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## Ocena profilaktyki raka piersi oraz jakości życia w opinii kobiet po jednostronnej mastektomii zrzeszonych w klubach amazonek

## Evaluation of breast cancer prevention and quality of life by women after single breast mastectomy, grouped in the 'Amazons' post-mastectomy women's club

### Streszczenie

**Wstęp.** Rak piersi jest najczęściej występującym nowotworem u kobiet w Polsce. W wyniku leczenia operacyjnego, dochodzi do obniżenia stanu fizycznego, jak i psychicznego, w tym jakości życia.

**Cel.** Celem pracy było ocena profilaktyki raka piersi w Polsce oraz wpływu mastektomii na jakość życia, w opinii kobiet po jednostronnej mastektomii zrzeszonych w klubach Amazonek.

**Materiał i metody.** Badaniami ankietowymi objęto 78 kobiet po jednostronnej mastektomii, ze średnią wieku 56,88 (±8,49). Wyniki badań poddano analizie statystycznej. Zastosowano test na istotność współczynnika korelacji p Spearmana, Pearsona oraz testy U Manna-Whitneya, Levene'a, t-Studenta i Kolmogorowa-Smirnowa ( $p>0,05$ ).

**Wyniki.** Wyniki badań wykazały, że spośród grupy osób deklarujących aktywność zawodową przed zabiegiem, ponad 70% powróciło do pracy. U zdecydowanej większości ankietowanych, zabieg mastektomii nie wpłynął na relacje z najbliższymi i znajomymi. Blisko 1/3 badanych nie stwierdziła problemów seksualnych z partnerem. Analiza statystyczna wykazała brak zależności pomiędzy oceną relacji seksualnych z partnerem, a wiekiem oraz wykształceniem badanych, a wykonywaniem badań samo kontrolnych. Nie wykazano również związku pomiędzy wiekiem badanych, a wykonywaniem badań samokontrolnych. Badane poziom profilaktyki raka piersi w Polsce, oceniły na średnim i dobrym poziomie. Analiza statystyczna testem U Manna-Whitneya, nie wykazała zależności między oceną profilaktyki raka piersi w Polsce, a miejscem zamieszkania ankietowanych.

**Wnioski.** W wyniku mastektomii obniżona zostaje sprawność ruchowa, która odzwierciedla się zarówno w życiu zawodowym, jak i prywatnym. Zabieg mastektomii ma wpływ na sposób patrzenia na własne ciało, jednak gdy związek z partnerem jest długi i silny, choroba nie wpływa w istotny sposób na zmianę relacji seksualnych. Wykształcenie oraz wiek badanych nie mają istotnego wpływu na regularność wykonywania badań samokontrolnych i okresowych.

**Słowa kluczowe:** mastektomia, jakość życia, profilaktyka raka piersi, kluby Amazonek.

### Abstract

**Introduction.** Breast cancer is the most common cancer in women in Poland. As a result of surgical treatment both the physical and psychological condition of the patient deteriorate and so does the quality of life.

**Aim.** The aim of the study was to evaluate the preventive measures for breast cancer in Poland and the effect of mastectomy on the quality of life, as viewed by women after single breast mastectomy of the "Amazons" Post-Mastectomy Women's Club.

**Materials and methods.** The research was carried out in a group of 78 women who had undergone single breast mastectomy with the average value of Age 56.88 (±8.49). The research results were subject to statistical analysis. The research made use of tests for Spearman's and Pearson's correlation coefficient  $\rho$ , as well as of the Mann-Whitney U test, Levene's, Student's and Kolmogorov-Smirnov's tests ( $p>0,05$ ).

**Results.** The study showed that out of individuals who reported to have been professionally active before the surgery, more than 70% have returned to work. For the majority of respondents, mastectomy did not have any effect on their relationships with family and friends. A statistical analysis pointed to a lack of relationship between evaluation of sex life variable and age, between the education level of respondents and the frequency of performing self check-ups and the level of education and frequency of undergoing medical check-ups. No correspondence was found between age of the respondents and frequency of performing self check-ups. The standard of cancer prevention in Poland was rated as average or good. The Mann-Whitney U test showed no relationship between rating of cancer prevention in Poland and place of residence.

