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Knowledge and activities for the oncological prevention of women invited for mammography screening as part of the "Population program for early detection of breast cancer"

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Abstract

Breast cancer is a disease most often affecting women in the modern world and a huge challenge for modern medicine. "Breast cancer is not a sentence" - such statement is presented by one of the authors of the book position used in this paper. However, considering statistical data, every tenth woman asks herself whether this statement is true due to the highest percentage of cases of this disease among females. There may be many reasons for this situation, but one should also look at them in the lack of awareness of women about breast cancer prevention. Preventive actions are of considerable importance. They allow real recognition of the problem and implementation of activities aimed at reducing the risk of disease. Undoubtedly, some people are not aware of the seriousness of this situation, and the

second part wonders what the reason for such a high percentage of cases is. The answer is simple - women do not perform self-examination of breasts, do not participate in preventive examinations and report to the doctor when the cancer process is already advanced.

Aim of this paper

The aim of this paper was to evaluate knowledge and activities for oncological prevention of women invited for mammography screening as part of the "Population program for early detection of breast cancer".

Material and methods

The study covered 105 randomly selected women in rural and urban areas of the Podkarpackie Voivodeship aged 50-69 covered by the "Population program for the early detection of breast cancer. The research was conducted in the period from 09/01/2017 to 10/31/2017. The author's questionnaire consisting of 32 questions was used for the research. The research was voluntary and anonymous. For the purpose of this work, the following tests were used for questions on nominal scales for verification of hypotheses: V Kramer (2x3 tables, 4x5 etc.), Phi (2x2 tables) - these are symmetric measures based on chi-square test informing about the strength of dependencies between variables in cross tables. For questions on ordinal scales, Tb - Kendall or Tc tests were used - the first for 2x2 tables, the second 2x3, 4x5 tables, etc. The statistical analysis was carried out using the SPSS program and all relationships are statistically significant when $p < 0.05$.

Results and conclusions

Knowledge and activities for the oncological prevention of women invited for mammography screening under the "Population program for early detection of breast cancer" is low. The source of knowledge about breast cancer is mainly media and leaflets. Women mostly know the main causes and symptoms of breast cancer. Over 70% of respondents say that they know the rules for conducting breast self-examination, but less than half of these women carry them out. Most of the women - 66.7% say that they know the rules of taking mammography, but half of them took part in the program. The most common reason for not using the invitation to study was the lack of time. According to the surveyed women, it appears that this is a program

useful to fight cancer only in 36.5%. However, almost every woman was in favor of publicizing the problem in social media.

Keywords: preventive examinations, women, breast cancer

Introduction

Breast cancer is a huge challenge for modern medicine due to the frequency of occurrence, as well as the diverse etiology of factors conducive to its formation. The disease is characterized by the fact that its formation is not dependent on one particular factor, but on many predisposing characteristics.¹ Considering the basic factor which is gender, women suffer mainly from breast cancer. Male sex is also vulnerable, but to a much lesser extent. In Poland, there are 166.5 female patients per 1 ill male (1:166,5).² The incidence of breast cancer increases with age. Most often it concerns women over 50. The peak of illness usually falls between the fifth and seventh decade of life, and then falls slightly. The occurrence of breast cancer at women below the age of 25 is rare. It is characteristic for breast cancer that its incidence depends on the geographical region. The highest incidence occurs in countries where the economic status is high (United States, Western Europe) and the lowest in the regions of Asia and Central Africa, mainly due to late fertility. On the example of immigrants from Japan or China one can accept the thesis that the trend of the Western world based on consumerism, urbanization, industrialization causes that the incidence of these women is not much different from women living in the United States.³ It has also been proven that late menopause promotes the development of breast cancer. Women who have overdue after age 55 are twice as likely to get sick, and each subsequent year of menstruation is a 3% increase in the risk of the disease.

Genetic conditioning causes a woman to be classified as a high risk of developing breast cancer. Particular attention is paid to women whose mothers or sisters became ill before menopause. It is estimated that hereditary illnesses constitute about 5-10% of cases⁴. The basis for the development of breast cancer is the gene mutation: BRCA1 or BRCA2. The first of

1Prażmowska B., Puto G., Płoch K.: Pielęgniarstwo XXI wieku. Czynniki ryzyka raka piersi u kobiet zgłaszających się na badanie mammograficzne, nr 1, 2009, p.26.

