-way ANOVA tests were applied to perform bivariate comparisons. Multiple comparisons were done by multivariable logistic regression analysis. Statistical significance was defined at $p < 0.05$ in all analyses.

The study protocol was approved by the Regional and Institutional Human Medical Biological Research Ethics Committee of the University of Szeged (Ethical permission serial number: 2418).

RESULTS

Finally, there were 868 participants in the study. Mostly girls from grades 7–8 and 9–10 were interested in sexual education, which was also reflected by the age composition of the participants: proportion of 14-year-olds (27.4%) and 15-year-olds (28.6%) was dominant. The proportion of participants by school type was nearly identical: 261 students (30.1%) attended primary school, 274 (31.6%) secondary technical school and 333 (38.4%) secondary grammar school.

More than one third (35.3%) of the participants have already had sexual contact, half (51.3%) of the sexually active girls had their first sexual intercourse at the age of 15 or younger; 5.3% of girls at the age of 13, and 18.1% at the age of 14. In the biggest proportion (35.2%), the age of 16 was indicated as the beginning of sexually active life; the average age of the first sexual contact was 15.35 ± 1.12 years (min. 13, max. 18). 22.3% of girls were regular smokers and prevalence of smoking increased with age: it was 4.7% at the age of 13, 17.4% at the age of 15 and 45% at the age of 18.

Most of the girls had their first period at the age of 12–13. Adolescent girls who had earlier onset of the first period were about twice (odds ratio, OR: 2.28) as likely to smoke as girls with later onset of the first period. Regarding risk behaviors (sexual activity and tobacco use) both the age when starting sexual life and smoking began significantly earlier in girls who had their first period earlier. Smoking was analyzed to assess the factors that are increasing the odds of being a regular tobacco user. The most influential proven factors were menarche and sexual activity. Being sexually active meant more than 7-fold odds of being a regular tobacco user (OR: 7.24).

In total, 38.7% of the participants had already visited a gynecologist; more than half of these girls did so because of some kind of complaint (menstrual disorder, or discharge, etc.), and 18.1% of them sought medical advice for contraception or screening. In connection with cervical cancer screening, the widest known factor was its role in the prevention and the suggested rate of screening. A low proportion of participants (7.3%) could give a correct account of what the screening really meant, and only 4.2% knew how to assess the obtained result, that is, what was considered pathological.

A comparison of characteristic features of the girls visiting and those not visiting a gynecologist showed significant difference from the viewpoint of age, type of school and sexual

life. A higher proportion of girls aged ≥ 16 , girls attending technical school, smokers and those who had regular sexual contact had already visited a gynecologist; however, 41.2% of the sexually active girls had never consulted a gynecologist. A significant difference ($p < 0.001$) can be seen regarding the evaluation of financial background; those who had already visited a gynecologist estimated their financial background as worse (average 3.24 ± 0.65) than those who had not visited one yet (average 3.47 ± 0.68).

There was also a significant difference between girls visiting and not visiting a gynecologist in connection with the information on screening, with the exception of the importance of screening in prevention: those who had visited a gynecologist possessed more information. The average of score values on information about cervical cancer screening was 2.45 ± 1.15 (min: 0, max: 6), among those having visited a gynecologist 2.78 ± 1.16 , and among those who had not visited a gynecologist 2.24 ± 1.10 , and the difference was significant ($p < 0.001$). The proportion of girls with comprehensive knowledge was quite low (0.7%), and 4.4% of them had no knowledge about the screening at all. Those who had already visited a gynecologist knew significantly more about the screening; however, only 18.1% of them visited a gynecologist for specifically this purpose.

The multivariable logistic regression analysis showed that the chance of having visited a gynecologist was three times (OR: 3.21) as high in girls having sexual contact as those having no sexual contact. The chance of visiting a gynecologist was increased (OR: 1.70) by each year of age. Financial background showed a lower chance of having visited a gynecologist among girls with a good financial background (OR: 0.72). The type of school did not show significant correlation with the chance of visiting a gynecologist.