**Conclusions.** As a result of mastectomy, the general physical fitness of the patient deteriorates, which is reflected in both the person's professional and private life. Mastectomy influences the patient's perception of her body; however, when the patient is in a long-term and stable relationship with her partner, her condition has no considerable effect on their sex life. Level of education and age of the patient do not have any effect on the regularity of medical check-ups and self check-ups.

**Key words:** mastectomy, quality of life, breast cancer prevention, Amazons post-mastectomy Women's Club.

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## INTRODUCTION

Breast cancer is the most common malignant tumour in women in Poland and constitutes over 20% of all tumours [1]. The disease can affect any person regardless of their level of education, occupational group and standards of living. That is why every woman should follow general preventive measures [2].

It is common knowledge that an early diagnosis of breast abnormalities increases the probability of successful treatment, including breast sparing. Women aged 40-59 have the highest risk of developing the disease. Hence, screening examination is performed e.g. by means of mammography in order to increase the number of breast-sparing surgeries, decrease the mortality and lower the costs of treatment [3]. The disease can affect any person regardless of their level of education, occupational group and standards of living. That is why every woman should follow general preventive measures [2].

As a result of mastectomy, both the physical and psychological condition of the patient deteriorate and so does the quality of life. Diminished function of the limb does not only result in decreased work efficiency but also in a limited ability to perform daily activities, such as bathing, dressing or tidying-up. The situation, together with loss of the breast, has a major psychological effect on the patient, which is reflected in their increased irritability, withdrawal from the society or depression. Breast amputation means for every woman a loss of attribute of her femininity and maternity, difficulty in defining her place in the society, often career change or career resignation. She has a difficulty in accepting her body, which is reflected in her sex life and occasionally can lead to family break-up. Another problem involves informing the children about their mother's health, sometimes passing the information about the incurability of their mother's condition [4]. The patient's psychological condition is also affected by the stay in hospital, the lack of proper psychological care, poor cooperation with the doctor, which results in the patient's unawareness of their medical condition and the treatment applied. All that forms the 'vicious circle' of psychological tension, doubt, growing fear and anxiety, drawing negative conclusions [5].

## AIM

The aim of the study was to evaluate the preventive measures for breast cancer in Poland and the effect of mastec-

tomy on the quality of life, as viewed by women from the "Amazons" Post-Mastectomy Women's Club who have undergone single breast mastectomy.

## MATERIAL AND METHODS

The research was carried out in a group of 78 women from the „Amazons” Club in Nowy Sacz and Bielsko-Biala, who had undergone single breast mastectomy. The patients were aged 32-79 with the mean age 56.88 ( $\pm 8.49$ ). The mean age at which the patients were diagnosed with cancer was 50.13 years. At the time of the research, on average 6.51 years had passed since the surgery, with the minimum of 5 months and the maximum of 20 years. Left breast mastectomy was carried out in 44 women (56.41%), while 34 women (43.59%) underwent right breast mastectomy.

In the group examined, 59 women (75.64%) had an urban background, whereas 19 (24.36%) were of rural origin. The level of education was as follows: two individuals (2.56%) possessed elementary level education, eleven (14.10%) completed vocational schools, forty-four (56.41%) had secondary level education and twenty-one (26.92%) were degree level educated.

The basis for the research was a survey designed by the researchers and conducted in 2009. The research results were subject to statistical analysis. The research made use of tests for Spearman's and Pearson's correlation coefficient  $\rho$ , as well as of the Mann-Whitney U test, Levene's, Student's and Kolmogorov-Smirnov's tests. The values of the Education Level variable and Evaluation of Cancer Prevention in Poland variable were established for 78 respondents, while the Evaluation of Sex Life variable was determined for 46 respondents (Tab.1, Tab.2).