2 Cabot S.: „Jak zapobiegać rakowi piersi”, Wyd. Mada, Warszawa 2011, pp. 6-17.

3Wojciechowska U., Wesołowska E., Olszewski W., Nagadowska M.: Wybrane zagadnienia z zakresu patologii raka piersi. Ginekologia po Dyplomie, nr 5, 2015, pp.46– 63.

4Jardines L., Goyal S., Fisker P.: Rak piersi- czynniki ryzyka, badania przesiewowe, badania genetyczne i profilaktyka, [w:] Krzakowski M., Kawecki A. Nowotwory złośliwe, Wyd. Czelej, Lublin, 2012, wyd I, pp.98 – 110.

these is located on chromosome 17 and is inherited in a dominant and autosomal way. It also determines ovarian cancer or prostate cancer – which is rare. The carnation of this gene determines about 56-85% of cases of breast cancer. The BRCA2 gene located on chromosome 13 determines a smaller incidence, within 33-54%. Genetic studies have demonstrated that the carriage of BRCA1 and BRCA2 gene mutations also occurs at men. As a result, they are exposed to a 10% risk of developing prostate cancer before the age of 70, and in the case of the BRCA2 gene mutation the risk is higher. Several studies on dietary factors affecting the increase in the incidence of breast cancer indicate an excess of fat and carbohydrate intake. This is due to overweight, which also increases the risk of getting sick. At obese women there is an increase in estrogens that promote the development of breast cancer. There is a certain relationship between the risk of disease and the body mass index, the so-called BMI. It is different for women before menopause and after menopause. The relative risk for premenopausal women and BMI>35 is 0.7, and for women after menopause with BMI>35 is 2.0.⁵

The lifestyle, and more precisely the system of work at night, weighs on women, including the nurse's risk of breast cancer. Research conducted in this direction in 2007 by the Danish Institute for Health Control in the Work Environment and in later years by American researchers indicated a 40-50% increase in risk among American nurses in comparison with other women. All because of the failure to produce the right amount of melatonin due to the disturbance of the day - night rhythm and exposing the retina to the artificial light in the night. Melatonin, in addition to the ability to inhibit the growth of cancer cells, affects the immune system, reducing the exposure of free radicals to the human body. The risk factor of oral contraceptives in epidemiological studies indicates a slight impact on the development of breast cancer. It is estimated that this risk in comparison with women who do not use contraception is about 1.25 times more, with around 10 years of use. Hormone replacement therapy as a factor influencing breast cancer is associated with long-term use (about 5 years). Epidemiological research conducted in this direction attributes an increase in the risk of disease by 2.7% for each year of hormonal therapy.⁶

5Cabot S.: „Jak zapobiegać (...) wyd. cyt. p.26,

6Didkowska J.: Epidemiologia, czynniki ryzyka i profilaktyka, [w:] Jassem J., Krzakowski M. (red.): Rak piersi-praktyczny przewodnik dla lekarzy, Wyd. Via Medica, Gdańska 2014, wyd. II, pp. 1-7.

The "Population program for early detection of breast cancer" plays a huge role in the early diagnosis of changes in the breast gland and the prevention of premature death of women. A high rate of breast cancer among Polish women contributed to the creation on July 1st 2005 of the law on the "National Program for Combating Cancer", which includes the program for early detection of breast cancer. To this end, the Ministry of Health established the Central Coordination Center and coordinating centers in each of the voivodeships of the country, which deal with marketing, monitoring the quality of research and training. The second entity implementing the discussed program is the National Health Fund, which finances and contracts research.⁷ The "Population program for early detection of breast cancer" is targeted at women aged 50-69 due to the highest rate of pediatric cancer. As part of the program, women can have a mammogram for breast screening free of charge every 2 years, to which they are invited by letter. The activities are carried out in two stages. The first of them consists, as mentioned above, in the mammography screening, and the second is extended diagnostics explaining the nature of the change. An essential element of the program are activities in the field of health promotion. It is carried out at various levels by organizing festivals, spots and commercials, as well as implementing broadly understood cooperation with local authorities and health units. All these activities have one main goal - early detection of neoplastic changes and reduction of the number of women suffering from breast cancer.⁸

Aim of this paper

The aim of this paper was to evaluate knowledge and activities for oncological prevention of women invited for mammography screening as part of the "Population program for early detection of breast cancer".

