

Vilnius high school students' knowledge of cervical cancer risk factors

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Background. The cervical cancer mortality rates in Lithuania are among the highest in Europe. Students are the most active group of the society experiencing different environmental effects; therefore, their knowledge level is very important for the evaluation of educational needs of other society groups.

Aim of the research is to estimate the female students' knowledge on human papillomavirus (HPV) infection prevalence features.

Material and methods. The self administrative questionnaire about HPV infection and major features of association between the infection and cervical cancer, vaccination, visits to gynaecologists and cervical cancer screening programmes was distributed among 687 students of higher education institutions.

Results. 60.6% students were aware of the HPV before the research: 75.2% medical students and only 47.1% non-medical students ($p < 0.05$). Great difference was observed in the knowledge concerning oncogenic types of HPV – 57.9% medical and only 21.0% non-medical students ($p < 0.05$) had heard about them. The HPV as the cause of cervical cancer was judged by 50.4% of the respondents (63.3% medical and 38.4% students of other faculties).

Conclusion. The greater part of medical students had heard about HPV before (75.2% compared to 47.1% of non-medical, $p < 0.05$). The knowledge about HPV of Lithuanian students is similar to those studying in other countries. The groups' opinion about vaccination did not differ ($p = 0.350$).

Key words: human papillomavirus infection, students' knowledge of human papillomavirus and cervical cancer risk factors

INTRODUCTION

A link between HPV infections and cervical cancers was first demonstrated in the early 1980s. Human papillomavirus (HPV) is the most prevalent sexually transmitted infection in the world, occurring at some point in up to 75% of sexually active women (1). Although most genital HPV infections are transient and resolve without symptoms or signs of disease, a small proportion persists as a chronic infection, some of which ultimately cause anogenital cancers. Several types of HPV can lead to genital warts, the most recognizable sign of genital HPV infection.

The role of oncogenic genotypes of HPV infection in causing cervical cancer (both adeno and squamous-cell cancers), the second most common cause of cancer in women worldwide, is now being undisputed in particular (2). Even less well-known is the fact that nearly all cervical cancers (99.7%) are directly linked to previous infection with one or more of the oncogenic (cancer-including) types of HPV (3, 4). Evidence from molecular studies has identified mechanisms by which high risk types of HPV contribute to carcinogenesis. For high risk HPV types prevalence rates are around 8–12% in women over the age of 18–24 and decline

to 2–5% in women over the age of 35 (5). Findings in Lithuania demonstrate that the majority (31.3%) of the infected by high risk oncogenic HPV were the women 20–24 years of age (6). Despite the high prevalence and serious complications associated with HPV infection, most young women know very little about HPV (7–10). Relatively few studies have examined knowledge of HPV. Almost all are US-based surveys and most sample only American university students.

No studies have been carried out to examine student's knowledge of HPV and cervical cancer risk factors in Lithuania so far. Women in Lithuania are more often widely informed about HIV and other sexually transmitted diseases (STD) than about HPV. Public opinion poll indicates that women in Lithuania are not well enough informed about the causes of cervical cancer. According to the results of the Lithuanian residents' survey carried out by RAIT in December of 2006 covering 1524 people, only 22% respondents knew that the cause of cervical cancer is HPV. The majority of respondents indicated that cervical cancer was caused by inappropriate life style (54.5%); others indicated that it was caused by environmental factors and inheritance (39.9%). The survey results show that about 78% of inhabitants are not aware of the causes of cervical cancer. Furthermore, not all the doctors know the reasons of this disease. More than half of Lithuanian women (51.9%) would like to have a vaccination from the cervical cancer.

The results of students' survey covering 600 respondents from 10 Lithuanian universities showed that they were not avoiding risks in their sexual life; however, they are fairly well aware of the ways the HIV is spreading. Therefore, fairly good knowledge of the sexually transmitted diseases is not a strong enough motive for safer sexual behaviour, and, consequently, the youth is also a target group with higher risk of STD. On the other hand, young people are more receptive to information and they are not indifferent to their future perspectives, thus, we can expect better results by working with them (11).