## RESULTS

Following mastectomy, the majority of women i.e. 24 (30.77%) gave their present quality of life a rating of 8 on a ten-point scale. None of the respondents rated their present quality at 0-3 points.

The biggest self-care problems mentioned by the respondents were: washing/drying the hair – 18 women (23.08%) and dressing/fastening the bra – 16 women (20.51%). Thirty-seven individuals (47.44%) did not have any difficulty performing those activities.

TABLE 1. Descriptive statistics for the ordinal variables across the whole sample.

Variable	Mean	Standard deviation.	Quartile 1	Mediana	Quartile 1 3	Min. value	Modal	Max. value
Level of education	3.08	0.72	3.00	3.00	4.00	1.00	3.00	4.00
Evaluation of sex life	2.93	0.80	3.00	3.00	3.00	1.00	3.00	4.00
Rating of cancer prevention in Poland	3.67	1.20	3.00	4.00	5.00	1.00	5.00	6.00

TABLE 2. Descriptive statistics for age calculated across the whole sample, together with Kolmogorov-Smirnov Z statistic for testing the null hypothesis of normal distribution.

Variable	Mean	Standard deviation.	Min. value	Max. value	Number of significant	Z statistics of normal distribution test	K-S test significance
Age	56.88	8.49	32.00	79.00	78	0.710	0.695

When comparing the level of self-care with that preceding the surgery, the majority of respondents gave it a rating of 8 and 10 respectively on a ten point scale, which corresponds to 24.36% and 23.08%. None of the respondents gave a rating of 0 or 2. A few individuals rated the level of self-care at 1, 3 and 4 points.

Among the respondents, 30 individuals (38.46%) returned to the career they had pursued prior to the surgery; the problem was irrelevant for 29 respondents because of retirement or being continuously unemployed. Only 4 individuals (5.13%) admitted they had to change their career due to their health condition.

The most commonly mentioned emotional problems were: irritability – 40 individuals (51.28%), inner sunderance – 32 individuals (41.03%), excessive worrying – 27 individuals (34.62%), problems with concentration – 13 individuals (16.66%). Seven respondents (8.97%) reported having no problems.

The majority of respondents – 56 individuals (71.79%) declared that mastectomy did not have any effect on their relationships with family and friends. The remaining group mentioned improvement in interpersonal relationships – 4 individuals (5.13%), openness – 2 individuals (2.56%).

Nearly a third of the respondents did not report any problems in their sex life – 22 individuals (28.21%), eighteen respondents (23.08%) had difficulty accepting their naked body, thirteen respondents (16.66%) mentioned the problem of post-surgical scarring. The smallest percentage of women felt deprived of their sexuality – 8 individuals (10.26%) and attractiveness – 7 respondents (8.97%).

Analysing the results with regard to sex life, 29 respondents (37.18%) rated their sex life as good, whereas in the case of 32 individuals this category was irrelevant. Only 4 respondents (5.13%) rated their sex life as bad or average respectively.

A statistical analysis pointed to a lack of relationship between Evaluation of Sex Life variable and Age variable ( $\rho(44)=0.15$ ;  $p>0.05$ ) (Tab.3, Fig.1).

TABLE 3. Juxtaposition of values used in the Figure 1.

Group name	Mean	Standard deviation	N
Bad	55.75	3.40	4
Average	50.50	8.58	4
Good	53.64	9.49	29
Very good	56.89	6.68	9

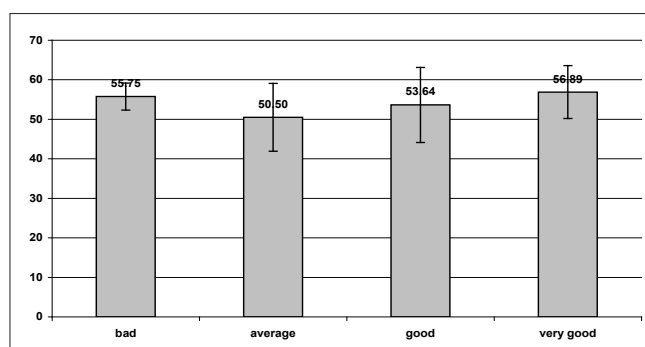


FIGURE 1. Age mean variables divided into four groups with respect to Evaluation of Sex Life variable. Whiskers mark standard deviation.

