

Knowledge of cervical cancer prevention among teenagers

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Abstract: Introduction: Cervical cancer is one of the most common cancers in women. It is estimated that more than 500,000 new cases of intraepithelial changes are detected in young women each year. Cervical cancer can develop painlessly and have no symptoms for many years, therefore, extremely important is to be aware of possible preventive actions in this area.

Aim of the study: Assessment of knowledge of teenagers about prevention of cervical cancer.

Material and Method: The study was conducted in Lublin in 2012 among 121 girls aged 18-19 years using author's questionnaire on selected aspects of cervical cancer prevention. Statistical tests were performed on the basis of computer software STATISTICA 10.0 (StatSoft, Poland)

Result: According to respondents, most frequently cited risk factors for cervical cancer are papilloma virus infections (79.34%), untreated inflammation of the vulva (71.07%) and frequent change of sexual partners (55.37%). Most of the teenagers (84.3%) knew, that the primary diagnostic test of cervical cancer is a cervical cytology (Pap) smear and preventive methods are: HPV vaccination, regular visits to the gynecologist or the treatment of cervical erosions. However, 88% of respondents had only elementary knowledge about cervical cancer. Much information about prevention of cervical cancer high school girls received from the media (66.94%) and internet (47.11%). In the opinion of teenagers activities relating to cervical cancer prophylaxis should be extended for talks (51.24%) and meetings with sick women (26.45%).

Conclusions: Respondents have basic knowledge about the prevention of cervical cancer, however there is the lack of knowledge of the nature of the disease. The main sources of knowledge about cervical cancer are mass media. Teenagers expect to extend existing general, screening preventive methods on educational programs (talks, meetings with women affected by this cancer).

Keywords: girls, knowledge, prevention of cervical cancer

1. Introduction

Cervical cancer is second most common (after breast cancer) malignant neoplasms in women. It is so called „silent killer”, because it can progress for a long period of time without any symptoms. It is estimated that in our country the incidence of cervical cancer amounts over 4,000 new cases per year and about 2,000 of them die [1]. This cancer most often develops in women aged 45-55, while the greatest exposure to risk factors, in particular infection with human papilloma virus (HPV), takes place between 16 and 25 years of life [2÷3].

In most cases cervical cancer is squamous cell cancer derived from multilayer squamous cervical disc (about 95%). The second most common is adenocarcinoma of the cervix, which comes from glandular epithelium of the cervical canal (3-5%). Other cancers and other types of cervical tumors are very rare (0.1%) [4÷5].

Cervical cancer is not hereditary disease or genetic condition. Modern literature provides many proven and probable risk factors for cervical cancer.

The documented risk factors include:

- age (the risk of developing cancer and high-grade change decreases with age);
- infection of HPV type 16 and 18 lasting more than 12 months (or other highly oncogenic types of HPV);
- early sexual initiation (<18 years of age);
- a large number of births (multiparous infected with HPV giving rise to 7 or more times have 4-fold higher risk than women giving birth 1-2 times);
- a large number of sexual partners (more than 4 per year);
- tobacco smoking;
- low socioeconomic status, which consists of poor living conditions,

inadequate personal hygiene and malnutrition;

- cervical intraepithelial neoplasia (CIN) [6÷9].

In turn, the likely risk factors for cervical cancer qualifies:

- long-term use of hormonal contraceptives.

Use of oral contraceptives for over 10 years increased 4-fold risk

- coexisting HIV infection;
- recurrent vaginal infections caused by *Chlamydia trachomatis*, *Cytomegalovirus*, or chronic vaginal infection of *Chlamydia trachomatis*;
- a diet deficient in vitamins A, C, E, β -carotene, folic acid (antioxidants) [10÷12].

Polish Gynecological Society recommends diagnosis and staging of cervical cancer based on the result of the physical examination, per vaginum and per rectum examination as well as Pap smear or colposcopy. The growing importance begins to play molecular diagnostics of DNA HPV HR. The results of recent studies have confirmed that this method has a higher sensitivity and specificity in detecting similar CIN 2 as compared to 3 times with a Pap test performed [13]. To verify the diagnosis it is useful to turn to download targeted for histopathological examination.

Complementary methods to determine the clinical stage of the disease is cystoscopy, proctoscopy, transvaginal ultrasonography and microscopic examination of material from suspicious places in the bladder and rectum [14].

