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The knowledge of young women about cervical cancer

Abstract

Introduction. Women in Poland suffer from and die of cervical cancer more often than women from other European countries. The reason for this phenomenon is the fact that women in Poland are reluctant to perform Pap smear tests. Reluctance to undergo a Pap smear is due to low awareness of its course. Numerous studies show that women do not know much about the course of illness, risk factors and prevention of cervical cancer. In its prevention, health behaviors are important from the moment of sexual initiation, so it is important that young women have sufficient knowledge about it.

Aim. Determining the state of knowledge of the respondents, comparing social awareness to previous research and proposing new preventive solutions.

Material and methods. An anonymous questionnaire survey was conducted in electronic form among women aged 16-25 from all over Poland. The study was conducted using a proprietary questionnaire (Google form) completed online. The questionnaire contained closed questions verifying the knowledge of the topic under study and personal information. The following computer programs were used for statistical analysis of data: Statistica and Microsoft Excel.

Results. Almost half of the surveyed women believes that the use of oral hormonal contraception does not increase the risk of developing cervical cancer. One in ten women does not know about the existence of an HPV vaccine. Nearly one third of the respondents do not see a gynecologist at all. Nearly two-thirds of women do not perform a Pap smear.

Conclusions. The surveyed women have some knowledge concerning cervical prophylaxis, but they rarely use it in practice. However, the knowledge of women about the symptoms and risk factors of cervical cancer is small. Too few women know about the existence of a cervical cancer prevention program in Poland.

Keywords: prevention, health education, cancer, cervical cancer.

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INTRODUCTION

As the World Health Organization reports, cervical cancer is the fourth most common cancer in women. In 2018 it was diagnosed in 570 000 of women worldwide, and approximately 311 000 of women died as a result of the disease [1]. According to the National Cancer Registry, in 2018, as many as 2360 women had cervical cancer in Poland, which constitutes 2.8% of all diagnosed cancers in women in 2018 and comes in the 8th place (among 11 types taken into account). Since 2000 in Poland, the number of cervical cancer cases and deaths has been decreasing and age limit for the diagnosis of the disease has been moving up. In 2018 the peak incidence of this type of cancer was the seventh decade of life, while in 2000 it was a group of women aged 45-54 years old. What is more, a gradual decrease in the number of cases among younger women (35-44 years old) has been observed, compared to data from 2000 [2]. The number of both disease cases and deaths resulting from it in Poland is higher than an average of European countries [3]. Undoubtedly, the cause for this is a small proportion of women who perform Pap smear tests (about one-third). Therefore, it may be unquestionably stated that health awareness among women at the age covered by the cervical cancer prevention program (25-59 years old) is

low. Among the reasons why women avoid the examination may be low awareness of its course – according to conducted research, persons with lower education level and those living in the countryside very often do not know how the sample for a Pap smear is collected, indicating e.g. surgical tissue removal. Such belief may lead to unnecessary fear and reluctance to examination [4]. On the basis of numerous studies, it can be also stated that the knowledge concerning symptoms, risk factors and prevention of the disease among women is low [4,5]. It has long been known that there is an inseparable link between a chronic HPV infection and development of cervical cancer; however participation of many other factors in pathogenesis of the illness cannot be excluded. A growing number of reports indicate a diet as one of such factors. A study conducted in 2020 informs that various food ingredients (A, C, E, D, B9 vitamins and polyphenols) have a significant influence on development of cervical cancer by inhibiting the development of HPV infection [6]. An impact of smoking cigarettes on development of cervical cancer has been known for years – it increases chances of squamous cell cancer development [7]. The use of oral hormonal contraception also increases the risk of cervical cancer development (mainly adenocarcinoma); the longer this type of contraception is used, the bigger risk of the disease. It needs to be underlined that the risk decreases after

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some time from stop of using it [8]. In numerous research the focus was on relationship of cervical cancer development with other pathogenic microorganisms. It was proved that *Trichomonas vaginalis* infection enables development of HPV infection [9]. What also proved to be important, was the composition of the vaginal microbiome, if it is dominated by *Lactobacillus* bacteria, the chance for cervical cancer development is lower [10]. What is more, an influence of pregnancy on cervical cancer is also worth mentioning. During this period, a diagnosis of cervical cancer is especially difficult – the same symptoms may be the result of both, the cancer and pregnancy. In the time of pregnancy, transition from non-invasive to invasive form of disease practically never happens, however the cases of regression after the end of pregnancy are frequent [11].