In the group examined, only 45 respondents (57.69%) performed self check-ups, and 37 women (47.45%) un-

derwent periodic medical check-ups. Within the group of 45 women performing self check-ups only 14 respondents (17.95%) did that monthly, 11 respondents (14.10%) every 2-6 months, 3 respondents (3.85%) every year, 10 respondents (12.82%) every few years, 7 respondents (8.97%) did not mention the frequency of performing check-ups. Periodic medical check-up was performed once a year by 12 respondents (15.38%), one person (2.82%) had it every six months, 13 respondents (16.67%) every few years, while 11 women (14.1%) did not mention the frequency.

Analysis of the data showed that the women underwent infrequent and irregular self check-ups and medical check-ups. Analysis of the data showed that no significant difference was found between the education level of respondents and the frequency of performing self check-ups ( $U=1140.00$ ;  $p>0.05$ ) (Tab.4, Fig.2) and between the level of education and frequency of undergoing medical check-ups ( $U=1439.50$ ;  $p>0.05$ ) (Tab. 5, Fig.3).

TABLE 4. Results of Mann-Whitney U test for correlation between the Age dependent variable and Performing Self Check-ups independent variable calculated across the whole sample.

	Do not perform self chek-ups	Perform self check-ups		Test significance (twotailed)
N	Mean rank	Mean rank	Mann-Whitney U	
78	34.55	43.13	1140.00	0.064

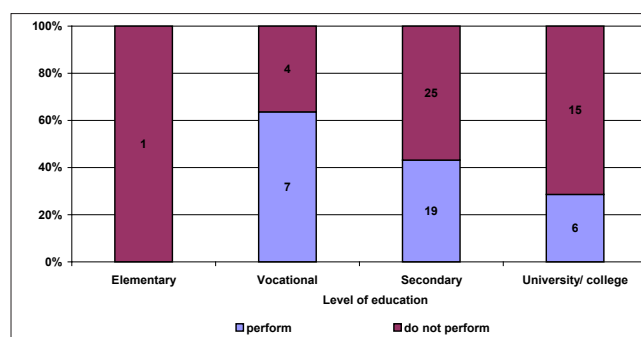


FIGURE 2. Frequency distribution of the Performing Self Check-ups variable divided into groups with respect to Level of Education variable.

TABLE 5. Results of Mann-Whitney U test for correlation between the Age dependent variable and Performing Periodic Medical Check-ups independent variable calculated across the whole sample.

	Do not perform periodic chek-ups	Perform periodic check-ups		Test significance (twotailed)
N	Mean rank	Mean rank	Mann-Whitney U	
78	40.04	38.91	1439.50	0.805

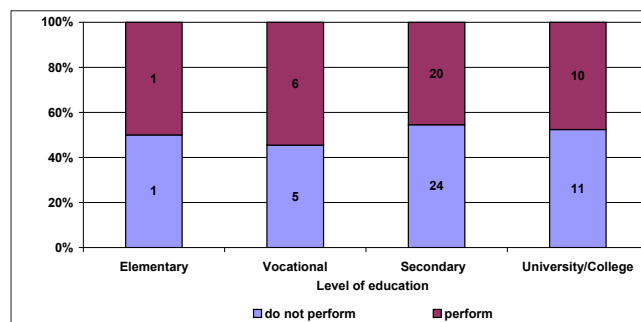
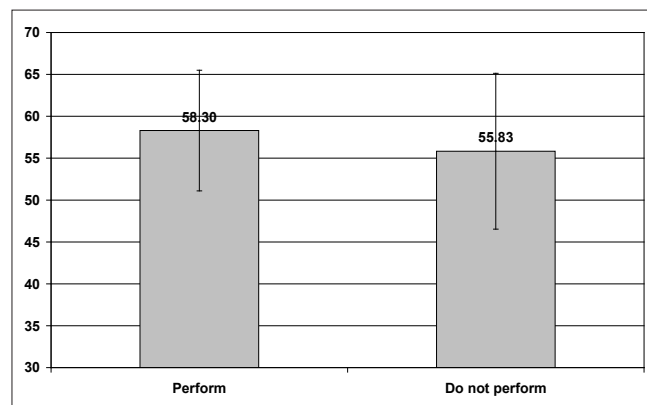