Awareness and education are important prerequisites for efforts aimed at preventing the spread of HPV. Education about sexually transmitted diseases might be an effective primary prevention strategy for HPV infection and cervical cancer. It has been suggested that HPV-focused education could be more effective than other education focused on sexually transmitted diseases, because more people have experience with the complications of HPV (i. e. cervical dysplasia) than with other sexually transmitted diseases (12). Thus, this population would be more likely to retain information from an HPV-focused intervention and have a stronger motivation to improve their safe-sex practises. Comprehensive knowledge about this risk factor would allow reducing the hazard of this disease. Cervical cancer mortality rates in Lithuania are among the highest in Europe, therefore efforts should be strengthened to reduce them. Students are the most active group in society, they are experiencing various environmental exposures, and, therefore, the level of their knowledge is extremely important for assessing education needs of other public groups as well as for playing educational role in society.

The main objective of the questionnaire survey was to evaluate the current knowledge of Vilnius high school girl-students concerning the HPV, cervical cancer risk factors, and the cervical cancer screening program in Lithuania.

MATERIALS AND METHODS

The self administrative questionnaire of 15 questions about HPV, its relation to cervical cancer, cervical cancer prevention programmes, vaccination and their visits to gynaecologists was

used for the survey. Students (687 females, 19–24 years of age) at Vilnius higher education institutions - Faculty of Health Care of Vilnius College, Mykolas Romeris University of Law, Faculties of Medicine and Chemistry of Vilnius University - were invited to take part in the survey. No information on HPV or on cervical cancer was provided for the study subjects before the filling in of the questionnaire. The questionnaires were distributed in the lecture hall after common lectures not related to any topic in the questionnaire, 5–10 minutes were needed to fill them in.

According to the analysis the data were stratified into two groups – medical and non-medical – and subsequent comparisons were carried out using cross tabulated data. Differences between groups were evaluated by chi-square test, and the estimates were carried out using odds ratio.

RESULTS

The greater part of medical students had heard about HPV before (75.2% compared to 47.1%, $p < 0.05$), therefore this difference was statistically significant (Table 1). Even more significant difference in knowledge was determined concerning oncogenic types of HPV: 57.9% medical students and 21.0% non-medical students had heard about them ($p < 0.05$). Similar knowledge level was about HPV and herpes genitalis. 61.5% of medical students and 21.3% non-medical students ($p < 0.05$) answered about their association positively (Table 1). There was a difference in students' knowledge about the causes of cervical cancer. 50.4% of respondents suggest that HPV is the most important cause of the cervical cancer, but this proportion is much greater in the group related to medicine, 63.3% compared to 38.4%, respectively. Respondents of the second group indicated other than HPV causes of cervical cancer more frequently. Higher awareness of cervical cancer prevention programme and the vaccination was observed among medical students as well. Table 1 summarizes positive answers obtained in the survey.

Odds ratios were used to compare the degree of the knowledge between the groups. The estimates show lower knowledge on the main risk factors (mentioned in Table 1) in the group not related to medicine (Fig. 1).

Table 1. Analysis of knowledge about HPV and associations

	Question	Group I (related to medicine n = 330)	Group II (not related, n = 357)	Total
Q1	Have you heard about HPV before?	248 (75.1%)	168 (47.1%)	416 (60.6%)
Q2	Have you heard about oncogenic types?	191 (57.9%)	75 (21.01%)	266 (38.7%)
Q3	Have you heard about HPV that causes herpes genitalis?	203 (61.5%)	76 (21.29%)	279 (40.6%)
Q4	Is HPV the main cause of cervical cancer?	191 (57.9%)	75 (21.01%)	266 (38.7%)
Q7	Are you aware of prevention programme carried out in Lithuania?	275 (83.3%)	254 (68.63%)	520 (75.7%)
Q8	Are you aware about vaccination against HPV?	225 (68.2%)	162 (45.38%)	387 (56.3%)