Despite the enormous progress of diagnosis and treatment, as well as the development of public awareness of the need for regular screening testing, mortality from cervical cancer is not decreasing. A major impact on decreasing the cancer incidence have individual decisions of women concerning the widely understood lifestyle. Knowledge of risk factors and methods

of early detection of cervical abnormalities can save many women from cancer.

The correct strategy is to visualize the modern populations need to take multi-faceted measures to effective planning and implementation of prevention programs.

A special group to which educational activities should be directed constitute teenagers. The role of education in their homes, in schools and health centers is to familiarize teens with the consequences of their lifestyle. At this age, young people discover their sexuality, visit gynecologist for the first time, often have a period of rebellion and start risky behaviors. This is also the period of life in which it could come to HPV infection. An adequate knowledge of risk factors and prevention including one of the simplest ways of prevention such as the possibility of immunization against HPV in teens should be a top priority of education in this particular population. Yet it is also the age at which we learn quickly and efficiently.

Cervical cancer is one of the malignancies of known etiology and risk factors, so it is possible to prevent and detect the disease at an early stage of its development.

According to the World Health Organization (WHO) definition there are 3 types of cervical cancer prevention:

- 1) primary prevention, or prophylaxis of disease;
- 2) secondary prevention, which is the early detection of precancerous lesions and early forms of cancer;
- 3) tertiary prevention which consists of reducing mortality from cervical cancer through effective diagnosis and treatment of the disease [15].

Primary prevention that aims to reduce the incidence of cervical cancer depends largely on the involvement of nurses in the education of children and their families [16].

2. The aim of the study

The main objective of this study was to investigate the knowledge of a teenagers on the epidemiology, diagnosis and methods of prevention of cervical cancer. The specific

objective was to determine the role of the school nurse in the implementation of pre-ventive measures in this respect, in the opinion of the respondents.

3. Material and methods

The study was conducted in the period from March to April 2012 at the XXIII High School

in Lublin during educational classes. The study group consisted of 121 girls attending class III.

To achieve the objectives of the study we exploited a diagnostic survey method using a questionnaire.

The research tool was the original questionnaire prepared for this study. The questionnaire consisted of 19 closed questions of one or multiple-choice on the issue of cervical cancer, ie. epidemiological data, the factors conducive to the development of the disease, methods of diagnosis, sources of knowledge and the educational expectations of the respondents to the school nurses in terms of prevention of cervical cancer.

4. Statistical analysis

The results of the survey were statistically analyzed using the computer program Statistica 10.0 (StatSoft, Poland). Measurable variables were calculated by mean value and standard deviation values and unmeasurable variables were shown by the frequencies and

In order to verify a research tool, we conducted a pilot study, which involved 20 girls. Analysis of the results of the pilot project showed the correctness of our research tool, which enabled to start conducting proper research. The study was approved by the school principal, school counselor, teachers and adult respondents. Before the observation started teenager respondents were informed of the purpose and total anonymity of the tests. Participation in the research was voluntary.

percentage. To compare the qualitative characteristics of homogeneity chi-square test was used. To investigate the existence of the relationship between the studied traits Chi-Square Test for Independence was used. The level of significance was set at 0.05.

5. Results

The study included 84 high school girls at the age of 18 (69%) and 37 19-year-old (31%)

(Figure 1). Most of the respondents were students from the city (57.85%; n=70).