Material and methods

The study covered 105 randomly selected women in rural and urban areas of the Podkarpackie Voivodeship aged 50-69 covered by the "Population program for the early detection of breast cancer. The research was conducted in the period from 09/01/2017 to 10/31/2017. The surveyed women received information about the complete anonymity of the

⁷Matkowski R., Jagas M., Kotowska J.: Osiem lat populacyjnego programu wczesnego wykrywania raka piersi. Inżynier i Fizyk Medyczny 2013, nr 6. pp. 293–296.

⁸Dyzmann-Sroka A., Marcinkowski J.T., Kubiak A., Trojanowski M.: Kto powinien zajmować się promocją skryningowego Populacyjnego Programu Wczesnego Wykrywania Raka Piersi?. Probl Hig Epidemiol 2009, pp. 621-626.

tests. They were explained how to mark the selected answer and the occurrence of single and multiple-choice questions.

The author's questionnaire consisting of 32 questions was used for the research. They were single and multiple choice. The questions contained in the questionnaire were designed to assess the knowledge and activities of women covered by the "Population program for early detection of breast cancer".

For the purpose of this work, the following tests were used for questions on nominal scales for verification of hypotheses: V Kramer (2x3 tables, 4x5 etc.), Phi (2x2 tables) - these are symmetric measures based on chi-square test informing about the strength of dependencies between variables in cross tables. For questions on ordinal scales, Tb - Kendall or Tc tests were used - the first for 2x2 tables, the second 2x3, 4x5 tables, etc. At the moment when the cross table consisted of a nominal and ordinal scale, the statistics were read at a lower level. All measures of compound strength are normalized so that they take values from the interval (0-1). And from 0-0.29 respectively - weak dependence, 0.30-0.49 - moderate dependence, 0.5-1 - strong dependence. In the case of symmetric measures based on the chi-square test, it is necessary to remember about certain conditions of using this test, they concern the size of the theoretical numbers, or actually the numbers of the theoretical numbers that are valid for a given table, which have a value between 1 and 5. The value of the chi-square test is accurate when none of the theoretical numbers is less than one and when no more than 20% of the theoretical number is less than 5. The statistical analysis was carried out using the SPSS program and all relationships are statistically significant when $p < 0.05$.

Results

The study concerned 105 randomly selected women in rural and urban areas of the Podkarpackie Voivodeship aged 50-69 covered by the "Population program for the early detection of breast cancer. The research was conducted in the period from 09/01/2017 to 10/31/2017. More than half of the women participating in the study (59%) lived in the village, and 41% in the city. The surveyed ladies were characterized in terms of marital status. The largest group were married women - 73.3%, followed by widows - 19.0%, women - 5.7%, and at least 1.9% - divorcees. The most women participating in the study had vocational education - 41.0%, then secondary - 39.0%, higher - 14.3%, and the least primary - 5.7%. There is a

weak correlation statistically significant, which informs that the higher the level of education the respondents have, the more knowledge they have (Table 1).

Table 1. The level of knowledge of women on the subject of the "Population Program of Early Breast Cancer Detection" and education.

			Education				Total
			primary	vocational	secondar y	higher	
Level of knowledge max. 15 pts.	low (6-7pts.)	N	6	19	17	4	46
		%	100,0%	44,2%	41,5%	26,7%	43,8%
	average (8- 11pts.)	N	0	16	20	5	41
		%	,0%	37,2%	48,8%	33,3%	39,0%
	high (12-15pts.)	N	0	8	4	6	18
		%	,0%	18,6%	9,8%	40,0%	17,1%
Total		N	6	43	41	15	105
		%	100,0%	100,0%	100,0%	100,0%	100,0%
p=0,04, Tau-c Kendall=0,18							

Source: own.

In terms of profession, the majority of respondents in the study of women are pensioners - 53.3%, 28.6% of respondents worked mentally, physically - 16.2%, and the least group are unemployed - 1.9%. According to the majority of women, genetic factors have a special influence on the development of breast cancer - 95.2%, followed by sex - 76.2% and age - 75.2%. Almost half of the respondents indicated an unhealthy lifestyle - 46.7%. Childlessness has an influence according to 38.1% of surveyed women, contraception – 35.2%, late first pregnancy - 29.5%, obesity - 27.6%, late menstruation - 15.2%, the least answer was given at the early first period - 12.4%.

