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Assessment of women's awareness about reproductive and breast cancers

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ABSTRACT

Introduction. The aspect of prevention and treatment of malignant tumours is a key problem of public health in Poland, posing a great challenge for the health care system. A perfect method of fighting against neoplasms is prevention. Its widespread use may allow reduction in the risk of developing cervical and breast cancer.

Aim. The aim of the paper was to assess women's awareness about prophylaxis and risk factors related to the development of reproductive and breast cancers among women subject to the survey.

Materials and Methods. The analysis comprised a group of 154 women at the age from 17 to 70. The study was conducted between 17 March and 30 July 2015. The research tool used in the study was an independently prepared survey questionnaire.

Results. The biggest group of respondents (48.70%) was made up of women at the age from 20 to 30. 68.83% of the women had a secondary level education, 42.20% were women from cities of between 51,000 to 100,000 inhabitants and only 1.94% represented large cities of over 500,000 inhabitants. A change in the size or shape of the breast (88.96%) and changes in the look of the nipple (86.36%) were quoted as the most frequent symptom of breast cancer.

Conclusions. The knowledge about reproductive organs and breast cancer prevention among women is not fully satisfactory and needs to be broadened. Media (internet, television) were the most popular source of information on cancer prevention among the respondents. It is necessary for family doctors and midwives to intensify health-care activities aimed especially at women who are the age associated with an increased risk for cancer.

Keywords: cancer, risk factors, prevention.

Introduction

Breast cancer is the most frequently diagnosed malignant tumour among women in Poland. It accounts for about 20% of the total number of cancers affecting women [1].

Up until now the direct cause of the development of breast cancer has not been identified. The most

important risk factors include female sex, age and the occurrence of breast cancer in relatives in the first and second degree of consanguinity [2]. Women with a BRCA1 gene mutation have about 45–90% higher risk of developing breast cancer [3], and the risk of ovarian cancer stands at the level from 16 to 60% [4]. In comparison, in women with a BRCA2 gene mutation the risk of developing breast and ovarian cancer is 31–56%

and 11–27% respectively [5]. Besides, the formation of breast neoplasms is significantly influenced by a particular lifestyle, which is a combination of many factors such as the type of diet followed, especially rich in animal fats, tobacco smoking, drinking alcohol or insufficient physical activity.

Another risk factor related to developing breast cancer is the early age of the first menstrual period and the late age of the last menstrual period. Getting the first period before the age of 16 causes the risk of breast cancer to rise by about 75%. Likewise, the first delivery at the age of 35 and later increases this risk as many as 2.6 times [6]. On the contrary, late first menstrual cycle, full-term pregnancy before the age of 20, breastfeeding and taking physical exercise decrease the probability of getting cancer [7].

Observations carried out over the past few years confirm that the most substantial role in the development of cancer of the female reproductive system is played by the sexual activity of both women and men. It is particularly visible in the case of cervical cancer. Many studies [8–10] show that apart from HPV, which is the main factor in the aetiology of cervical cancer, other elements favourable for the development of the condition are tobacco smoking, lowered immunity, hormonal disorders and vitamin A deficiency. The presence of the HPV virus in 99.7% of the cases of cervical cancer confirms the relationship between an HPV infection and cervical cancer [11].

A perfect method for combating cancer is prevention. It is possible to reduce the risk of cervical, ovarian and endometrial cancer by the implementation of preventive measures.

The purpose of primary prophylaxis is to prevent the development of malignant tumours through an overall set of activities which aim at lowering the risk of getting cancer. Primary prophylaxis intends to reduce the mortality rate and development of malignant neoplasms by defining factors which impact the emergence of the disease, finding out about mechanisms related to how the disease progresses and promoting a pro-health lifestyle.

Apart from primary prophylaxis, an important role is played by secondary prophylaxis, which consists in screening. Screening makes it possible to detect pre-cancerous conditions or early stages of cancer. The early detection of cancer affords a greater chance of a cure by using treatment methods which are less severe for the patient. It also reduces the risk of metastasis or relapse, which results in longer life and improved quality of life [1].

In order for screening tests for cervical and breast cancer to be successful, it is important to ensure that such tests are organized effectively and social awareness of the issue is augmented and maintained.

Aim

The aim of the paper was to assess women's awareness about prophylaxis and risk factors related to reproductive and breast cancers.

From the initial problem, it was hypothesized that women have a very good understanding of the factors and prevention of gynecological and breast cancer in women.