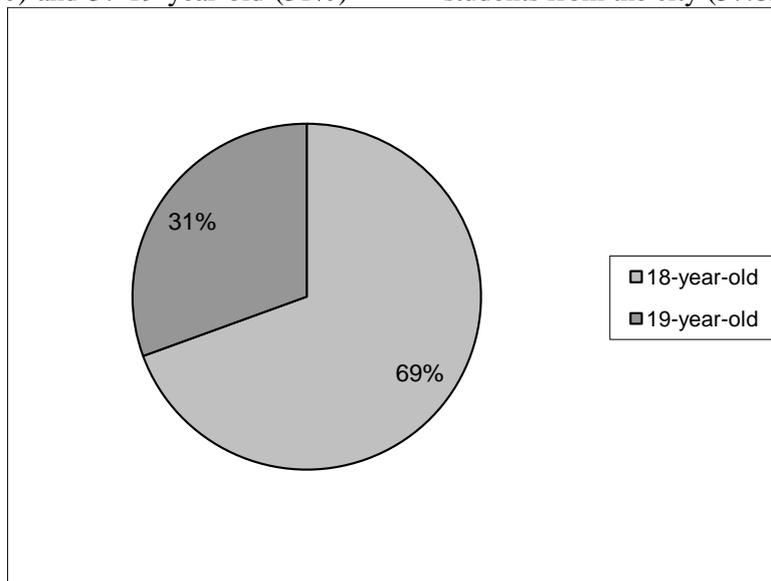


Figure 1. Percentage of respondents according to age [own elaboration]

Knowledge about the incidence of cervical cancer in Poland had 21.49% of the respondents, the rest of respondents have given the wrong answer (45,46%) and marked the answer 'do not know' (33.05%). Similarly, only 16.53% knew the percent of mortality of this disease in our country, while 38,84% of high school girls admitted that they did not know, and a further 44.63% gave a wrong answer.

According to the respondents most frequently mentioned risk factors for cervical cancer were: HPV infection (79.34%), untreated chronic inflammation of the genital tract (71.07%), a large number of sexual partners (55.37%), while less pointed were: cigarette smoking (23.14%), early sexual initiation (37.19%), a large number of births (13.22%), long-term use of oral contraception (20.66%) or poor diet (4.96%) (Table 1).

Table 1. Knowledge of the risk factors for cervical cancer

Determinant	n	%
tobacco smoking	28	23,14
untreated chronic inflammation of the genital tract	86	71,07
early sexual initiation	45	37,19
HPV infection	96	79,34
large number of sexual partners	67	55,37
case of cervical cancer in family	83	68,60
large number of births	16	13,22
long-term use of oral contraception	25	20,66
poor diet (poor in fruits and vegetables)	6	4,96

* The values do not add up to 100% due to the ability to select multiple answers

Source: Own elaboration

Most of the respondents knew that cervical cancer was the most common among women aged 35-59 years (n=107; 88%), only 12%

of teens reported the wrong answer or did not know.

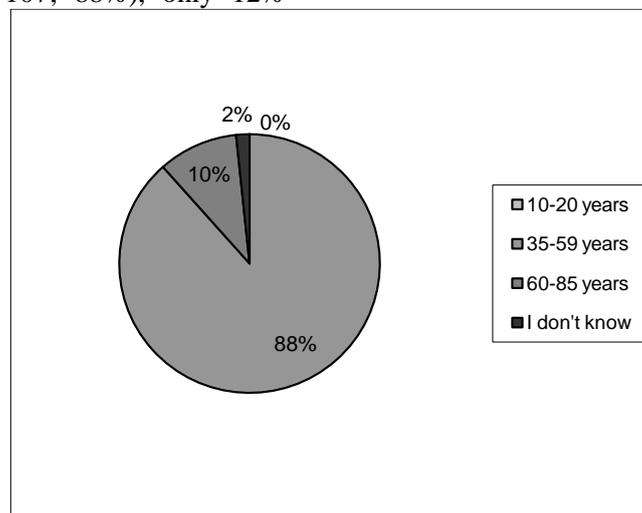


Figure 2. Percentage of respondents with regard to knowledge about the age at which women frequently suffer from cervical cancer [own elaboration]

78.51% of teenagers was oriented that the diagnostic test in the prevention of cervical cancer is the Pap test, while 15.72% of respondents answered incorrectly, that angiography (5.8%), mammography (4.96%) or marked ' I do not know ' (4.96%). Only

14.88% of respondents correctly indicated that the Pap smear should be done every 3 years, while 0.93% of them felt that once a month, 55.37%, that once a year and 28.92%, twice a year. The results are shown in Table 2.

Table 2. Knowledge about methods of diagnosis of cervical cancer

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Answers	N	%
The basic test to detect cervical cancer in your opinion is		
Pap smear test	102	78,51
Mammography	6	4,96
Angiography	7	5,8
I do not know	6	4,96
How often women should perform Pap smear?		
Once per 3 years	18	14,88
Once a month	1	0,93
Once a year	67	55,37
Twice a year	35	28,92

Source: Own elaboration

Factors that prevent cervical cancer most often chosen by respondents were: vaccination against HPV (81.82%), regular visits to the gynecologist (85.12%), cervical smear tests (79.34%) and the treatment of erosions (42.98%).