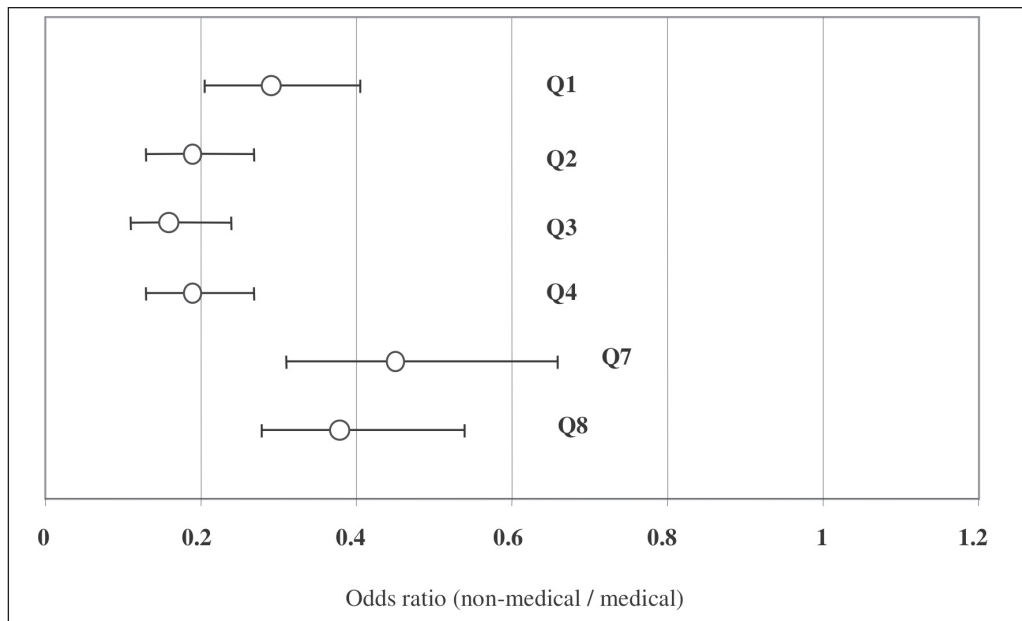


Fig. 1. Knowledge the of main risk factors of cervical cancer in the group of students not related to medicine

Table 2. Knowledge of causes of cervical cancer

What causes the development of cervical cancer?	Group I (related to medicine)	Group II (not related)	Total
Many sexual partners	59 (17.9%)	71 (19.9%)	130 (18.9%)
HPV	209 (63.3%)	137 (38.4%)	346 (50.4%)
Familial-genetic predisposition	27 (8.2%)	64 (17.9%)	91 (13.3%)
Early sexual intercourse	9 (2.7%)	19 (5.3%)	28 (4.1%)
Other	25 (7.6%)	65 (18.2%)	90 (13.1%)
Total	330	357	687

Chi-test, $p = <0.05$.

Table 3. Analysis of visits to a gynaecologist

How often do you pay visits to a gynaecologist?	Group I (related to medicine)	Group II (not related)	Total
Once a year	54 (16.36%)	48 (13.45%)	102 (14.85%)
Twice a year	28 (8.48%)	32 (8.96%)	60 (8.73%)
When I have gynaecological problems	182 (55.15%)	184 (51.54%)	366 (53.28%)
I do not pay visits	66 (20.00%)	93 (26.05%)	159 (23.14%)
Total	330	357	687

Chi-test, $p = 0.245$.

The medical students recognized the HPV as the main cause of cervical cancer with higher priority (63.3%, Table 2).

Medical students visited gynaecologist more frequently, but the difference was not statistically significant ($p = 0.245$, Table 3). One in five students did not pay visits to a gynaecologist.

In total, more than half of the students (56.3%) were aware about vaccination; the proportion was higher in the group related to medicine (69.2% compared to 45.4%, $p < 0.05$).

Vaccines are now offered though they are relatively expensive for the Lithuanian population and are not compensated by

Table 4. Comparison of vaccination and prevention

	Medics		Others	
	Are aware	Are not aware	Are aware	Are not aware
Vaccination	225	104	162	193
Programme	275	55	245	112
	OR = 0.43 (0.29–0.63)		OR = 0.38 (0.28–0.53)	

Table 5. Analysis of the will to get vaccinated against HPV virus

Would you like to get vaccinated against HPV virus?	Group I (related to medicine)	Group II (not related)	Total
Yes	57 (17.27%)	78 (21.85%)	135 (19.65%)
If it were compensated by the government	235 (71.21%)	238 (66.67%)	473 (68.85%)
No	38 (11.52%)	40 (11.20%)	78 (11.35%)
Total	330	357	687

Chi-test, $p = 0.350$.

the government. The point of view of the students on vaccination in both groups was similar: the majority of respondents would like to get vaccinated if expenses were covered by the state, the groups' opinion about vaccination did not differ ($p = 0.350$).