AIM

Determining the state of knowledge of the respondents (together with investigating relationship between knowledge and other data), comparing social awareness to previous research and proposing new preventive solutions.

MATERIAL AND METHODS

An anonymous questionnaire survey was conducted in electronic form among 451 women aged 16-25 from all over Poland. The study was conducted using a proprietary questionnaire completed online. The questionnaire contained closed questions verifying the knowledge concerning cervical cancer (epidemiology, risk factors, symptoms and prevention) and personal information (age, voivodeship, the size of the place of residence, level of education and status of relationship). The following computer programs were used for statistical analysis of data: Microsoft Excel and Statistica.

RESULTS

The biggest part of the respondents was 18-20 years old, most of them lives in Masovian Voivodeship (19.51%) and Lublin Voivodeship (10.64%). When it comes to 36.14% of the surveyed, they live in the village, while 20.40% in the cities up to 50 thousand of residents. A significant part of the study group (69.18%) has secondary education. The majority of the respondents are university students (47.89%) and high school students (42.79%). Similar percentage of participants declares being in informal relationship (46.34%) and not being in any relationship (52.55%).

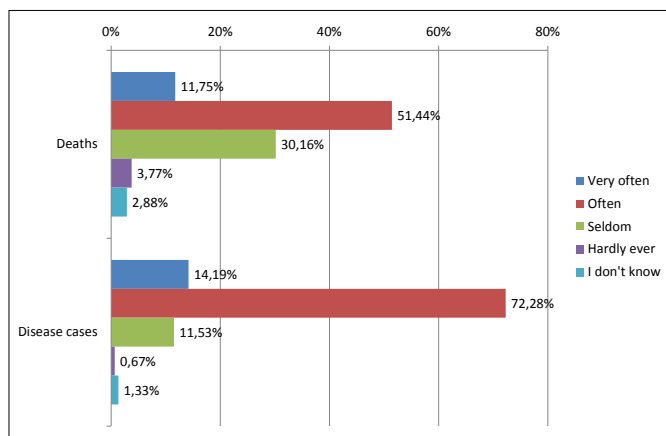


FIGURE 1. In your opinion, how often do the women in Poland die of/suffer from cervical cancer?.

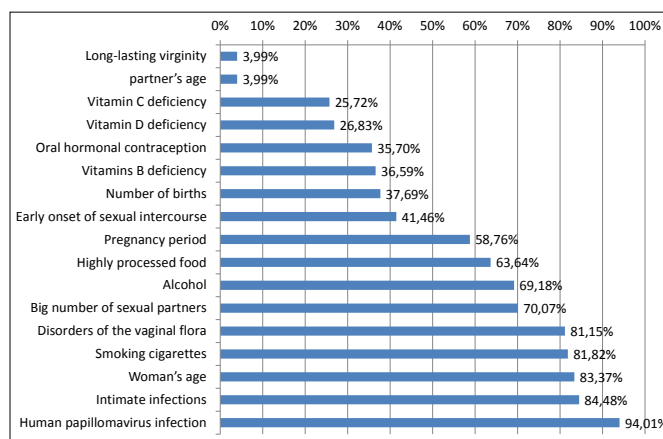


FIGURE 2. Cervical cancer risk factors.

The majority of respondents (87.14%) thinks that HPV is a virus, however almost every tenth person believes that it is a type of cervical cancer, which significantly outnumbers the rest of proposed answers. The vast majority of study participants (90.02%) is convinced that one may get infected with human papillomavirus through sexual contact, while insignificant number of persons (0.44%) believes that it is possible to get infected via infected saliva droplets. Most of participants (73.84%) thinks that there is a vaccine against human papillomavirus, however almost every tenth young woman (9.31%) states that it does not exist. The vast majority of the studied persons (70.07%) believes that it is significant at what age the vaccine protecting against human papillomavirus infection is performed. When it comes to 16.19% of respondents, they are convinced that the age of being vaccinated is irrelevant. The vast majority of the studied persons (86.70%) thinks that cervical cancer symptoms are present at its late stage, while insignificant part of respondents (0.2%) claims that the symptoms are visible immediately after falling ill.