FIGURE 3. Frequency distribution of Performing Periodic Check-ups variable divided into groups with respect to Level of Education variable.

**TABLE 6. Results of Student's T statistic test for independent groups of correlation of Age with the Performing Self Check-ups independent variable calculated across the whole sample.**

Do not perform self check-ups		Perform self check-ups		Levene test significance	Variances in both groups	T statistics	df	T test significance (two-tailed)	95% confidence interval	
Mean	Standard deviation	Mean	Standard deviation						min	max
58.3	7.2	55.8	9.3	0.20	Are equal	1.27	76	0.206	-1.4	6.3

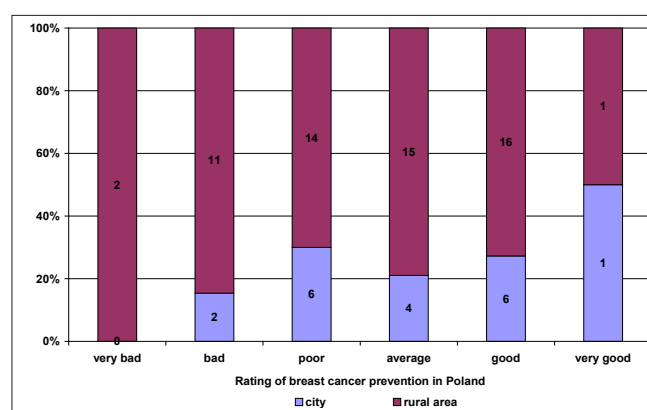
**FIGURE 4. Age mean variables divided into two groups with respect to Performing Self Check-ups variable. Whiskers mark standard deviation.**

No correspondence was found between the age of respondents and frequency of performing self check-ups ( $t(76)=1.27$ ;  $p>0.05$ ) (Tab.6, Fig.4).

The Mann-Whitney U test showed no dependence between Rating of Cancer Prevention in Poland variable and Place of Residence variable ( $U=2259.50$ ;  $p>0.05$ ) (Tab.7, Fig.5).

**TABLE 7. Results of Mann-Whitney U test for correlation between the Rating of Cancer Prevention dependent variable and Place of Residence independent variable calculated across the whole sample.**

Rural area		City		Mann-Whitney U	Test significance (two-tailed)
N	Mean rank	N	Mean rank		
78	43.24	38.30		2259.50	0.394

**FIGURE 5. Relative frequency distribution of Place of Residence variable divided into groups with respect to Rating of Breast Cancer Prevention variable.**

Out of 78, only 20 respondents (25.64%) rated the standard of cancer prevention in Poland as very good, while 13 individuals (16.67%) rated it as poor.

## DISCUSSION

Mastectomy results in the deterioration in quality of life, which is commonly understood as physical, psychological and social well-being of the patient [6]. The majority of respondents reported having satisfactory, good and very good health condition prior to the surgery. After the surgery the majority – 24 individuals (30.77%) gave their present quality of life a rating of 8 on a ten-point scale.

Out of 42 individuals (53.85%) who had been occupationally active before the surgery only 30 women (71.43%) returned to their career. Within that group only 4 women (5.13%) changed their job/profession due to health condition. The remaining 12 respondents (15.38%) did not return to work. The research carried out by Łuczak et al [7] shows that decrease in professional activity was even bigger, i.e. from 98 to 28% in the case of women after mastectomy. Thirty respondents (38.46%) did not report decreased work efficiency due to the medical condition, out of that group 4 individuals did not return to their career. The remaining respondents reported different degrees of diminished efficiency. The research does not say whether the examined women did manual or mental work, which could also have an effect on their decision concerning career change due to the limited function of the upper limb after the surgery.