Recently much attention is paid to vaccination as a new method for cervical cancer prevention. At the moment, the vaccination can enhance the success of the efforts against cervical cancer, but the organized programme using conventional Pap smear will remain vital for the future decades. It was important to learn whether the knowledge about the prevention programme and vaccination is the same. After comparing the responses it was found out that the knowledge is in favour of the programme, although the students in both groups knew less about vaccination than about the prevention programme (OR = 0.43 and OR = 0.38, respectively) (Table 4).

The bigger part of students was aware of the prevention programme (75.7%), medical students' knowledge being even greater and reaching 83.3%. The understanding of the attitude to vaccination is essential in order to help fight the highest cervical cancer mortality rates in Europe. It is extremely important to increase the knowledge of women about HPV and cervical cancer risk factors which will facilitate their participation in the screening program.

11% of the respondents would not like to get vaccinated (Table 5).

DISCUSSION

This is the first survey on knowledge and attitudes concerning HPV infection and cervical cancer among young women in Lithuania. Our results show that little is known about these health issues among non-medical students. Knowledge on HPV as cervical cancer risk factor (83.3%) and on the cervical cancer screening program (75.2%) was good among medical students. On the contrary, the group knowledge about the oncogenic HPV types (57.9%) and HPV that causes herpes genitalis (61.5%) is not satisfactory.

Knowledge about HPV was low among non-medical students: more than half (52.9%) had never heard about HPV before, four in five (78.4%) had never heard about genital warts. Knowledge about HPV as cervical cancer risk factors was not sufficient, i. e. 78.9% respondents were not aware about oncogenic HPV types and only 38.38% of them recognized the HPV as the main cause of cervical cancer as well. The results are similar to those of the survey carried out by Moreira et al. (13): among 204 women aged 16–23 attending a public clinic, 67% did not know that HPV can cause cervical cancer. Tiro et al. (14) analysed cross-sectional data from women, their age ranging from 18 to 75 years, responding to the 2005 Health Information National Trends Survey ($n = 3,076$). Among the 40% of women who had ever heard about HPV, less than 50% knew it caused cervical cancer; knowledge that HPV was sexually transmitted and caused abnormal Pap tests was higher (64% and 79%, respectively).

Medical students' knowledge about HPV was quite satisfactory and significantly better than that of non-medical students. Fortunately, the majority of study participants (85.3%) realised that HPV could be sexually transmitted. The surveys carried out by Ingledue et al. in 2004 and by Denny-Smith et al. in 2006, Ingledue et al. (15) have found that risky behaviour, lack of STD knowledge, and avoidance of preventive care including a Pap test are responsible for the high incidence of HPV among college women. All these findings suggest that lack of knowledge and education is partly responsible for the spread of STD infections. Denny-Smith et al. (16) have demonstrated that study participants who take annual Pap tests possessed higher knowledge of HPV and cervical cancer than the group that had never had a Pap test.

Baer et al. 2000 (17) carried out an anonymous survey of all the first year students at a private university. They found out that 95.4% of females had heard of genital warts, but only 11.6% of them knew that HPV caused genital warts. In our study 40.6% of respondents knew that HPV could cause genital warts.

Another previous study by Lambert 2001 (18) was made up of questioning 60 physician assistant and psychology students that were attending a private college in upstate NY. A questionnaire was administered to test the knowledge of HPV and other STD. Participants were given a brief HPV-focused educational intervention, then they were retested 3 months post-intervention. Pre-interventional, 45% of the HPV questions were answered correctly compared with 79% post test. Knowledge of other STD did not change post test. This study showed a lack of knowledge of HPV among college students. However, a brief HPV-focused educational intervention was effective in increasing the knowledge of HPV infection.

