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The Quality of Life and Degree of Depression of Patients Suffering from Breast Cancer

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ABSTRACT

Introduction: Breast cancer and its treatment change the perception of mastectomized women of their physical appearance, which leads to depression and has a negative effect on the overall quality of life of those woman. **Aim:** We wanted to assess the quality of life and the degree of depression of patients suffering from breast cancer, on the basis of a standardised questionnaire to assess the patients' quality of life (QLQ-C-30 BR-23), and the degree of depression using Beck's Depression Inventory (BDI, II). **Materials and Methods:** The research was conducted on a sample of 160 patients, who were surveyed before and after the surgical procedure. The inclusion criteria for the research were: patients suffering from breast cancer aged between 18 and 70 years, cancer diagnosed by FNB or CORE biopsy. The patients were divided into two groups: patients having breast-conserving surgery and patients having radical surgical treatment. **Results:** There were 47 or 39.37% patients who underwent breast-conserving surgery and 113 or 70.62% patients who underwent radical surgery. The results of the survey conducted show that there was no difference in the quality of life of patients before and after surgery, regardless of the type of surgical procedure undertaken. However, there was a significant different in the degree of depression between patients subjected to different surgical procedures, where the patients surveyed post-surgery after radical mastectomy showed a higher degree of depression than the patients surveyed after breast-conserving surgery. **Conclusion:** There is no difference in the quality of life before and after surgery, regardless of the type of operation. However, there is a significant difference in the degree of depression in patients after radical mastectomy, who showed a higher degree of depression than the surveyed patients who underwent breast-conserving surgery.

Keywords: breast cancer, depression, quality of life.

1. INTRODUCTION

The quality of life comprises one's comprehensive and overall satisfaction/dissatisfaction with one's own life. This is the subjective experience of each person, which undoubtedly depends on the objective circumstances of that person's life, as well as their value system, expectations and aspirations. Quality of life relates to personal well-being and life satisfaction, including mental and physical health (1, 2).

We may describe depression as a feeling of strong sorrow, hopelessness and sadness, which may appear as a reaction to a sad event (the death of someone close) or it may be without any particular cause, as unknown and inexplicable to us, frequently accompanied by other difficulties of a psychological nature (3).

Breast cancer and its treatment (mastectomy, chemotherapy, and radiotherapy) change the experience (perception) of the physical appearance of masectomized women, and may have a negative effect on the overall quality of life of those woman. The alteration in the appearance of a woman's body due to treatment for breast cancer (mastectomy, chemotherapy) is a source of psycho-social difficulties (depression) (1, 2, 4).

The *American Cancer Society* states that most patients, their families, and relatives are faced with some degree of depression, anxiety or fear, when cancer becomes part of their lives. That feeling is the normal response to the life changes experienced (4, 5).

2. AIM

Quality of life and the degrees of depression have not been researched in this group of patients in Bosnia and Herzegovina. Therefore we wanted to assess the quality of life and the degree of depression in surgical patients, pre-operatively and post-operatively, depending on

whether they underwent breast-conserving or radical procedures, in order to improve the treatment of these seriously ill patients.

3. PATIENTS AND METHODS

The study was conducted as a prospective study. The research encompassed 160 patients treated at the Clinic for Oncological Surgery of the University Clinical Centre in Sarajevo.

Informed consent: "Informed consent was obtained from all individual participant included in the study."

The patients were divided into two groups:

Group 1: patients suffering from breast cancer who were treated with breast-conserving surgery (segmentectomy, quadrantectomy, hemimastectomy).

Group 2: patients suffering from breast cancer who underwent radical surgery (radical mastectomy).

The inclusion criteria for the research: patients aged between 18 and 70 years, findings of mammography, ultrasound or magnetic resonance of the breast, confirmed diagnosis of cancer by fine needle or core biopsy, surgical treatment suggested by oncology consultants.

The exclusion criteria for the research: patients younger than 18 and older than 70, and patients who refused to take further part in the research.

All patients in the research received informed consent from the ethical committee.