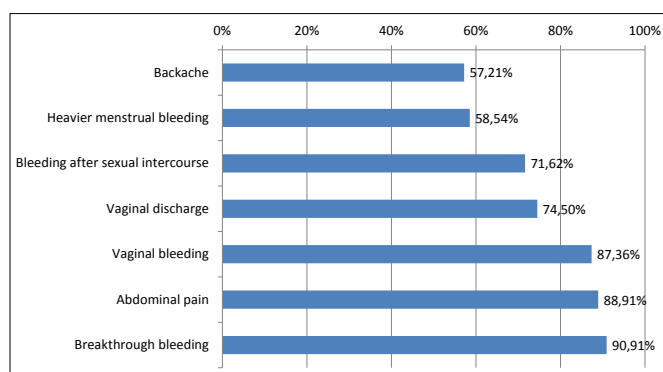


FIGURE 3. Cervical cancer symptoms.

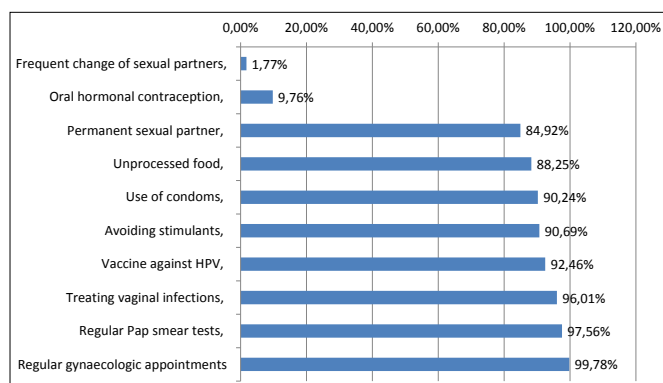


FIGURE 4. Rules concerning cervical cancer prevention.

Almost half of respondents indicates salmon as a rich source of vitamin D (52.22%). As a rich source of folic acid, the study participants pointed spinach and salmon. The majority of respondents (58.98%) chose wild rose as rich in vitamin C. Over half of respondents thinks that there is a cervical cancer preventive program in Poland. Every third study participant could not answer this question. A vast majority of respondents (over 90%) believes that a sample for Pap smear test is mucus and exfoliated cervical epithelium, which is collected with a special brush. Every 20th respondent claims that the sample constitutes an excised fragment of cervix. Over a third of study respondents (35.25%) never goes to gynaecologist. Similar number of respondents (nearly 18%) goes to this specialist only situationally or every six months. Main source of the respondents' knowledge on cervical cancer is the internet. The remaining two main sources are respectively, information brochures and gynaecologist.

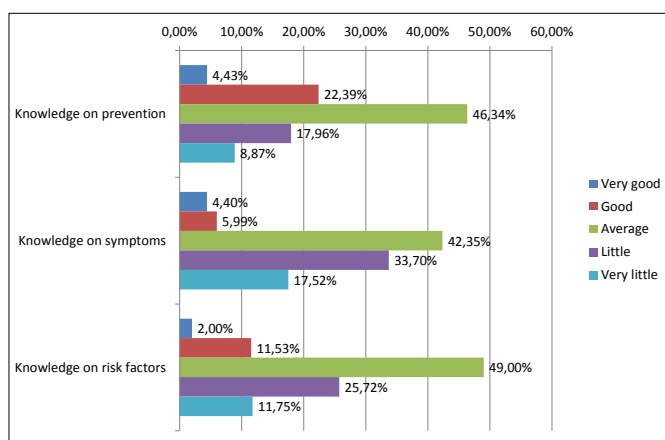


FIGURE 5. Subjective assessment of respondents' knowledge.

DISCUSSION

Taking into account incidence, cervical cancer is the eighth most frequent cancer among Polish women. Mortality caused by cervical cancer is not the main problem among women in Poland – in 2018 slightly over 1500 women died of this type of cancer, which constitutes 3.5% of all deaths due to cancer in women [2]. Despite this, Poland is among the European countries whose citizens are the most frequently diagnosed with cervical cancer. As a result of this cancer, only women from Romania, Bulgaria, Lithuania and Latvia die more often than Polish women [3].

