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Health behaviour in the field of breast cancer prevention among patients

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Abstract:

Introduction

Breast cancer is the most frequent malignant disease in women all over the world: it accounts for 25.1% of all cancer cases. The major problem connected with this cancer is late diagnosis which is reflected in high mortality rates. Therefore, education is recommended in all countries with a view to increasing health awareness of women.

Objective of the study

The objective of the study was a retrospective analysis of health behaviour concerning breast cancer prevention in a group of patients with the malignant breast disease. The analysis was

carried out with respect to education, place of residence and financial status of the surveyed women.

Material and method

The research was carried out by means of a diagnostic survey. The instrument used was an original questionnaire designed for the purposes of the study. A total of 200 female breast cancer patients were surveyed between September 2015 and April 2016. The data collected in the study were subjected to statistical analysis.

Result and conclusions

The research demonstrated that, irrespective of an education level, place of residence and financial status, lack of interest in preventive actions aimed at early diagnosis of breast cancer could be observed. Therefore, health awareness of women in this respect should be increased.

Key words: breast cancer, health behaviour, prevention

Introduction

Breast cancer is the most frequent malignant disease in women all over the world: it accounts for 25.1% of all cancer cases. In 2012 there were 1 671 197 new cases of breast cancer and 521 907 deaths due to this disease registered worldwide. The incidence of breast cancer is greater in highly developed states than in developing countries, whereas mortality is the highest in less developed countries [1].

Poland is one of these states where the incidence of breast cancer is large. Malignant breast disease is the dominant health problem in the female population: it accounts for 21.7% of malignancies. The number of newly registered cases is constantly growing: from 11853 in 2000 to 17379 new cases in 2014. The analysis of the structure of women's deaths due to breast cancer looks equally worrying. In 2014 breast cancer ranked second among deaths due to malignant diseases, accounting for 13.9% of deaths due to cancer. [2,3].

The major problem connected with this cancer is late diagnosis which is reflected in high mortality rates [4,5,6]. Therefore, education is recommended in all countries with a view to increasing health awareness of women [1].

Early detection of malignant tumours is achieved e.g. through health behaviour, including breast self-examination, preventive check-ups, routine medical examinations by doctors, as well as implementation of special preventive screening programmes [7].

The role of breast self-examination is ambiguous. Many scientists claim that routine self-examination can lead to a large number of falsely positive results and consequently to performance of unnecessary biopsies [8]. According to the guidelines of the American Cancer Society, there are no arguments in favour of recommending breast self-examination because this examination does not bring benefits [9]. On the other hand, the Polish Gynaecological Society recommends that breast self-examination should be performed on the 2^{nd} or 3^{rd} day after the end of menstruation in women aged ≥20 [10].

Similarly to breast self-examination, clinical examination carried out by a doctor is not recommended by the American Cancer Society [9]. However, the Polish Gynaecological Society recommends breast examination during periodical check-ups: every 36 months in women aged <40 and every 12 months in women aged ≥ 40 [10,11].

Breast ultrasound scan is a supplementary part of diagnostics because it does not offer a chance to identify microcalcifications which are characteristic of early breast cancer. This is why breast ultrasound scan is not commonly used in preventive screening [10,12,13].

Mammography is the only medical examination which reduces mortality due to breast cancer on the population scale. According to the guidelines of the Polish Gynaeological Society on prevention and early diagnosis of lesions in the mammary gland, mammography is recommended every 2 years in women aged 45-50 and every year in women aged over 50 [9]. Owing to its proven effectiveness in breast cancer detection, mammography is used in preventive screening programmes. In accordance with the guidelines of the European Commission and the European Parliament, mammography screening tests are currently conducted or introduced in all countries of the European Union [14]. The American Cancer Society also recommends that the first mammography should be performed in women aged 40 [9].

Objective of the study

The objective of the study was a retrospective analysis of health behaviour concerning breast cancer prevention in a group of patients with the malignant breast disease. The analysis was carried out with respect to education, place of residence and financial status of the surveyed women.