Materials and Method

The study was conducted between 17 March and 30 July 2015. The group subject to analysis comprised 154 women at the age from 17 to 70. The group included students, employees, disability benefit recipients and pensioners. The surveyed women varied in terms of age, place of residence, education, marital status and type of work pursued.

The research tool used in the survey was an independently prepared questionnaire consisting of 23 open – ended and close – ended questions. The questions were formulated in a way that made them comprehensible for a large group of people. The questionnaire contained questions concerning social and demographic data (age, marital status, place of residence), preventive medical examination and risk factors connected with female reproductive and breast cancers. Furthermore for each question were used criteria of points (0 – no, 5 – very good).

The results obtained were analyzed on the basis of Kruskal-Wallis test, Fisher-Freeman-Halton test and Mann-Whitney test. The p – value of < 0.05 was adopted as the level of statistical significance.

Results

Social and demographic data related to the surveyed women is found in **Table 1**. The most numerous group (48.70%) was made up of women at the age from 20 to 30. The study reveals that 68.83% of the respondents, that is 106 women, completed secondary education and 12.98% possessed vocational qualifications. The analysis of places of residence shows that 42.20% of the women were from cities of 51,000 to 100,000 inhab-

itants, and only 1.94% from large cities of over 500.000 inhabitants.

29.81% of the respondents reported breast and ovarian cancers to be present in their relatives in the first and second degree of consanguinity.

The results show that over 3/4 of the women (n = 106; 68.83%) regularly visit a gynecologist (p = 0,002297). Significant differences in the knowledge of screening were found concerning age. Unfortunately, only 25.97% ask a consultant to prescribe breast ultrasonography (p = 0,0002). Depending on age there was statistically significant difference in the knowledge about the test. 9.74% (15 women) asked a doctor to carry out a breast ultrasound. However, the examination was denied. Another worrying fact is that 20.77% of the respondents had never had cytology performed. In the case of 4.54% (7 women) cytology was performed 3 years before and in the case of 35.71% (55 women) one year before. In the current calendar year cytology was performed in 30 women (19.48%).

61.68% of the women perform a breast self-exam up to the 10th day of the cycle. The remaining numerical and percentage data is presented in **table 2**.

The assessment of knowledge about risk factors concerning breast and cervical cancers is presented in **figures 1** and **2**. A statistically significant difference (p = 0.0330) was observed resulting from the relation between the age of the respondents and the knowledge of risk factors concerning breast and cervical cancers.

As regards the most frequent symptom of breast cancer, the surveyed women pointed to changes in breast size and shape (88.96%) and changes in the look of the nipple (86.36%). The remaining symptoms of

Table 1. Social and demographic data of the surveyed women

Factors	N = 154	%
Age		
Below 20	19	12,33
20–30	75	48,70
31–40	14	9,09
41–50	24	15,58
51–60	14	9,09
61–70	8	5,19
Education		
Higher	28	18,18
Secondary	106	68,83
Vocational	20	12,98
Place of residence		
Up to 10,000 inhabitants	61	39,61
11,000–50,000 inhabitants	21	13,63
51,000–100,000 inhabitants	65	42,20
101,000–500,000 inhabitants	4	2,59
Over 500,000 inhabitants	3	1,94
Marital status		
Single	77	50
Married	46	29,87
Divorced	8	5,19
Widow	9	5,84
Domestic partnership	14	9,09

Table 2. Time of breast self-exam

Time	N = 154	%
Up to the 10th day of the cycle	95	61.68
Up to the 20th day of the cycle	24	15.58
Day of the cycle is not important	15	9.74
Do not know	20	12.98