Considerably, more HPV education is needed in Lithuania, particularly among young adults; HPV-focused educational interventions could therefore be effective for primary prevention of all sexually transmitted diseases, as well as cervical dysplasia and cervical cancer. Women need to understand the link between human papillomavirus (HPV) and cervical cancer in order to make appropriate, evidence-based choices among existing prevention strategies (Pap test, HPV DNA test, and HPV vaccine). Assessment of the society public knowledge in nationally representative samples is a high priority for cervical cancer control (14). Caution must be exercised when drawing conclusions beyond our sample, as it was not representative of Lithuania's population, since the respondents were younger and more educated.

CONCLUSIONS

1. The bigger part of medical students had heard about HPV before (75.2% compared to 47.1% of non-medical, $p < 0.05$). The knowledge about HPV of Lithuanian students is similar to those studying in other countries; nevertheless the knowledge about HPV infection among the students of non-medical faculty is not satisfactory.

2. 50.4% of respondents suggest that HPV is the most important cause of cervical cancer but this proportion is much greater in the group related to medicine, 63.3% compared to 38.4%, respectively. HPV-focused educational interventions are needed for the primary prevention of all sexually transmitted diseases, as well as cervical dysplasia and cervical cancer. Students need to be educated for better understanding the links between human papillomavirus (HPV) and cervical cancer.

3. The point of view of the students on vaccination in both groups was similar: the majority of respondents would like to get vaccinated if expenses were covered by the state, the groups' opinion concerning vaccination did not differ ($p = 0.350$). 11% of the respondents would not like to get vaccinated. Strategies for communicating accurate information about HPV transmission, prevention, and detection as well as risk of cervical cancer are needed in Lithuania, particularly among young adults in order to make appropriate, evidence-based choices among existing or planned prevention strategies (Pap test, HPV test, HPV vaccines).

Received 2 August 2007
Accepted 19 October 2007

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VILNIAUS AUKŠTŪJŲ MOKYKLŲ STUDENČIŲ ŽINIOS APIE GIMDOS KAKLELIO VĖŽIO RIZIKOS VEIKSNIUS

S a n t r a u k a

Tyrimo tikslas. Studenčių žinių apie žmogaus papilomos viruso (ŽPV) infekciją bei jos paplitimo ypatybes tyrimas.

Medžiaga ir metodika. Sudarius anketą apie ŽPV infekciją bei jos paplitimo ypatybes, infekcijos ryšį su gimdos kaklelio vėžiu, vakcinaciją,

lankymąsi pas ginekologus bei gimdos kaklelio vėžio patikros programą, buvo apklaustos 687 Vilniaus aukštųjų mokyklų studentės, iš kurių 330 mokėsi VU Medicinos fakultete ir Vilniaus kolegijos Sveikatos priežiūros fakultete.

Darbo rezultatai. Apie ŽPV iki tyrimo žinojo 60,6% studenčių: 75,2% medicinos studenčių ir tik 47,1% nemedicinos studenčių ($p < 0,05$). Apie onkogeninius ŽPV tipus buvo girdėję 57,9% medicinos ir tik 21,0% nemedicinos studenčių ($p < 0,05$). Tai, kad ŽPV yra pagrindinė gimdos kaklelio vėžio priežastis, mano 50,4% respondenčių (63,3% medicinos ir 38,4% kitų fakultetų). Didžioji dalis respondenčių pageidautų pasiskiepyti, jei išlaidas kompensuotų valstybė. Nenorėtų pasiskiepyti 11% respondenčių.

Išvados. Lietuvos studenčių žinios apie ŽPV nėra mažesnės nei studijuojančių kitose šalyse, tačiau žinios apie ŽPV infekciją tarp ne medicinos fakulteto studenčių yra nepakankamos.

Tai, kad ŽPV yra pagrindinė gimdos kaklelio vėžio priežastis, mano 50,4% respondenčių. Nuomonė apie skiepus nuo ŽPV tarp grupių statistiškai reikšmingai nesiskyrė ($p = 0,350$).

Raktažodžiai: žmogaus papilomos viruso infekcija, studentų žinios apie žmogaus papilomos virusą bei gimdos kaklelio vėžio rizikos veiksnius