Material and method

The study was conducted among women diagnosed with breast cancer. They were the patients of the detachment of Surgical Oncology, Provincial Specialist Hospital. Cardinal Stefan Wyszynski University in Lublin and patients from the Association of the Amazons in the Lublin province. Before starting the study was approved by the director of the Provincial Specialist Hospital. Cardinal Stefan Wyszynski University in Lublin, senior registrar sub-division of Surgical Oncology and President of the Association of the Amazons to conduct research in the subordinate units and consent of the Bioethics Committee of the Medical University of Lublin No. KE-0254/45/2015.

The method of interview (diagnostic survey). The research tool was original, designed for research questionnaire. The research was conducted from September 2015 to April 2016. In total, data were collected from 200 patients with breast cancer. A statistical analysis of the data was carried out with respect to education, place of residence and financial status. These variables were selected taking into account age of the respondents and a relatively long period of time which has passed since the diagnosis of the disease. In view of the average age in the analysed group it can be assumed that the respondents have completed their education, display relatively lowest mobility and receive fairly regular income. The data were subjected to statistical analysis with the use of the STATISTICA data analysis software system (StatSoft, Inc., 2011), version 10.

Results

More than a half of the surveyed women obtained information on breast cancer from the media, that is from TV, radio and press. A considerable part of the surveyed women gained information from doctors and looked for it in internet. Family and friends were valuable sources of information for over 20% of the women, and 23% pointed to other sources, mostly “Amazons’ Clubs” (Table I).

Table I. Sources of information on breast cancer (multiple choice question)

Source of information on breast cancer	Number	Percentage of the respondents
TV, radio, press	111	55.5%
internet	64	32.0%
doctor	95	47.5%
nurse	20	10.0%
family and friends	43	21.5%
co-workers	8	4.0%
other source	46	23.0%
not interested	5	2.5%

In the analysis of the surveyed group concerning the manner in which a patient learned about breast tumour, it was found out that almost a half of the surveyed women felt a lump in their breasts during self-examination. Another group of the women learned about the disease thanks to mammography. The smallest group learned about the illness through breast ultrasound scan or during a physical examination carried out by a doctor (Fig. 1).

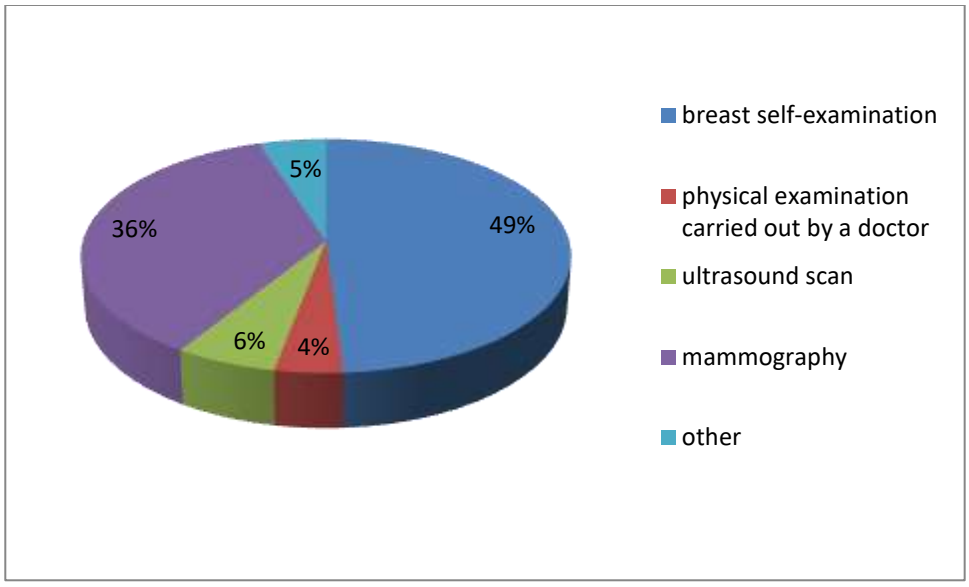

Figure 1. The manner in which a patient learned about the disease or noticed a malignant lesion in breasts