Cervical cancer risk factors include age, early onset of sexual intercourse, big number of sexual partners, [12], highly processed food and vitamins deficiencies [6], smoking cigarettes [7], oral hormonal contraception [8], intimate infections [9], disorders of the vaginal flora [10], number of births [11] and persistent human papillomavirus infection [12].

While the most frequently given by the studied women answers were human papillomavirus infection (94.01%), intimate infections (84.48%) and woman's age (83.37%). Most of the respondents also agrees that significant in development of cervical cancer are: disorders of the vaginal flora (81.15%), smoking cigarettes (81.82%) and big number of sexual partners (70.07%) (Figure 2). Also in the study by P. Kalinowski et al., respondents often chose HPV infection, inflammatory states of vagina and big number of sexual partners as risk factors of this cancer incidence [12].

Eating vegetables and fruit containing a significant number of vitamins may contribute to inhibition of cervical cancer development. Special attention is focused on vitamins C and E, as well as influence of B vitamins, vitamin A and D [6]. Unfortunately, the respondents in the own study, in majority, did not have the knowledge on this topic and vitamins deficiencies were not often considered as risk factors by them (Figure 2).

When it comes to an influence of smoking tobacco, according to the International Collaboration of Epidemiological Studies of Cervical Cancer, smoking cigarettes significantly increases risk of cervical cancer development, whereby the more cigarettes is smoked daily and the earlier a woman starts smoking, the higher risk [7]. The surveyed in the own study women in majority are aware of negative impact of smoking tobacco on development of cervical cancer (Figure 2). Smaller knowledge was shown by women taking part in the study by D. Sawaryn et al., as a significant part of them did not know whether smoking cigarettes needs to be connected with risk of cervical cancer [13].

Use of hormonal contraception, especially for a longer period of time, is connected with increased risk of cervical cancer development [8]. Women using longtime contraception are twice more exposed to viral infections [13], including human papillomavirus infection. Only the third part of respondents in the own study correctly classified oral contraception as a risk factor, which proves a significant lack of knowledge on this issue.

Intimate infections also increase probability of cervical cancer occurrence in patient – attention is paid, among others, to vaginal trichomoniasis, which, with HPV co-infection, significantly increased the risk of this cancer development [9]. Over 80% of women taking part in the own study knew the risk concerning intimate infections (Figure 2), which is a satisfactory result.

Vaginal microbiome dominated by *Lactobacillus* is beneficial for the host, whereas dysbiotic vaginal microbiome, containing anaerobic bacteria, is connected with numerous gynaecological conditions, including cervical cancer [10]. Respondents also showed good knowledge in this area, as over 80% correctly assessed the risk coming from vaginal microflora disorders (Figure 2).

Vaginal microbiome disorders and intimate infections, together with human papillomavirus infection, are connected with sexual acts, that is why big number of sexual partners and early age of sexual intercourse increase the risk of cervical cancer. While big number of sexual partners was indicated by a significant part of respondents, unfortunately, early sexual initiation increases the risk of cervical cancer only according to approximately 40% of women (Figure 2). In the studies by W. Baran et al., only a quarter of the surveyed women associated frequent change of sexual partners with the increased cancer risk, which compared to own results, may mean growing awareness of women on this matter [5].

Risk factors of this cancer also include: bigger number of births and period of pregnancy, which is known only by nearly 60% and 38% of respondents respectively (Figure 2). A possible pathogenesis consists in coexistence of persistent HPV infection with hormonal and immunological changes in the pregnant woman's organism. Despite the fact that it is a rare condition, it is at the same time the most frequent malignancy connected with pregnancy [11].

Human papillomavirus is sexually transmitted. The surveyed young women in majority correctly chose the route of infection as sexual contacts (90.02%), and similar results were obtained in the study conducted among students from Lublin [11]. However, it was not that obvious for the respondents in the study by Sawaryn and Wróbel – then sex with penetration was indicated by 59% of women [13].

A part of primary prevention against cervical cancer are vaccines against oncogenic types of human papillomavirus. Almost three quarters of respondents knows about existence of such vaccine, while 16% does not have a position on this point. Polish Immunisation Program for a few years has been recommending vaccines against HPV in girls and young women, however their cost must be covered by a patient or her parents, therefore vaccination rate in Poland is very low [4]. In the study by Kalinowski et al., most of the students from Lublin universities knew about existence of HPV vaccine [12].