Almost half of the women replied that the reason for not using the invitations for free breast mammography was the lack of time - 46.3%. Another reason was that they consider themselves as healthy people and that they cannot be concerned by a disease - 29.6%, fear of illness - 13%, and 11.1% of the surveyed women indicated lack of proper knowledge about breast cancer. The majority of women taking part in the study - 73.3% found that an effective cure for breast cancer is influenced by early detection of the disease, followed by the appropriate treatment - 16.2%, the age of the sick - 5.7%, the right lifestyle 3.8%, while the question could not be answered by 1% of the respondents. Women with a lower level of education more often do not know what the awareness of women on the morbidity is,

prevention and treatment of breast cancer, while women with a higher level of education are usually of the opinion that this knowledge is average (Table 2).

Table 2. Women's awareness of the morbidity, prevention and treatment of breast cancer.

			Education				Total
			primary	vocational	secondary	higher	
What do you think about women's awareness of morbidity, prophylaxis and treatment of breast cancer?	good	N	0	4	2	0	6
		%	,0%	9,3%	4,9%	,0%	5,7%
	average	N	0	20	19	12	51
		%	,0%	46,5%	46,3%	80,0%	48,6%
	bad	N	1	9	9	3	22
		%	16,7%	20,9%	22,0%	20,0%	21,0%
	I don't know	N	5	10	11	0	26
		%	83,3%	23,3%	26,8%	,0%	24,8%
Ogółem		N	6	43	41	15	105
		%	100,0%	100,0%	100,0%	100,0%	100,0%

p=0,02, V Kramer=0,26

Source: own.

According to the surveyed women, the availability of prophylactic examinations at the place of residence is assessed as good by 40% of respondents. A different sentence was presented by 16.2% of respondents, and 43.8% of women have no opinion. The respondents in 36.5% stated that this is a useful program that would bring a lot to fight against breast cancer, a little less - 33.7% found the opposite, that it is a program that is of little use and does not fulfill its role. The surveyed women who did not hear about the program were 12.5%, and 17.3% of women did not have the opinion on this subject. The research shows that women most often learned about breast cancer from the media - 69.5% and leaflets - 66.7%. Over half of the respondents - 57.1% pointed to medical personnel, and at family/friends - 26.7%. The least on this subject, women drew knowledge from books - 5.7%. 7.6% of them are not interested on the topic of breast cancer.

The majority of women - 41.9% - found that there are 5,000 – 10,000 occurrences of breast cancer per year in Poland. The next most frequently answered answer was 10,000 - 15,000 women - 31,4%, over 15,000 women - 15,2%, and the least answer was given to less than 5,000 women - 11,4%. Less than half of the women participating in the study - 48.6% said that women's awareness of the morbidity, prophylaxis and treatment of breast cancer is mediocre. The fact that it is bad indicated - 21% of respondents, and that good - 5.7%. 24.8% of women could not answer this question.

36.5% of respondents admitted that the "Population Program of Early Breast Cancer Detection" is useful and has a significant impact on the detection of breast cancer, a little less - 33.7% considered the reverse is a non-useful program that does not meet their role. Almost all the surveyed women were in favor of publicizing the problem in social media - 87.5%. Over half of them supported the organization of meetings with specialists in this field - 54.9%, and almost half of the respondents gave answers to include breast examinations for periodic research in work establishments - 47.1% and to increase the role of family doctors in preventing breast cancer.