The analysis with respect to education showed that, irrespective of an education level, only few people had participated in preventive actions aimed at early detection of breast cancer before being diagnosed (e.g. “Pink Ribbon”, “Healthy Woman – Breast Cancer Prevention”, “AVON Breast Cancer Crusade”, “Women to Women”). Moreover, a percentage of women performing breast self-examination was low irrespective of an education level. In the group of

women with higher education the largest percentage of the respondents carried out breast self-examination, but these differences were not statistically significant (p=0.48). The analysis of participation in check-ups aimed at breast examination revealed that in the group of women with primary/vocational education the lowest percentage (15.15%) had regular check-ups. This percentage was larger in women with secondary education (18.55%) and with higher education (20.93%), but the analysis did not show statistically significant differences (p=0.83). It was also demonstrated that breast ultrasound was performed the least frequently by women with higher education (13.95%) and the most frequently by women with secondary education (22.58%). However, these were not statistically significant differences (p=0.55). The study also investigated frequency of mammography depending on an education level. No statistically significant differences were shown in the surveyed group (p=0.78) (Table II).

Table II. Education and health behaviour concerning breast cancer prevention among patients with malignant breast disease

Preventive action			Education			Chi, p
			Primary/ Vocational	Secondary	Higher	
Participation in preventive actions aimed at early diagnosis of breast cancer	Regularly	N	2	18	5	2.26 p=0.68
		%	6.06%	14.52%	11.63%	
	Seldom	N	6	21	9	
		%	18.18%	16.94%	20.93%	
	Not at all	N	25	85	29	
		%	75.76%	68.55%	67.44%	
Breast self-examination	Regularly	N	4	12	6	3.46 p=0.48
		%	12.12%	9.68%	13.95%	
	Seldom	N	12	59	23	
		%	36.36%	47.58%	53.49%	
	Not at all	N	17	53	14	
		%	51.52%	42.74%	32.56%	
Participation in medical check-ups aimed at breast examination	Regularly	N	5	23	9	1.47 p=0.83
		%	15.15%	18.55%	20.93%	
	Seldom	N	7	35	12	
		%	21.21%	28.23%	27.91%	
	Not at all	N	21	66	22	
		%	63.64%	53.23%	51.16%	
Breast ultrasound before falling ill	Regularly	N	5	28	6	3.04 p=0.55
		%	15.15%	22.58%	13.95%	
	Seldom	N	6	27	12	
		%	18.18%	21.77%	27.91%	
	Not at all	N	22	69	25	
		%	66.67%	55.65%	58.14%	
Preventive mammography before falling ill	Regularly	N	10	40	14	1.71 p=0.78
		%	30.30%	32.26%	32.56%	
	Seldom	N	8	24	12	
		%	24.24%	19.35%	27.91%	
	Not at all	N	15	60	17	
		%	45.45%	48.39%	39.53%	

The analysis with respect to a financial status indicated that women who reported an average financial status participated in preventive actions aimed at early diagnosis of breast cancer more frequently than those reporting a good financial status, but these were not statistically significant differences (p=0.39). Furthermore, the analysis did not demonstrate statistically significant differences between a financial status declared by women and breast self-examination (p=0.43), breast examination by a doctor (p=0.22), breast ultrasound (p=0.75) and mammography (p=0.28). However, it was observed that women who reported an average financial status had preventive check-ups more often before falling ill (Table III).