Approximately 90% of respondents correctly indicates most of cervical cancer symptoms. However, almost three quarters of them chose bleeding after sexual intercourse and vaginal discharge as a disease symptom. Only nearly 60% of the surveyed women knows that heavier menstrual bleeding and backache indicate this cancer (Figure 3). Despite the fact that the respondents' answers are true, it needs to be observed that these symptoms are nonspecific and may indicate other diseases.

The surveyed women show big awareness concerning preventive rules of cervical cancer. About 90% of them gave the correct answer to most of the questions from this area (Figure 4). Similar results were obtained in the study in 2013, and in the present study we can observe growing awareness of women on this matter [12].

However, more and more reports draw attention to an important influence of eating. One of such reports is a study conducted in 2020, in which an impact of antioxidants and some vitamins (i.a. C, D and folic acid) on cervical cancer development is described. Well-balanced diet and vitamins intake may have an important influence in prevention of the discussed cancer [15]. In the own study it was proved that 40% of respondents was not able to correctly indicate food ingredients rich in vitamin D, and a third part of respondents – ingredients rich in folic acid. The majority of respondents correctly chose food rich in vitamin C.

Unfortunately, in spite of the fact that most of study participants is aware of the existence of cervical cancer preventive program, as much as 30% does not have knowledge concerning its activity. In the study conducted in 2014, a similar percentage of women (40%) did not know what cervical cancer preventive program is about [14]. Over 90% of respondents knows the method of collecting sample for Pap smear. As compared to the study from 2014, knowledge concerning this method increased by 20% [14].

What is disturbing, is that only 34% of study participants performs Pap smear, out of whom only 19% does it regularly, while as much as 65% does not undergo examinations at all. Similar results were obtained in the study from 2013, when the same percentage of respondents admitted to had never undergone Pap smear [12].

In the study group, one-fifth goes to gynaecologist once a year, while 18% of women – every six months. Similar percentage visits this doctor only situationally. It is worrying that as much as 35% of respondents does not go to gynaecological

appointments at all. Similar results were obtained in the study in 2014, in which 43% had never been to a gynaecologist [14].

Among women participating in the study, the most frequent source of knowledge concerning cervical cancer is internet. When it comes to 70 respondents, they indicated their friends as a source of knowledge, and half less – a family doctor, which may signify not enough attention paid on prevention during appointments in health centers. Also, only 61 women indicated TV, while 49 persons – women's press, which, taking into consideration potential of both media, is an unsatisfactory result. Almost all the participants admitted that they are interested in the subject of cervical cancer, it is a positive outcome, proving that women are really interested in this topic. The results are confirmed by a study from 2013, in which the main source of knowledge was also internet [5].

In all the categories almost half of respondents assesses the level of their knowledge as average. In reality, in the own study, the surveyed women showed great level of knowledge concerning prevention, and satisfactory level when it comes to cervical cancer symptoms. Most of women correctly evaluated their knowledge on risk factors as average or little (Figure 5). Similar results concerning prevention and risk factors were obtained in the study, in which women's objective level of knowledge was assessed [12].

CONCLUSIONS

1. Young women show greater knowledge on the topic of smoking tobacco and cervical cancer incidence in comparison to study results obtained in the past.
2. Young women are not aware of the relationship of long-term use of hormonal contraception as well as early onset of sexual intercourse, and cervical cancer development. Education on this matter needs to be provided, among others, through the activities of foundations dealing with women's rights.
3. Women are not aware that one of the cervical cancer risk factors is vitamins deficiency, and also 40% and 33% of them respectively, do not know the products rich in vitamin D and folic acid. It is necessary to broaden awareness on this matter through educational programs and activities of organizations related to cancer prevention.
4. Despite the fact that young women are aware of the necessity of regular gynaecological appointments and performing Pap smears, the majority of them do not practice it in reality.
5. Every fourth woman does not know about cervical cancer prevention program in Poland, in comparison to 2014 study, improvement of women's knowledge concerning preventive program and its activities, is not still observed. It is necessary to promote preventive program, among others, in social media, in order to address this problem.

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