Subsequently, teenagers indicated vitamins supplementation (6.61%), proper diet (8.26%) and the reduction of sexual contacts (27.27%) (Table 3).

Table 3. Knowledge about cervical cancer prevention

Answers	n	%
Vitamin supplementation	8	6,61
HPV vaccination	99	81,82
Use of condoms	51	42,15
Balanced diet	10	8,26
Regular checkups at the gynecologist	103	85,12
Regular cervical smear tests	96	79,34
Treatment of cervical erosions	52	42,98
Reduction of sexual contacts	33	27,27
I do not know	3	2,48

* The values do not add up to 100% due to the ability to select multiple answers

Source: Own elaboration

Information about cervical cancer schoolgirls primarily acquired from TV, radio, newspapers (66.94%) or the Internet (47.11%), and less frequently from the doctor (14.88%),

family / friends (29.75%) and very occasionally from the school nurse (4.96%) (table 4).

Table 4. Sources of knowledge about cervical cancer

Sources	n	%
fromTV/ radio/newspapers	81	66,94
from a doctor	18	14,88
from a nurse/midwife	6	4,96
from Internet	57	47,11
from a family/ friends	36	29,75
from other sources	1	0,83

* The values do not add up to 100% due to the ability to select multiple answers
Source: Own elaboration

The results showed that 51.24% of respondents expect education programs or talks on the prevention of cervical cancer from the school nurse, while another 26.45%

seeking for informative meetings with patients with cervical cancer or some said they did not expect anything (22.31%).

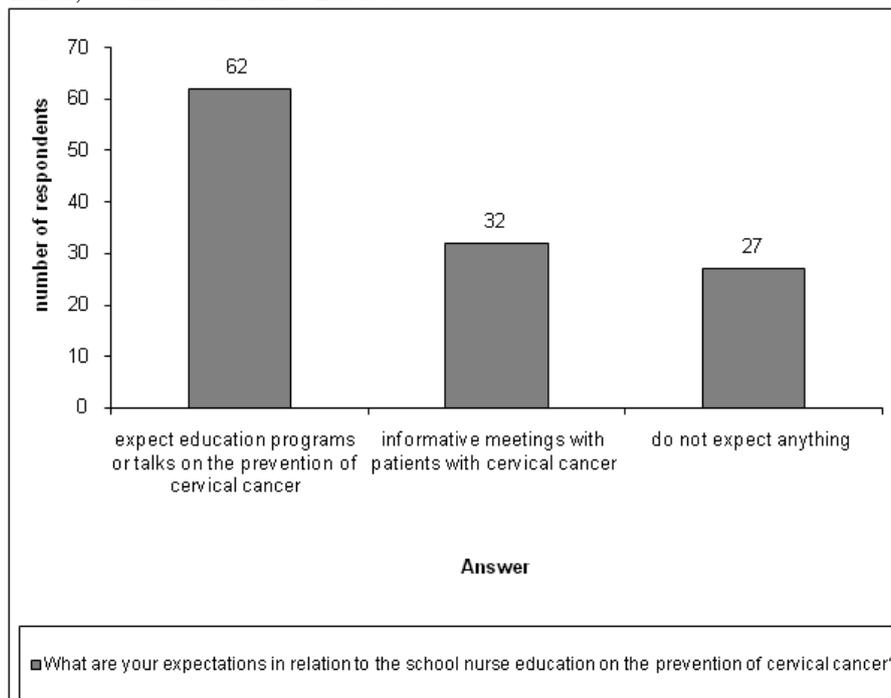


Figure 3. Expectations of school nurses about the prevention of cervical cancer [own elaboration]

6. Discussion

The analysis of the collected research data shows that the respondents do not have any knowledge about epidemiological data concerning cervical neoplasms. Only as little as 21.5% of respondents did know what the incidence of cervical cancer was. As few as 16.5% of respondents provided correct answers to questions about the cervical cancer mortality rate in Poland.