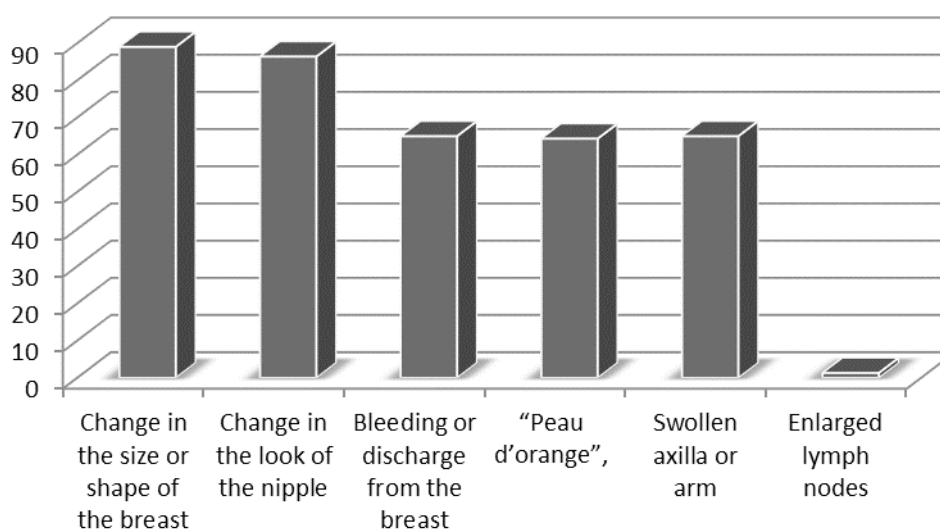


Figure 1. Assessment of knowledge about risk factors concerning breast and cervical cancers

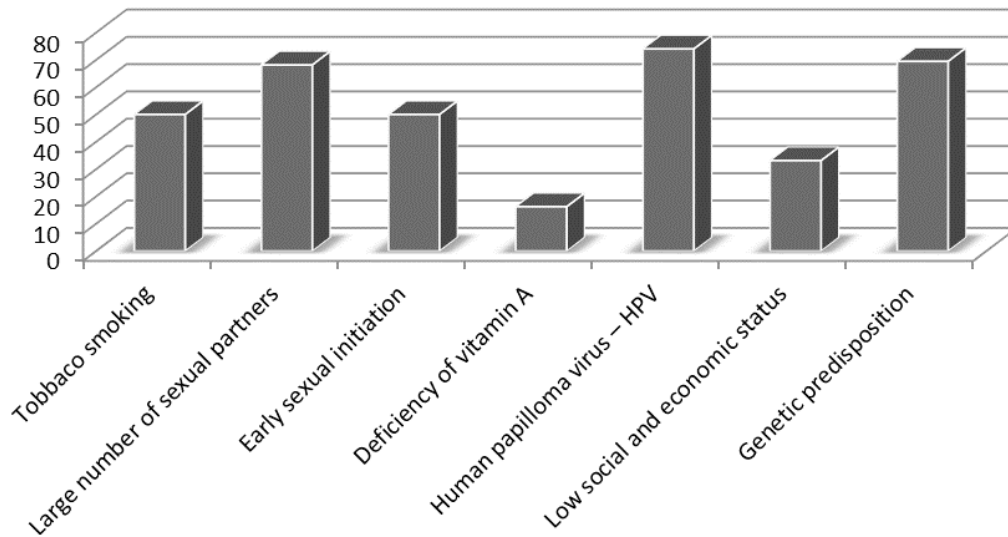


Figure 2. Assessment of women's knowledge about risk factors related to cervical cancer

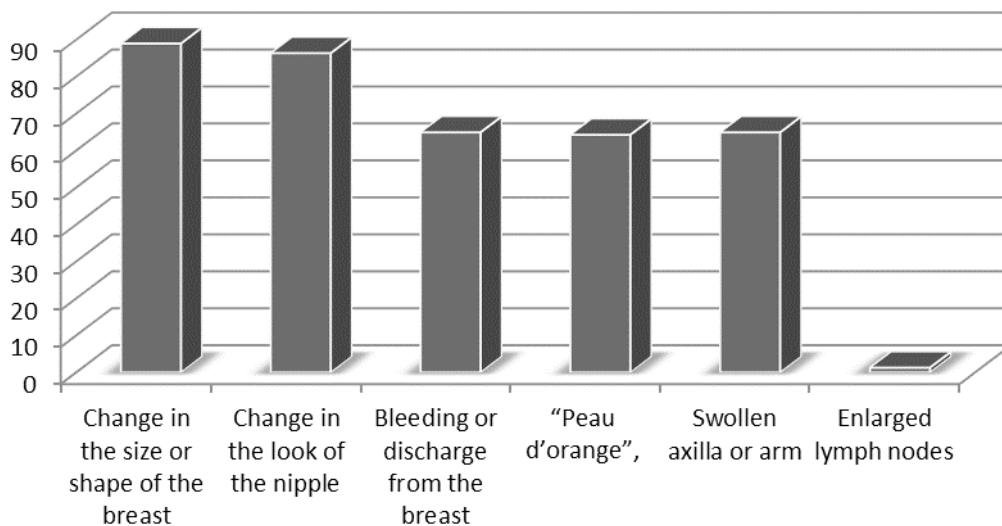


Figure 3. Symptoms of breast cancer

carcinogenesis are presented in **Figure 3**. The analysis showed no statistically significant differences between the knowledge of clinical symptoms of breast cancer and age.