For the question if they ever received sexual education, almost all sexually active girls answered yes, while this proportion was a little bit lower among the sexually inactive girls (98.0% vs. 94.2%). The main source of knowledge about sexuality was the parent, followed by the health visitor, friends and teachers; however only every 5th girl received information from a physician.

70% of girls have already heard about emergency contraception; this proportion was above 90% among those who are sexually active. The knowledge related to emergency contraceptive pill use (for how long is it worth to take) was insufficient in both groups. 96.3% of girls had information about the fact that protection is necessary already at the first sexual intercourse. In relation to the question about contraception we observed that sexually active

girls are more informed than those who are sexually inactive, however, there are still insufficiencies among them (e.g. when to take the emergency contraceptive pill).

For the questions regarding the transmission of HPV only one participant gave completely correct answers; mostly (in 84.0%) the answers were partly correct. Knowledge of HPV transmission was independent from sexual activity; possible transmission by kissing, petting or skin-to-skin contact of the genitals was known by 2.4%, 2.2% and 16.6% of the participants, respectively. Merely every 3rd participants knew that use of condom can not completely prevent the transmission of HPV, and moreover, knowledge was significantly worse among sexually active girls. Knowledge was also incomplete regarding the relationship between HPV and abnormal cervical cancer screening and abnormal cytological test result. It has to be emphasised that sexually active girls were again less informed regarding the previous two questions.

DISCUSSION

The results of our study, which was performed among adolescent girls, are consistent with the Hungarian data. Similarly to the HBSC study, we observed a significant proportion of girls who have had their first sexual act before the age of 14. However, at the same time their sexual knowledge (regarding transmission of HPV, contraceptive methods, etc.) was incomplete and there was a significant proportion of those who already have had sex but have never had a gynecological examination. Our results highlighted the educational deficiencies of sexual – and in a broader sense reproductive – life.

It has been proved that the base of healthy adult life can be traced back to early childhood. From the view point of the evolution of a health-conscious attitude, refraining from smoking, alcohol, and drugs, and having a safe sexual life, adolescence is an especially critical period. Early sexual life without appropriate information or the high prevalence of smoking among the youth proves that there are grave shortcomings in the field of health awareness among the youth of today.

Traditions concerning visiting a doctor – a gynecologist – can also be characterized as unfavorable. Hungarian women usually consult a gynecologist when they experience a complaint, pain, and not with an eye on screening; the rate of the attendance at the 3-year cervical screening hardly reaches 50% in the adult female population between 2003 and 2005.

If participation is low among adults, it can be predicted that their female offspring will not consult experts more frequently, either. Most youngsters surveyed in our study consulted a doctor only due to having some kind of complaint. However, it would be highly recommended for the young to visit a gynecologist who specialized in pediatric and adolescent gynecology before starting their sexual life, and this specialist would provide them with information concerning contraception, prevention of sexually transmitted diseases and screening.

The importance of the first teenage consultation with the gynecologist and its essential elements are described by several guidelines. The participation of a gynecologist in conducting the information is of high importance because in our fast-changing world the advice provided by parents and friends is not always reliable. In Hungary, there are pediatric and adolescent gynecology outpatient departments in several cities, where it is possible to obtain gynecological instruction before the sexual act. Teenage experiences and the development of the gynecologist-patient relationship in this period exert a huge influence on adulthood habits of visiting a doctor, including participation in cancer screening.

Apart from the information obtained from medical experts, it is important that all young girls/women should master certain basic knowledge on sexual maturation, contraception, the essence of the gynecological examination and its necessity within school curriculum. In most cases, it is the teacher's decision whether to dedicate a lesson to this topic or to seek the help of an expert. Our model test aimed at complementing this type of school education with an additional lecture held by a gynecologist.

Based on our observations and literature data it can be stated that adolescents by the age of 14 already have the basic knowledge about the parts and functions of genitals, hormonal and nervous system characteristics, but they are less informed about the natural way of conception, contraception and sexually transmitted diseases. Therefore, it would be necessary to deliver this knowledge from early childhood in an age-appropriate manner. The basis of the holistic approach is that sexual education starts at birth. In the first years the role of parents is elementary, but after admission to institutions, infants' nursery, kindergarten and school should also include further improvement of these skills in their tasks, in an organised and controlled framework, which is based on a scientific basis, age-appropriate and incorporated in the curriculum. In the WHO guideline "Standards for Sexuality Education in Europe" published in 2010 there is a detailed discussion of the appropriate level of knowledge according to age groups.