For the considerable majority of respondents (71.79%), the surgery did not have any effect on their relationships with friends and family. In individual cases a deterioration in the interpersonal relationships was noted, the remaining groups of respondents reported an improvement in their relationships. The most commonly mentioned emotional problems were: irritability (51.28%), inner sunderance (41.03%), excessive worrying (34.62%). Also Chwałczyńska et al. [6] demonstrated in their research that irritability, followed by excessive worrying, were the most common problems.

As for the patients' sex life, nearly a third of the respondents did not report having any problems, for another third this category was irrelevant (widows, single women). A statistical analysis pointed to a lack of relationship between Evaluation of Sex Life variable and Age variable. Considering the age of respondents, a conclusion can be drawn that long-term marriages or relationships are strong enough to survive even the most difficult circumstances. The relationship between partners did not change when the woman had breast amputation. Similar conclusions were drawn by Dmoch-Gajzlerska and Kowalczyk in their study [8].

One of the major issues related to breast cancer is cancer prevention. Undergoing regular self check-ups and periodic medical check-ups (interview and physical examination) is a basis for early detection of breast abnormalities and for applying breast sparing treatment.



Since women in Poland seek medical help in the late stages of the disease, breast sparing treatment is only performed in 5% of women every year, as compared to 50-70% in Western Europe and North America [9]. The survey suggests that only 14 individuals (17.95%) carry out self check-ups every month, while 12 respondents (15.38%) undergo periodic medical check-up every year. Synowiec-Piłat [10] in her study demonstrated that women perform self check-ups with equal infrequency (22% of a group of 194 women declaring familiarity with the method), whereas periodic medical check-ups are more common (more than half of the respondents undergo them at least once a year). Similarly, Jokiel [11] shows that only 28% of women perform self check-ups once a month. According to a study done by Zych et al [12], every third person who was familiar with the method of breast self-examination did not perform a self-check at all.

Regular medical check-ups are not common among women. Consequently, at the point when a woman is diagnosed with cancer, it is necessary to apply radical treatment. The present research has confirmed a disturbing fact that women not only neglect self check-ups, but also do not undergo periodic medical check-ups. In the author's research, where 59 women (75.64%) had an urban background, and where 21 individuals (26.92%) and 44 individuals (56.41%) declared degree level and secondary level education respectively, statistical analysis showed no significant relationship between *Rating of Cancer Prevention in Poland* variable and *Place of Residence* variable and the frequency of performing self check-ups and periodic medical check-ups.

There are several popular programs promoting breast cancer prevention, e.g. the Pink Ribbon, campaigns organized by Avon. It could be assumed that such actions should contribute to a wide knowledge of cancer preventive measures. The majority of respondents, however, rated the level of cancer prevention as poor, average or good, as many as 13 women (16.67%) evaluated cancer prevention as bad, which corresponds to the results of research by Zych et al [12], and points to a need for more extensive education. According to statistical analysis no relationship exists between *Rating of Cancer Prevention in Poland* variable and *Place of Residence* variable. It could be assumed that campaigns promoting breast cancer prevention are wide enough to reach even women in rural areas.

The results of the present research demonstrate the complexity of problems that appear as a result of mastectomy. Despite more and more frequent cases of the disease and more common cancer prevention measures, the regularity of performing medical check-ups by women is still low.

## CONCLUSIONS

1. Breast cancer prevention, despite extensive social campaigns is still poorly developed.
2. As a result of mastectomy, the general physical fitness of the patient deteriorates, which is reflected in both the person's professional and private life.
3. Mastectomy influences the patient's perception of her body; however, when the patient is in a long-term and

stable relationship with her partner, her condition has no considerable effect on their sex life.

4. Level of education and age of the patient do not have any effect on the regularity of medical check-ups and self check-ups.

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