The assessment of quality of life and the degree of depression in the surveyed patients was conducted pre-operatively and post-operatively on the basis of a standardised questionnaire for assessment of the quality of life of patients suffering from breast cancer (QLQ-C-30 BR-239 and the degree of depression using Beck's Depression Inventory (BDI, II).

4. RESULTS

During the research, which ran from January 2013 to June 2014, a total of 202 patients underwent surgery in the Clinic for Oncological Surgery of the Clinical Centre of the University of Sarajevo, and 160 of them, or 79.2%, were surveyed. Thirty-six patients (17.8%) did not meet the criteria for inclusion in the research (older than 70 years) and four patients (1.98%) refused to take part in the research.

The patients (n=160) who were surveyed pre-operatively were in two groups: a) patients for whom a breast-conserving surgical procedure was planned, of whom there was a total of 47, or 29.3% of those surveyed, and b) patients for whom a radical surgical procedure was planned, 113 or 70.6% of those surveyed.

Distribution into groups and sub-groups was undertaken on the basis of the surgical procedure planned (the decision on treatment made on the basis of the consultant's decision for each patient) and conducted. The average age of those surveyed pre-operatively was 53.91, with a variance of $\sigma^2$227.6, and standard deviation of σ 15.09. The average age of those surveyed post-operatively was 53.97, with a variance of $\sigma^2$225.7, and standard deviation of σ 15.02. The average age of the patients who were treated with breast-conserving surgery was 50.89 years, with a variance of σ^2 138.0, and standard deviation of 11.75. The average age of the patients who were treated with radical surgery was 55.21 years, with a variance of σ^2 239.3, and standard deviation of 17.13.

Quality of life

The EORTC-QLQC30 questionnaire showed the following to be the most important responses: 76.5% mentioned problems in undertaking tiring activities (carrying bags), 74.4% mentioned the presence of pain, 80.8% patients mentioned the need for rest, 65.9% patients had difficulty sleeping, 68% patients felt weak, 78.7% were anxious, 65.9% of those surveyed were irritable, 80.8% stated that their illness had caused them financial problems.

The results of the analysis (correlation analysis and T-test) of the patients surveyed pre-operatively and post-operatively showed that there was no difference in the quality of life of the surveyed patients before and after surgery. The correlation coefficients of (pre-operatively) 0.963662 and (post-operatively) 0.96412 indicate the very high correlation between the groups, that is, there was no significant difference between the procedures. The hypothesis was proven with a 5 and 2.5% risk, because t=1.539365 (pre-operatively) and t =0.884821(post-operatively) are lower than the critical values 1.674689 and 2.006647. Therefore, it may be said that there was no significant difference in the quality of life of the surveyed patients before and after the operation, regardless of the type of surgical procedure planned (breast-conserving or radical).

The degree of depression

The degree of depression was greater in patients for whom radical surgery was planned, and this greater degree of depression continued in the post-operative period (Tables 1 and 2).

	Minimal depression		Mild depression		Moderate depression		Severe depression	
	No	%	No	%	No	%	No	%
Breast conserving surgery	25	53.1	10	21.2	4	8.5	8	17.0
Radical surgery	66	58.4	9	7.9	24	21.2	14	12.3

Table 1. The degree of depression of the surveyed patients pre-operatively

	Minimal depression		Mild depression		Moderate depression		Severe depression	
	No	%	No	%	No	%	No	%
Breast-conserving surgery	25	53.1%	10	21.2 %	4	8.5%	8	17.0%
Radical surgery	66	58.4%	9	7.9%	24	21.2%	14	12.3%

Table 2. Degree of depression of the surveyed patients postoperatively

The results obtained by analysis (correlation analysis and T-test) of the patients surveyed pre-operatively and post-operatively showed a significant difference between the degrees of depression of the surveyed patients who underwent different surgical procedures (breast-conserving and radical), and in the case of the radical procedure the degree of depression in the patients was higher.

The correlation coefficient pre-operatively was 0.899488, and post-operatively 0.920687, which indicates a high correlation between the groups. The hypothesis of the equality of the mean of the groups was proven with 5 and 2.5% risk, because |t| = |-1.4276| is less than the critical values of 1.7247 and 2.0860. Therefore, it may be said that there was no significant difference in the degree of depression before and after the operation.