The respondents used a variety of sources to find out about cancer. 73.37% obtained information from the Internet, 42.20% from TV and 31.16% from medical magazines. Only 13.63% (21 women) obtained information from mid-level medical personnel. The remaining numerical and percentage data is presented in **Table 3**.

The study also revealed that 92.85% of the respondents believe that screening tests for cancer should be obligatory. 66.23% know that mammography is a radiological examination of the breast and 88.96% know that

cytology is a method of cervical screening consisting in collecting cells at the outer opening of the cervix. The remaining numerical and percentage values are presented in **Tables 4** and **5**.

Table 3. Sources of information used by the respondents

Internet	113	73.37
TV	65	42.20
Radio	16	10.38
Medical magazines	48	31.16
Conferences/Campaigns	36	23.37
Doctor	45	29.22
Midwife/Nurse	21	13.62

Table 4. What is mammography?

	N = 154	%
Radiological examination of the breast	102	66.23
Breast ultrasonography	45	29.22
Visual inspection of the breast	2	1.29
Palpation of the breast	3	1.94
Do not know	1	0.64

Table 5. What is cytology?

	N = 154	%
Collecting cells at the outer opening of the cervix	137	88.96
Ultrasonography	15	9.74
Cervical self-exam	0	0.00
Do not know	2	1.29

Discussion

Despite access to knowledge about factors precipitating the onset of carcinogenesis, reproductive and breast cancers still pose a major problem for modern oncological gynaecology.

The *National Cancer Institute* [12] puts the risk of developing breast cancer at the level of 12%. It is estimated that the risk in the case of 40-year-old, 50-year-old and 60-year-old females is 1 out of 69, 1 out of 42 and 1 out of 29 women respectively. One can also observe an increase in the occurrence of the condition among younger females. It is probably associated with a higher ratio of women subject to preventive screening. However, the biggest group of cancer-affected patients is made up of women between the age of 50 and 69, who are subject to screening tests performed as part of the National Breast Cancer Early Detection Programme [13].

Performing screening tests allows to diagnose cancer at the early stage of its clinical condition. It is currently recommended for women at the age 50–69 to have screening mammography performed once a year. Moreover, it was proven that an additional physical examination of the breast reduces the mortality rate ranging from 5% up to 20% [14].

The value of mammography in screening is high because women subject to this type of assessment have an opportunity to detect a lesser change than in the case of a breast self-exam or breast ultrasound. This study shows that 66.23% of the surveyed women know what mammography consists in and how significant it is in the prevention of cancer. Maybe this is related to the young age of women participating in the

study. On the other hand, Najdyhor et al. [15] state that 97% of the respondents understand what mammography is about (37% women aged 41–50, 29% women aged 51–60 with secondary education) but only 52% have taken advantage of this test. Research by Przysada et al. [16] shows that 53% of women at the age between 51 and 60 have had a mammography done once in their life.

A basic measure used in the prevention of breast cancer is to perform a self-exam. This study shows that there are women who possess no knowledge about such a procedure. 12.98% of the women did not respond to the question posed and 9.74% of the women think it is has no significance when and how such a procedure should be performed. Research by Paździor et al. [17] reveals that women perform a breast self-exam, but in an irregular way. Only 36% of the women perform a self-exam once a month, while 42% do not pay attention to the right time of doing it. Similar results were obtained by Przestrzelska et al. [18] where, out of 77% of the women performing a self-exam, 12% do it regularly and 10.7% during the recommended time of the menstrual cycle.

An important element of prophylaxis is to perform a regular examination of the breast during an appointment with a gynecologist. This study shows that out of 68.83% of the women presenting to a gynecologist only 25.97% ask for a breast ultrasound. It is also worrying that 9.74% of the women did not have such a test done even if they asked for it. Research by Przysada et al. [16] shows that 60% of the women hardly ever have their breast examined during an appointment with a gynecologist. Only 21% of the women have a breast ultrasound done during each medical checkup, whereas 8% have never had such a test done.

Other elements of breast cancer diagnostics include medical history, physical examination and microscopic examination subject to individual recommendations.

A symptom of breast cancer is a tumour which is markedly different from neighbouring tissues. It is less seldom diagnosed as an ill-defined thickening or concentration of tissue. Advanced cancer-linked changes include skin dimpling, nipple retraction, erythema, swelling, peau d'orange and enlarged irregular veins. Additionally, the ulceration of skin, breast muscles and thoracic wall can be observed.