Table III. Financial status and health behaviour concerning breast cancer prevention among patients with malignant breast disease

Preventive action			Financial status				Chi, p
			Very good	Good	Average	Bad	
Participation in preventive actions aimed at early diagnosis of breast cancer	Regularly	N	0	5	19	1	6,24 p=0,39
		%	0,00%	9,26%	15,20%	5,88%	
	Seldom	N	0	12	22	2	
		%	0,00%	22,22%	17,6%	11,76%	
	Not at all	N	4	37	84	14	
		%	100,0%	68,52%	67,2%	82,35%	
Breast self-examination	Regularly	N	0	5	15	2	5,85 p=0,43
		%	0,00%	9,26%	12,00%	11,76%	
	Seldom	N	1	31	56	6	
		%	25,00%	57,41%	44,80%	35,29%	
	Not at all	N	3	18	54	9	
		%	75,00%	33,33%	43,20%	52,94%	
Participation in medical check-ups aimed at breast examination	Regularly	N	1	6	28	2	8,15 p=0,22
		%	25,00%	11,11%	22,4%	11,76%	
	Seldom	N	0	16	35	3	
		%	0,00%	29,63%	28,00%	17,65%	
	Not at all	N	3	32	62	12	
		%	75,00%	59,26%	49,60%	70,59%	
Breast ultrasound before falling ill	Regularly	N	1	9	27	2	3,45 p=0,75
		%	25,00%	16,67%	21,60%	11,76%	
	Seldom	N	0	13	28	4	
		%	0,00%	24,07%	22,40%	23,53%	
	Not at all	N	3	32	70	11	
		%	75,00%	59,26%	56,00%	64,71%	
Preventive mammography before falling ill	Regularly	N	1	15	45	3	7,39 p=0,28
		%	25,00%	27,78%	36,00%	17,65%	
	Seldom	N	0	15	23	6	
		%	0,00%	27,78%	18,40%	35,29%	
	Not at all	N	3	24	57	8	
		%	75,00%	44,44%	45,60%	47,06%	

In the analysis of the correlations between a place of residence and preventive screening it was demonstrated that women living in the rural areas participated in preventive screening

actions aimed at early diagnosis of breast cancer less frequently (7.69%) than women living in small towns (12.5%) and big cities (13.73%). Nevertheless, these differences were not statistically significant (p=0.72). With respect to breast self-examination, statistically significant differences (p=0.01) were demonstrated depending on a place of residence. In the surveyed group, the lowest percentage of women who stated that they did not perform breast self-examination lived in a big city (38.24%), while the highest percentage of women not performing breast self-examination (61.54%) lived in the rural areas. Women living in small towns most often performed breast self-examination regularly. Moreover, the analyses carried out showed that among women living in a city the highest percentage declared participation in check-ups aimed at breast examination, preventive ultrasound scan and preventive mammography. However, these were not statistically significant differences (Table IV).

Table IV. Place of residence and health behaviour concerning breast cancer prevention among patients with malignant breast disease

Preventive action			Place of residence			Chi, p
			Rural areas	Small town	Big city	
Participation in preventive actions aimed at early diagnosis of breast cancer	Regularly	N	2	9	14	2,08 p=0,72
		%	7,69%	12,50%	13,73%	
	Seldom	N	3	13	20	
		%	11,54%	18,06%	19,61%	
	Not at all	N	21	50	68	
		%	80,77%	69,44%	66,67%	
Breast self-examination	Regularly	N	3	13	6	12,84 p=0,01
		%	11,54%	18,06%	5,88%	
	Seldom	N	7	30	57	
		%	26,92%	41,67%	55,88%	
	Not at all	N	16	29	39	
		%	61,54%	40,28%	38,24%	
Participation in medical check-ups aimed at breast examination	Regularly	N	3	16	18	1,89 p=0,75
		%	11,54%	22,22%	17,65%	
	Seldom	N	7	20	27	
		%	26,92%	27,78%	26,47%	
	Not at all	N	16	36	57	
		%	61,54%	50,0%	55,88%	
Breast ultrasound before falling ill	Regularly	N	5	14	20	2,54 p=0,64
		%	19,23%	19,44%	19,61%	
	Seldom	N	3	17	25	
		%	11,54%	23,61%	24,51%	
	Not at all	N	18	41	57	
		%	69,23%	56,94%	55,88%	
Preventive mammography before falling ill	Regularly	N	7	24	33	1,40 p=0,84
		%	26,92%	33,33%	32,35%	
	Seldom	N	5	14	25	
		%	19,23%	19,44%	24,51%	
	Not at all	N	14	34	44	
		%	53,85%	47,22%	43,14%	

Discussion

One of the goals of the research presented in this paper was to find out the sources of patients' information on breast cancer. This issue is significant because it indicates how to reach patients the most easily: those already fighting the disease and those potentially at risk of breast malignancy who should be encouraged to prevent the illness and to change their behaviour to more beneficial to health. In the surveyed group, the media was the main source of information for over a half of the women, and a considerable number also mentioned a doctor, internet and Amazons' Clubs. The research conducted by Paździor and colleagues [15] among the patients of the Gynaecology and Obstetrics Ward in the Independent Public Health Care Institution in Wolsztyn revealed that leaflets were the main source of knowledge on breast cancer prevention and breast self-examination for the surveyed women. On the other hand, the research carried out among women without malignant disease, resident in the rural areas of the Małopolskie Province, demonstrated that the media was the main source of information for them. Only 27.5% of the respondents replied that they obtained information from doctors [16]. Similar research conducted by Głowacka and colleagues [17] among various professional groups demonstrated that health care employees and women after mastectomy gained information on breast cancer mostly from the radio, daily papers and television. Free newspapers, followed by radio and TV, were the best sources of information for over 80% inhabitants of villages. Women living in the rural areas mentioned internet as a source of knowledge the least frequently, contrary to students for whom this source of information was the most significant. Interesting results were obtained in Canada where a study was carried out in a group of women with breast cancer. The study revealed that doctors, nurses and friends were much more preferred sources of information to magazines or leaflets. What is significant, medical magazines were more important for women with higher education [18]. Nowadays, the role of internet should be emphasized, because it proves to be not only a source of dry information on breast cancer, but also creates new methods of developing social relationships among people suffering from breast cancer and is increasingly used for this purpose. The research carried out among women in Scandinavia showed that internet was regarded as a means to find the ways of living with breast cancer, through establishing new relationships and sharing experiences with people having similar problems [19].

Analysing the manners in which women learned about their malignant breast disease, it should be noted that almost a half of the surveyed women felt a lump themselves during breast self-examination, whereas mammography was mentioned by the women in the second place. The

results of the authors' own research are consistent with the results obtained by Bąk-Sosnowska and colleagues [20] which indicate that almost a half of the respondents detected lesions in breasts during self-examination. It is worth noticing that in the above-mentioned research 41% of lesions were detected during examination by a doctor. Unfortunately, in the authors' own research only 4% of the respondents stated that a lesion was detected by a doctor during physical examination of breasts. Both the results of the authors' own research and the results obtained by other researchers are not consistent with the guidelines of the American Cancer Society [9] according to which there are no arguments in favour of recommending breast self-examination, because this examination is not beneficial. However, both the authors' own research and the research of other authors indicate that breast self-examination brings indisputable benefits. A study carried out in a group of physicians showed that family doctors recommended breast self-examination to their patients as a way of breast cancer prevention and diagnosis. Similarly, over a half of gynaecologists recommended breast self-examination to their patients as part of preventive screening [21]. In the surveyed group, only 11% of the women performed breast self-examination regularly before breast cancer diagnosis. Kalinowski and Bojakowska [22] conducted research among women residing in the Lubelskie Province. In the surveyed group, 34.8% of the women carried out breast self-examination regularly once a month, whereas 28.8% of the respondents did not perform breast self-examination at all. In the group analysed by the researchers, women with higher education and living in a small town performed breast self-examination less frequently than women with lower education and those living in the rural areas and in a big city. In the research of Paździor and colleagues [15] the majority of women performed breast self-examination and 36% of them carried out self-examination regularly once a month. Much higher results were obtained in the research conducted by Stanisławska [23] in which 86.2% of women declared that they performed breast self-examination, including 85.8% inhabitants of cities and 86.6% inhabitants of villages [23].

Physical examination of breasts by a doctor is not very popular, which is confirmed by the research conducted by Zych [24] in Rzeszów and its surrounding areas. Almost a half of the surveyed women did not have their breasts checked during a visit at a gynaecologist's, and one-third had their breasts checked only sporadically. Another study, carried out in a group of working women and students, examined how often the respondents attended medical check-ups aimed at breast examination. This study revealed that 49.3% of the students did not participate in such check-ups. In the group of working women, a larger number of the respondents had medical check-ups: 9.7% of the respondents every six months, and 31.2%

every year. In this group, 22.1% of the women did not participate in check-ups at all [25]. In the authors' own research it was shown that only 18.5% of the women regularly had medical check-ups aimed at breast examination, and over a half of the women did not have such check-ups.

In the authors' own research, only 19.5% of the women declared that they regularly had breast ultrasound, while over a half of the women did not have breast ultrasound. Much higher results were obtained by Bojakowska and Kalinowski [26] who examined a group of working women from the Lubelskie Province in 2014. Their research showed that 46.7% of the women had breast ultrasound. The analysis with respect to a place of residence demonstrated that inhabitants of a big city more frequently had breast ultrasound (56.6%) than women living in villages (44%) and small towns (33.3%). The analysis of the influence of education demonstrated that women with higher education (40%) less frequently participated in ultrasound scans than other women [26]. Higher results were achieved by Stanisławska in her research [23] in which 66% of the surveyed women reported that they had breast ultrasound, women living in the rural areas slightly more frequently than women living in cities [23].

A recommended preventive screening examination aimed at diagnostics and early detection of breast cancer is mammography. Despite a growing interest in the "Population Programme for Early Detection of Breast Cancer", the Polish population is still not covered by the Programme widely enough to effectively reduce mortality due to this cancer. It is important to raise women's awareness concerning their participation in the organized preventive screening programmes, because only such actions provide a chance to start treatment early enough to be fully cured [27]. In the research conducted by Marcinkowska and colleagues [28], four main reasons for low participation in preventive mammography were distinguished: social, economic, psychological and organizational. In order to increase participation, women should be offered a chance to have mammography free of charge, which should be preceded by an information action concerning the necessity of regular check-ups. Moreover, receiving a personal invitation to take part in a medical examination contributes to increased attendance.

In the authors' own research, breast cancer had been diagnosed on average more than 10 years before. At that time, the Population Programme for Early Detection of Breast Cancer had just been introduced. After the first year of its operation (2007), 28.35% of the female population in Poland was covered by the Programme [27]. According to the authors' own research, a higher percentage of women (32%) had mammography during that period. In the following years of the Programme's operation it proved to be increasingly popular. This was

confirmed by Stanisławska's research [23] in which it was shown that over a half of the surveyed women had mammography, more frequently the women living in cities. Currently (2015), 44.07% of the female population in Poland is covered by the preventive screening programme aimed at early diagnosis of breast cancer [29].

Conclusions

1. The research demonstrated that, irrespective of an education level, place of residence and financial status, lack of interest in preventive actions aimed at early diagnosis of breast cancer could be observed. Therefore, health awareness of women in this respect should be increased.
2. In the surveyed group, the majority of the women did not perform regular breast self-examination, did not have their breast checked by a doctor and did not have preventive breast ultrasound before falling ill. Slightly more women had mammography, but this percentage was unsatisfactory.
3. Among the women with breast malignancy the main source of information about the disease was the mass media. Thus, attention should be paid to the accuracy of the information disseminated in this way.
4. Almost a half of the surveyed women felt a lesion in their breast themselves during breast self-examination, so health awareness of women in this respect should be further increased.
5. Irrespective of an education level, place of residence and financial status, low interest in preventive actions aimed at early diagnosis of breast cancer could be observed.

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