Discussion

Breast cancer is currently a huge challenge for modern medicine due to the high percentage of cases and deaths. The key to changing this situation are secondary prevention activities. The study shows that 77.1% of women know the principles of performing breast self-examination, 53.1% of them answered that they are doing it, and 42% of women carry out the same on a given day of each month. Similar results were obtained in the studies of Paździor, Stachowska and Zielińska published in 2011, where 70% of women perform self-examination, and 36% do it on a regular basis.⁹

In many studies related to the subject of breast cancer, attention is paid to risk factors that promote the development of breast cancer. In this study, the factors on which the studied ladies in 95.2% were concerned were genetic factors, 76.2% - sex, 75.2% - age. According to 46.7% of respondents, an unhealthy lifestyle affects the development of breast cancer. Authors of many scientific papers point out that the diet has a significant impact on the development of breast cancer. In the paper of Barbara Zych et al, the surveyed women also paid the most attention to genetic factors - 85.3%, while the unhealthy lifestyle was broken down into individual elements: smoking - 49.3%, alcohol - 33.7%. In own research, 27.6% of women think that obesity affects the development of breast cancer, which can be found in the work of B. Zych, where 31% of the women were in favor of the same development factor.¹⁰

In this paper, and in the paper by Paździor et al., the main symptom of breast cancer among the studied women was the presence of a tumor in the breast - 73%, attention was also drawn to the enlargement of the lymph nodes - 67.3% as well as the appearance of a bloody

⁹Paździor A., Stachowska M., Zielińska A.: Wiedza kobiet na temat profilaktyki raka piersi. *Nowiny Lekarskie*, 2011, 80,6, pp. 419 – 422.

¹⁰Zych B., Marć M., Binkowska-Bury M.: Stan wiedzy kobiet po 35 roku życia w zakresie profilaktyki raka piersi. *Prz. Med. Uniw. Rzesz.*, 2006, s. 1, pp. 27-33.

leak from the nipple - 66%. In perimenopausal age, a leading preventive measure is a mammogram that takes place every two years. In own research, 66.7% of women surveyed indicated that mammography should be performed from the age of 50, and 66.5% of women answered that this is done every two years. Slightly worse results were obtained in the work of Renata Bogusz et al. where, according to the respondents, mammography takes place from about 40 years of age - 32%, with frequency once a year - 54% or every two years - 40%, half-year - 5%, five-year - 1%.¹¹

The research shows that the surveyed women in almost half (48.6%) assess their knowledge on the morbidity, prophylaxis and treatment of breast cancer on average. The main source of knowledge about breast cancer is media - 69.5%, leaflets - 66.7% and medical staff - 57.1%. Similar results were obtained in the paper of Paździor, where the media and leaflets were the main source of knowledge, but in contrast, only 1% of the surveyed women indicated that the family nurse helps them to broaden their knowledge of breast cancer¹². As part of the "Population Breast Cancer Detection Program", free breast mammography is organized, where 49.5% of the surveyed women took advantage of the invitation and tested themselves. For the remaining part of women (46.4%), the reason for not testing was the lack of time and reassurance that they are healthy and not affected - 29.6%. 13% of respondents were in fear of the disease and in the publication of Bogusz, the fear of the disease was, according to the respondents, the main motivator for performing prophylactic examinations (73%).¹³

The analysis of the obtained results indicated that the "Population Breast Cancer Detection Program" is useful for the fight against cancer according to 36.5% of women. A similar number of respondents had a different opinion on the subject, considering the program as not very useful, not fulfilling their role - 33.7%, and 12.5% of respondents had not heard about such an undertaking of the Ministry of Health.

Analyzing our own research results and comparing them with the work of other authors, we can conclude that there is still a lot to do in the area of raising women's awareness of breast cancer prevention. The key to improving this situation will certainly be a change in

11 Bogusz R., Charzyńska-Gula M., Majewska A., Gałęziowska E.: Wiedza kobiet w wieku okołomenopauzalnym na temat profilaktyki raka piersi. *Medycyna Ogólna i Nauki o Zdrowiu*, 2013, Tom 19, nr 4, pp. 524 – 525.

12 Paździor A., Stachowska M., Zielińska A.: Wiedza kobiet. (...) wyd. cyt. pp. 419 – 422.

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the attitude of women regarding the prevention of breast cancer through broadly understood health education conducted on various levels.¹⁴

Conclusions

1. Knowledge and activities for the oncological prevention of women invited for mammography screening under the "Population program for early detection of breast cancer" is low.
2. The analysis of the conducted research indicated that there is no relationship between the level of knowledge of women about breast cancer, place of residence, marital status, education and profession and participation in preventive examinations.
3. The research shows that the participation of women invited for free mammography screening as part of the "Population Breast Cancer Detection Program" amounts to slightly more than half of the respondents.

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