A rare symptom of breast cancer is a bloody or serous, sticky or watery discharge from the nipple. It must be underlined though that a possible discharge from the nipple should be differentiated from other

non-cancerous causes such as cysts, enlarged milk ducts, using contraceptives or problems with the body's hormones [19].

This analysis shows that in the case of 88.96% of the surveyed women a feature which may testify to breast cancer is a change in the size and shape of the breast and a change in the look of the nipple (86.36%). The lowest number (n = 2; 1.29%) pointed to enlarged lymph nodes as a symptom of breast cancer. Different results were obtained by Paździor et al. [17], where 73% of the respondents quoted the appearance of a lump in the breast, 40% pointed to a bloody discharge from the nipple and 35% to enlarged lymph nodes. Also different results were obtained by Zych et al. [20] from which it results that in the case of most women the primary symptom of breast cancer is the appearance of a lump (84.3%), enlarged lymph nodes (63.7%), discharge from the nipple (66%) and nipple pain (44.6%).

Cervical cancer is a condition closely related to a lifestyle. It is largely contingent on risk factors which include an inadequate amount of physical exercise, bad eating habits, taking stimulants or inappropriate sexual behaviour.

Observations carried out over the past few years have affirmed that sexual activity is a factor that determines the frequency of cervical cancer occurrence. It is particularly visible in female partners of men with a chronic HPV infection.

This analysis shows the main precipitating cause of cervical cancer quoted by the respondents was an HPV infection (74.02%), a large number of sexual partners (68.18%) and genetic predisposition (69.48%). It is confirmed by a study done by Cichočka et al. [21], in which 66% of the respondents point to an HPV infection as the main source of cervical cancer. A different result was obtained by Mędręła-Kuder [22], where as many as 90% of the women consider a chronic HPV infection as a risk factor of cervical cancer.

25–30% of deaths caused by cancer are related to smoking tobacco [23, 24]. In the case of cervical cancer, the probability of developing the condition is twice as high among smokers than non-smokers [24].

The impact which tobacco smoking has on the risk of developing cervical cancer is not fully recognized. Toxins present in tobacco smoke most likely affect the repair process in the DNA of the cervical epithelium cells. Prokopczyk et al. [25] showed a higher concentration of oncogenes in cervical mucosa in tobacco smokers. Additionally, a direct pro-carcinogenic influence of nicotine and conitine was confirmed.

50% of the women surveyed in our study declared tobacco smoking to be a significant factor contributing to the development of cervical cancer.

The basis of diagnostic tests for precancerous and cancerous processes in the cervix is a Pap smear. Kazimierczak et al. [26] conducted research which covered 200 females from the Silesia and Świętokrzyskie Provinces. They provided evidence that women do not have sufficient knowledge about prophylactic cytological investigation for cervical cancer. Only one in every three respondents performed a cytological test once a year, 30% perform it very seldom and 15% do not do it at all. In the group of women aged between 19 and 23, 41% of the respondents had their cytological test done for the first time and 10% of the women had never had cervical specimens collected from the ectocervix. This study revealed that 19.48% had their smear test performed in the current calendar year, 35.71% a year before, 12.98% two years before and 10 women (6.49%) 3 years before.

Health education, which comprises health-improvement activities, ways to prevent diseases and knowledge related to factors precipitating disease emergence, is an inseparable and complementary element of health promotion. A study by Najdyhor et al. [15] shows that a significant role is played by the media, including TV and the press. A much lesser role is played by healthcare workers. Hence, it is a small wonder that as many as 47% of the respondents found out about prophylaxis from TV, 30% from a consultant and only 7% from a nurse. Similar results were shown in this study, where 42.20% of the respondents obtained knowledge about cancer from TV and 31.16% from medical magazines. Only 13.63% (21 women) obtained relevant information from medical staff.

Conclusions

The present study and the analysis of the collected material allowed to get to the following conclusions:

1. Knowledge about reproductive and breast cancer prevention among women is not fully satisfactory and needs to be broadened.
2. Media (internet, television) were the most popular source of information on cancer prevention among the respondents.
3. Extensive social education plays a major role in cancer prevention. A significant responsibility for that rests on family doctors and midwives who, through their statutory activity, should take care of all women, in particular those representing an increased risk group.

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Conflict of interest statement

The authors declare no conflict of interest.

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