The task of (pediatric) gynecologist is not exclusively the diagnosis and treatment of diseases, but prevention has to be a primary and most important aim, too. From the viewpoint of health education, adolescent girls attending pediatric gynecology specialist's consultation constitute the most susceptible group. At the specialist's consultation effective steps can be taken against unwanted pregnancies under the age of 19 and against sexually transmitted diseases. The lack of contraception can be traced back to incomplete sexual education, improper use of condom, insufficient knowledge about and difficult access to emergency contraception, and furthermore to fear of parents, infertility and side effects, and last but not least to financial reasons.

It should be emphasised that most adolescents seeking for medical help experience sexuality related communication as a stressful situation, therefore it is of high importance that we should never judge them, do not express disapproval, but we should try to help and give information suitably in the given situation. We suggest the propagation of the preventive attitude, the consultation about sexuality and contraception in pediatrics, and timely referral of these adolescents for specialist care. The adolescent already knows her pediatrician and therefore can open more easily in confidential questions and is willing to share such information, which is not yet known by the parents either. By asking an innocent question we can raise the topic of contraception and sexually transmitted diseases. It is also important to have information about the sexual history of the adolescent. We should raise the attention of these young people to that by the initiation of sexual life two very important questions arise; one is the possibility of unwanted pregnancy; the other is the prevention of cervical cancer and sexually transmitted diseases.

The task and responsibility of those doing sexual education is significant: how they can perform sexual education in a way, which will not only show the dark side and will not discourage them from doctors and examinations. By reviewing the international literature, we can find existing guidelines on how to take the medical and sexual history, and how to perform a comprehensive psychosocial evaluation within 15 minutes. Sexual counselling should be initiated in a young age, with special emphasis on the improvement of knowledge regarding contraception, gynecological cancer screening, sexually transmitted diseases and HPV vaccination. With repeated age-related and continuous education, it is possible in the long run to achieve our aim, so that the young should begin their sexual life being aware of its dangers

and prepared for contraception, thus reducing the number of unwanted pregnancies among 14–18-year-old girls.

CONCLUSIONS

Our results highlighted the educational deficiencies of reproductive life, which is a complex task to solve, to address the changing approach of national healthcare and education systems. Scientific evidence-based guidelines of comprehensive sexuality education should be adopted in Hungary. The adaptation of the international guidelines could contribute to develop the new approach of sexuality education in Hungary. The adopted evidence-based guidelines should be followed in the Hungarian primary (GPs, pediatricians) and specialized care (especially dermatologist, gynecologist and pediatric gynecologist), too. More time should be spent on a patient, and by questioning, we should help in formulating the aim of their visit. The assistance of the pediatricians is essential. Role of health visitors is also crucial in sexual education, since mostly they are the persons who have contact with the young people and who can establish a confidential relationship with them. It is essential to continue incorporating sexual education into education from early childhood to young adult age.

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Publications related to the Thesis

- I. Varga-Tóth, A., Németh, G., Paulik, E. (2019). Szexuális nevelésről orvosi szemmel a hazai adatok és a nemzetközi irányelvek tükrében. *Orvosi Hetilap* (In press)
- II. Varga-Tóth, A., Maróti-Nagy, Á., Németh, G., Paulik, E. (2017). Menarche as a predictor of risk-taking behavior in a sample of Hungarian adolescent girls. *International Journal of Adolescent Medicine and Health*, 0(0), pp. Published Online: 2017-05-24 | DOI: <https://doi.org/10.1515/ijamh-2016-0135>
- III. Varga-Tóth, A., Paulik, E. (2015). Role of gynecologists in reproductive education of adolescent girls in Hungary. *Journal of Obstetrics and Gynaecology Research*, 41, 747–754. doi: 10.1111/jog.12629.
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