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The Impact of Body Image and Self-Perceived Physical Ability on the Well-Being after Mastectomy without Reconstruction

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Abstract

Introduction: Mastectomy has well-known effects on both physical health status of the patients as well as on their mental life (self-image, daily activities, social integration, lifestyle, etc.). The aim of this study was to identify the physical and psychological factors associated with post-mastectomy distress.

Material and Methods: Thirty-one women aged 39 to 69 years old (mean age 57 +/- 7.85 years old) who underwent surgery for tumour excision responded to questionnaires on their current physical and psychological well-being following surgery. 83.33% of the patients underwent mastectomy, 10% lumpectomy, and 6.67% both interventions. