© Wydawnictwo UR 2017
ISSN 2544-1361 (online); ISSN 2544-2406
doi: 10.15584/ejcem.2017.4.2

http://www.ejcem.ur.edu.pl/en/
European Journal of Clinical and Experimental Medicine
Eur J Clin Exp Med 2017; 15 (4): 310–314

ORIGINAL PAPER

Aleksandra Pusz-Sapa [1(BDEFGH)], Greta Gaweł [1(ABCFGH)], Joanna Sobczyk [1(DEGH)], Aneta Wojtasik [1(CDFGH)], Małgorzata Król [2(C,D,E,F)], Emilia Misiewicz [2(CDE)], Barbara Lidwin [2(CDE)]

Health behaviors of patients after breast cancer surgery in the Podkarpackie voivodeship

[1] Institute of Nursing and Health Sciences, the Faculty of Medicine, University of Rzeszów, Rzeszów, Poland
[2] Student Scientific Organization "Young Electrocardiology", Institute of Nursing and Health Sciences, the Faculty of Medicine, University of Rzeszów, Rzeszów, Poland

ABSTRACT

Aim. An evaluation of lifestyle changes (physical activity, diet) in patients after breast cancer surgery.

Materials and method. 200 women after breast cancer surgery were surveyed. The respondents were asked whether the surgery caused a change in their diet and physical activity. An analysis was performed concerning the education, place of residence and age of the respondents.

Results. Prior to being diagnosed with breast cancer, about one third of the respondents were concerned about their diet and physical activity. After the surgery more than a half of the respondents were concerned about a healthy lifestyle. Women below 50 years old with higher education, who live in a city, were concerned about their diet and physical activity both before and after surgery.

Conclusions. As a result of the breast cancer surgery, lifestyle changes were most often found in women aged 50-69 years old with higher education who lived in a city. Statistical relevance of the results was noted.

Keywords. breast cancer, health behaviors, diet, physical activity.

Introduction

Breast cancer is the most common aggressive tumor in women in Poland as well as in the world.[1,2] According to the National Cancer Register, within the last 35 years breast cancer morbidity has tripled.[3] The basic means of treatment is a surgical procedure, if needed supplemented with a chemotherapy or radiotherapy.[4,5] The process of treating breast cancer is a traumatic experience for any woman which is why it requires inclusion of physical and psychological rehabilitation.[6] As a part of this post-surgery care a patient is recommended to adopt a number of healthly behaviors to facilitate recuperation but also to eliminate, or at least limit, risk factors which may cause a relapse. Among the most recommended ac-

Corresponding author: Aleksandra Pusz-Sapa, e-mail: a.pusz.sapa@gmail.com

Participation of co-authors: A – Author of the concept and objectives of paper; B – collection of data; C – implementation of research; D – elaborate, analysis and interpretation of data; E – statistical analysis; F – preparation of a manuscript; G – working out the literature; H – obtaining funds

Received: 14.08.2017 | Accepted: 25.10.2017
Publication date: December 2017

Pusz-Sapa A, Gaweł G, Sobczyk J et al. *Health behaviors of patients after breast cancer surgery in the Podkarpackie voivodeship*. Eur J Clin Exp Med. 2017;15(4):310–314. doi: 10.15584/ejcem.2017.4.2

tions are physical activity and diet.[7] The purpose of this work is to analyze to what extent breast cancer treatment caused the respondents to change their lifestyle.

Materials and methods

Using a questionnaire, a group of 200 women, aged 32-83 years old (average age 63) were surveyed. Each of the respondents had undergone a surgery to treat cancer lesions in the breasts. A mastectomy was performed in 73% of patients, and the saver type treatment in 27% of the surveyed women. The respondents were asked whether the surgery caused a change in their diet and physical activity. A healthy lifestyle was defined in the survey as eating lots of vegetables and fruit, limited consumption of animal fats and sugars and avoiding foods containing preservatives, avoiding eating salt and very salty foods and consumption of wholegrain bread. While physical activity was defined as walking outside, cycling, doing gymnastics, swimming or other recreational sports activity. The analysis took into consideration the age, education and the place of residence of the respondents. Individual groups had equal number of respondents. The assessment of the results used a method of statistical analysis using elements of descriptive statistics. Statistical relevance was defined as value $p<0.05$. Statistical calculations were carried out using the Statistica 12.5 software pack.

Results

Lifestyle of the respondents was analyzed prior to the diagnosis and after the surgery. Test results are presented in Table 1.

An analysis of physical activity among the respondents was carried out which consisted of a comparison of how much exercise they would do before and after surgery. The analysis accounted for education, place of residence and the age of the respondents. Also the statistical relevance of those changes was evaluated. Test results are presented in Table 2.

Having analyzed the groups of women with a particular education background, it was stated that prior to being diagnosed with breast cancer, more attention was paid to physical activity by women with higher education (54.90%) and secondary (50%). It can be observed that most women with primary education did not care about their physical activity. In case of the respondents with vocational education it was 74.51% and with primary education 81.82%.

There is a noticeable correlation between physical activity and the level of education. That is, the higher the education of the respondents, the higher their physical activity, both before and after surgery. It was found that the higher the education the greater the difference in favor of increasing physical activity after the surgery.

Concerning the place of residence, it was noted that both before diagnosis and after the surgery, the respondents living in the city were concerned with performing physical activity more (45.54% vs. 67.33%) than those living in the countryside (30.30% vs. 35.35%). Among the respondents living in the city, the percentage of women who began to exercise more after the surgery increased by 21.79%. This increase is not statistically relevant. Among the women living in the countryside only

Table 1. A comparison of health behaviours of the respondents (in %)

	YES	NO
Did you exercise prior to the diagnosis?	38.00	62.00
Did you exercise after the surgery?	53.50	46.50
Did you care about your diet prior to the diagnosis?	33.50	66.50
Did you care about your diet after to the diagnosis?	55.00	45.00

Table 2. A comparison of physical activity before and after the surgery, considering the education, place of residence and age of the respondents (results in %) + = p<0.05 -=p>0.05

		Did you exercise prior to the diagnosis?		Did you exercise after the surgery?		
		YES	NO	YES	NO	p
Education						
	Higher	54.90	45.10	80.39	19.61	+
	Secondary	50.00	50.00	62.96	37.04	+
	Vocational	25.49	74.51	31.37	68.63	-
	Primary	18.18	81.82	27.27	72.73	+
Place of residence						
	Countryside	30.30	69.70	35.35	64.65	-
	City	45.54	54.46	67.33	32.67	+
Age						
	<50	57.14	42.86	61.90	38.10	-
	50-69	37.76	62.24	53.85	46.15	+
	>69	27.78	72.22	36.11	63.89	-

a small increase of 5.05% was noted and this was not statistically relevant either.

Before the surgery, the women who most often cared for their physical activity were those aged below 50 years old (57.14%). A decrease in an interest in keeping fit is noted along with an increase of the respondents' age. Among the women aged 50-69 years old only 37.76% of the respondents showed interest in physical fitness, and this percentage was even lower (27.78%) for women who were over 69 years old. Similar percentages can be observed also after the surgery. Comparing the situation from before the diagnosis to that after the surgery, it can be observed that the highest increase of physical activity (16.09%) was noted in the group of women aged 50-69 years old. The second highest increase percentage (8.33%) occurred in the group of women aged over 69. The least frequent (4.76%) group to change their lifestyle were women aged below 50 years old. However, only the increase in the age group 50-69 years old shows statistical relevance.

The respondents' eating habits and diet were analyzed and compared before and after surgery. The analysis took into consideration age, education, and the place of residence of the respondents. Test results are presented in Table 3.

As a result of the analysis of the correlation between the eating habits and the age of the respondents, the following results were concluded: prior to breast cancer diagnosis over half (52.38%) of the surveyed women aged under 50 cared about maintaining a healthy diet. In the age group 50-69 years old, it was only 31.47% of the respondents and in the group of women aged over 69 years old it was only 30.56%. After the surgery, the women aged under 50 still cared about their diet (66.66%). A little lower (55.94%) percentage of women aged 50-69 years old paid attention to their eating habits, and it was much rarer in case of the group aged over 69 years old (30.56%). The women who changed their lifestyle as a result of breast cancer were those from the age group 50-69 years old (24.47%). Respondents from the age group over 69 years old and below 50 (14.28%) changed less frequently. The statistical relevance was noted in case of the age groups of 50-69 and over 69 years old.

Discussion

Physical activity and a healthy, balanced diet are among the factors contributing to the recuperation of patients after a surgical procedure. They are also among the factors which help in preventing the recurrence of a disease.[8] Before the treatment every patient receives information about what diet to follow and what exercises to perform. Those elements are introduced to the patient's lifestyle in the hospital even before the surgery[9]. However, it may also be stated that despite therapeutic actions there are still many patients who do not follow the recommendations. [10,11]

The effects of the surgery on the physical activity of the patients were analyzed in four publications. In a survey carried out with a group of 77 women from Lower Silesia it was concluded that 81% of the respondents cared about their physical activity after breast cancer surgery.[12] In this work a lower percentage (53%) was noted. A study carried out by Bożena Karczmarek-Borowska in the Mielec Amazon Club included 60 women aged from 30 to 68 years old and it showed that physical activity was cared about by women aged below 50 years old. However, such a correlation with respect to place of residence and education was not confirmed.[13] The former observation is identical to the one presented in this work. In contrast, the results of our own work contradict the quoted results as they noted a high positive statistical relevance (i.e. an increase of physical activity) for the respondents living in the city and for the age groups of 50-69 and over 69 years old.

Table 3. A comparison of eating habits before and after the surgery, considering the education, place of residence and age of the respondents (results in %) + = p<0.05 -=p>0.05

		Did you care about your diet prior to the diagnosis?		Did you care about your diet after to the diagnosis?		
		YES	NO	YES	NO	p
Education						
	Higher	52.94	47.06	86.27	13.73	+
	Secondary	38.89	61.11	57.41	42.59	+
	Vocational	23.53	76,47	41.18	58.82	+
	Primary	15.91	84.09	31.82	68.18	+
Place of residence						
	Countryside	29.29	70.71	45.45	54.55	+
	City	37.62	62.38	64.36	35.64	+
Age						
	<50	52.38	47.62	66.66	33.33	-
	50-69	31.47	68.53	55.94	44.06	+
	>69	30.56	69.44	30.56	55.56	+

In a survey carried out by Ewa Sierko in Podlasie, which included 89 female respondents, it was concluded that physical activity after the surgery was cared about most often by women over 60 years old with vocational education who lived in the city. 41% of the respondents showed a decrease of the physical activity after the surgery.[14] Here our own work confirms only the fact that that there was an increase of physical activity in case of the respondents living in the city.

A conclusion pointing to a lack of change in the physical activity after breast cancer surgery in presented in a publication by Tomasz Ridan of a survey of 80 women from Małopolska. More conclusive results were obtained by Katarzyna Lis in her survey of 40 women from Kielce Amazon Club. She concluded that 90% of the surveyed women were physically active prior to the surgery, and this percentage dropped to 75% after the surgery.[17] The results of both of the cited works are in total opposition to the results of this work. It is also worth comparing the numbers of the respondents in the groups surveyed in the quoted examples. In this work the number of the respondents was 200 and in the other surveys from 40 to 89. This surely had impact on the reliability of the quoted works. It should also be noted that the problem of physical activity may be defined differently. It is necessary to define this notion precisely and to state that it covers recreational physical activity, not connected with family of professional activity, which may happen in case of women who live in the countryside, and in case of women with lower educational background. Apart from that, women whose professional life is dominated with physical activity will be likely to engage in physical recreational activities. These factors surely have impact on the obtained results.

In this case, there are interesting results of a similar survey carried out in the US by Melinda L. Irwin et al. Their group of respondents consisted of 812 women from the states of New Mexico and Washington. There was a 11% increase of the number of women who performed recreational sports activities after the breast cancer surgery. Considering the age of the respondents, a 10.2% increase was noted in the age groups 40-49, a 9.5% increase in the age group 50-59 and a 11.5% increase in the age group above 60 years old. [17] The size of this group was substantial and the notion of physical activity was very clearly defined here as recreational sports activity. An increase was noted in the physical activity in all the age groups on a similar level as in this work. This shows how important it is to follow the adopted testing methodology.

Analogous to changes in physical activity after breast cancer surgery, a survey of eating habits of the respondents was carried out. In a publication by Agnieszka Surwiłło et al., presenting a survey of 100 women, it was stated that 71% of the respondents decided to change their eating habits after surgery. At the same time a slight correlation was observed between the change introduction and the age of the respondents and their education.[18] In this work an increase of only 21.5% was noted for the change of eating habits. Also, statistically relevant increase in the number of respondents caring about their diets was noted for the age groups of 50 and over, and for all education groups. On the contrary, Joanna Kruk shows in her work based on a survey of 470 respondents from Zachodniopomorskie voivodeship that 67% of the respondents cared about their diet after the surgery.[19] A lower, but also substantial, percentage (55%) was noted in this work.

Conclusions

1. The largest (statistically relevant) increase in physical activity after breast cancer surgery was observed in case of women aged 50-69 years old, with higher education, living in the city.
2. The largest (statistically relevant) increase in healthy eating habits after breast cancer surgery was observed in case of women aged 50-69 years old, with higher education, living in the city.

References

1. Didkowska J, Wojciechowska U. Nowotwory piersi w Polsce i w Europie. *Nowotwory J Oncol*. 2013;63:111-118.
2. Szkiela M, Worach-Kardas H, Marcinkowski J. Nowotwór złośliwy piersi – epidemiologia, czynniki ryzyka, znaczenie profilaktyki pierwotnej i wtórnej. *Probl Hig Epidemiol*. 2014;95(2):292-302.
3. Krajowy Rejestr Nowotworów, wydanie 2016.
4. Litwiniuk M, Łojko A, Markowska J. Brain metastases in patients with breast cancer. *Współcz Onkol*. 2004;8(8):390-394.
5. Skowronek J. Brachyterapia PDR (pulsacyjna) w leczeniu raka piersi. *Współcz Onkol*. 2007;11(2):72-81.
6. Mikołajewska E. *Fizjoterapia kobiet po mastektomii*. Warszawa, PZWL; 2010.
7. Wybraniec-Lewicka B, Szpringer M, Czerwiak G, Michalska M, Ciura E. Styl życia kobiet po mastektomii. *Stud Med*. 2008;10:27–30.
8. Łacko A. Ćwiczenia fizyczne jako czynnik zapobiegający nowotworom i poprawiający rokowanie: dobrze udokumentowana czy niepotwierdzona metoda? *Nowotwory J Oncol*. 2016;66(3):254–257.
9. Madetko R, Ćwiertnia B. Rehabilitacja po mastektomii. *Probl Pielęg*. 2008;16(4):397–400.
10. Matschay A, Turostowska R. Ocena Jakości Współpracy Lekarza I Pacjenta W Leczeniu Nadciśnienia Tętniczego W Śród Populacji Kobiet I Mężczyzn. *Now Lek*. 2013;82(4):294–302.
11. Gajewska D, Ździeborska M, Harton A, Myszkowska-Ryciak J. Ocena Znajomości I Przestrzegania Zaleceń Dietetycznych Przez Pacjentów Z Nadciśnieniem Tętniczym Pierwotnym. *Probl Hig Epidemiol*. 2013;94(2):258-261.

12. Prejzner W. Przestrzeganie zaleceń lekarskich w leczeniu przewlekłej białaczki szpikowej. *Hematologia*. 2010;1(3):239-243.
13. Szczepańska-Gieracha J, Malicka I, Rymaszewska J, Woźniewski M. Przystosowanie psychologiczne kobiet bezpośrednio po operacji onkologicznej i po zakończeniu leczenia. *Współcz Onkol.* 2010;14(5):1-8.
14. Karczmarek-Borowska B, Czaja E, Golon K. Aktywność fizyczna kobiet po mastektomii. *Prz Med Uniw Rzesz Inst Leków*. 2015;13(3):223–231.
15. Sierko E, Legieta M, Sokół M, Wojtukiewicz M. Ocena aktywności ruchowej kobiet po leczeniu radykalnym z powodu raka piersi. *Nowotwory J Oncol.* 2012;62(5):354–362.
16. Ridan T, Zdebska S, Ogrodzka K, Opuchlik A. Ocena poziomu aktywności fizycznej kobiet po zabiegu jednostronnej mastektomii. *Probl Hig Epidemiol*. 2015;96(1):181-186.
17. Lis A, Rębak D. Aktywność fizyczna kobiet po mastektomii z Klubu „Amazonki" w Kielcach. *Pielęg Pol*. 2015;3(57):262-266.
18. Irwin ML, Crumley D, McTiernan A, et al. Physical Activity Levels before and after a Diagnosis of Breast Carcinoma. *Cancer*. 2003;97:1746–1757.
19. Surwiłło A, Wawrzyniak A. Ocena świadomości żywieniowej osób z chorobą Nowotworową. *Probl Hig Epidemiol.* 2014;95(1):75-80.
20. Kruk J. Jedzenie owoców i warzyw a ryzyko raka piersi. *Współcz Onkol.* 2006;10(5):224–230.