For the patients surveyed post-operatively who underwent radical mastectomy, the hypothesis could not be proven with a 5% and 2.5% risk because |t| =|-2.7398| is greater than the critical values of 1.7247 and 2.0860. So it may be said that there was a significant difference between the degrees of depression of the surveyed patients who underwent different surgical procedures (breast-conserving and radical). That different is seen in the difference of the means and equals: 0.6142-0.6813 = -0.0671. The mean value of the responses (the mean number of points) was greater in the case of radical surgery than in breast-conserving surgery: 0.6813>0.6142, a difference of 0.0671, so it may be concluded that in the case of radical surgery the degree of depression in the patients was greater.

5. DISCUSSION

The five-year survival rate for breast cancer is close to 86%. Results show that women with breast cancer achieve their maximum psychological and physical recovery one year after establishment of the diagnosis (6, 7). The highest percentage of cases of breast cancer are found in middle aged women, Volker et al. (7, 8). The ratio of radical and breast-preserving surgery in our study is not in accordance with the literature consulted, there is a larger proportion of radical surgical procedures, 113:47 (7). Research shows that the type of surgical treatment does not have a significant effect on the quality of the patients' lives (8). Relapse or recurrence of the disease has a harmful effect on the quality of life in the tested population. In our research on a total of 202 patients who had undergone surgical treatment, 24 patients, or 11.8%, underwent surgery for a recurrence of the disease. In the course of the research all the patients (n= 160) who were surveyed pre-operatively completed the same questionnaire postoperatively (n=160). Completion of the questionnaire post-operatively was carried out at the follow-up examination, on average three months after the patient had been discharged. If we take the questions from the EORTC-QLQ-C30 questionnaire individually, the indicators correspond to the data from the literature regarding the most significant symptoms found in the patients surveyed pre-operatively and post-operatively, which are pain in the arm on the side of the operated breast, financial problems, anxiety, and breathlessness (5). Special interventions such as education of patients, coping and managing skills, and support groups may help to improve the quality of life of women after they have been diagnosed with breast cancer.

Studies have shown that patients with breast cancer are particularly subject to depression, because of the symptoms, which cause a threat to their life. Some of the problems these patients encounter are the fear of death, the destruction of their plans in life, changes to their physical appearance, financial problems and anxiety about their life. All these may cause the development of depression.

Severe depression is not just sadness or a bad mood; severe depression occurs in almost 25% of all patients suffering from cancer (9, 10). In patients with breast cancer the most significant influence on their physical appearance, their self-image and their sex life is mastectomy, and this may be the explanation for the anxiety and depression in these patients (11).

In our research it may be said there was a significant difference between the degrees of depression of the surveyed patients who underwent different surgical procedures (breast-conserving and radical). The results of this study show that depression is present in all patients with breast cancer, but it is especially strong in patients who have undergone a radical surgical procedure.

Treatment aimed at preventing the sequalae of medical interventions should be an integral part of the early rehabilitation, incorporated into the treatment regime, and it is also recommended in the pre-operative period in treating patients suffering from breast cancer to include psychotherapy.

6. CONCLUSION

There is no difference in the quality of life before and after surgery, regardless of the type of operation. The depression is present in all patients with breast cancer, but it is especially in patients who have undergone a radical surgical procedure. The education of health care professional regarding the rehabilitation of oncology patients must be multi-discipline in character, in order to provide adequate assistance to women suffering from breast cancer. Positive legislative changes and decisions on the scope of rights and the framework of the basic package of health care services must regulate the issue of the accessibility of the vitally necessary resources for this category of patients, especially in relation to the legislation on the accessibility of implants and expanders, so important for these patients, which in the Bosnia and Herzegovina are not on the health insurance list.

- **Author's Contribution:** Mirhan Salibasic – initial phase (idea, lit-erature review, hypothesis, execution phase, writing). Samir Delibe-govic – analytical phase (analysis, final writing, revision).
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- **Informed consent:** "Informed consent was obtained from all individual participant included in the study."

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