Female secondary school students did not have complete knowledge of factors that contribute to the development of cervical cancer. The study shows that the most frequent risk factors listed by female teenagers included HPV infection (79.3%), chronic untreated infections of the genital track (71%), and a large number of sexual partners (55.4%). The respondents did not know that risk factors include also smoking,

early sexual initiation, large number of childbirths, long-term use of contraceptive pills, and bad diet. A large proportion of respondents (68.6%) believed family history of cervical cancer to be a risk factor. A study conducted by Baay et al. showed that female students and mature women believed the most important determinants of cervical cancer to be genetic predispositions and recurring bacterial infections. Only 3.1% of those women considered the role of HPV in the progression of cervical neoplasms [17]. In addition, a recent analysis has confirmed that the knowledge of young women on the development and prevention of this neoplasm is rudimentary. As few as 51% of students were familiar with the corresponding recommendations [18].

In our study, the most frequently mentioned factors that prevented cervical cancer included vaccines against HPV (81.8%), regular gynaecological check-ups (85.1%), cytology (79.3%) and treatment of erosions (43%). It is important to note the fact that female secondary school children also knew that early sexual initiation and large number of sexual partners could contribute to the development cervical cancer (59.5%) and that human papillomavirus infection could be transmitted during intercourse (88.4%).

Similar results were obtained in a study by Iwanowicz-Palus et al., where 52.5% of the female subjects had knowledge of the correlations between early sexual initiation and incidence of cervical cancer. In addition, more than a half of those subjects (57%) did know that there is a relationship between frequent change of sexual partners and increased risk of developing cervical cancer [19].

The most effective method for the prevention of cervical cancer is health education. It should be provided for both girls and boys, already during their teenage years, before their sexual initiation. It is crucial that women develop a habit of taking care of their own health, thus increasing the likelihood of their participation in cytological tests as part of screening programmes. Cytological screening tests are complemented by colposcopy, which verifies any diagnosed irregularities. The Polish Gynaecological Society recommends that cervical cancer prevention programmes cover mainly women aged 25 to 59 [20, 21].

Education is helpful, yet insufficient, to completely prevent human papillomavirus infection due to its high prevalence. Preventive vaccination against HPV is much more effective,

but not infallible. Vaccines against HPV are to be used by persons who have not been infected by human papillomavirus infection, or who have not been sexually active yet. These vaccines are preventive in nature and do not eliminate any pre-existing infections or lesions. Neither do they provide protection against other virus types. Moreover, vaccinated women should still undergo screening tests recommended by the Polish Gynaecological Society [22]. The results of this study show that 66.9% of respondents obtained their knowledge about cervical cancer prevention from TV, radio and newspapers. Moreover, 47.1% of respondents acquired it from the Internet, and only 4.9% gained it from their school nurse.

A study by Iwanowicz-Palus et al. showed that the main sources of knowledge about cervical cancer included gynaecologist (25.9%), the media (20%) and literature (21.8%) [19]. In international analyses, patients obtained information about cervical cancer from their doctors or medical websites, which was associated with their greater awareness of the possible prevention measures in this area [23].

The development of female awareness and broadly defined cervical cancer prevention measures relies heavily on the role of nurses. Individual interactions between nurses and female patients improve the latter's motivation for taking care of their own health, mainly by providing them with knowledge about prevention and health promotion, basic information about neoplasms, and the development of appropriate health behaviour. By listening attentively, sharing information and helping patients solve their disease and treatment-related problems, nurses provide support and determine the outcomes of treatment and rehabilitation. Concerns, fear and stress experienced by women are usually due to their ignorance, uncertainty and confusion. Women who have knowledge about their own bodies, and are aware of the risks, are likely to look after their health, aware of the fact that it is largely up to themselves to prevent the disease. The role of a nurse is to contribute to the efforts for the primary prevention of neoplasms by providing support to women in adopting appropriate health behaviours. They should engage in secondary prevention measures and efforts to detect neoplasms early on, by providing information about the immense importance of programmes focusing on screening tests and opportunities for undergoing such tests, and also by encouraging women to undergo such tests [24, 25].

7. Conclusions

The main sources of knowledge about cervical cancer are mass media.

Teenagers expect to extend existing general, screening preventive methods on educational programs (talks, meetings with women affected by this cancer).

Respondents have basic knowledge about the prevention of cervical cancer, however there is the lack of knowledge of the nature of the disease.

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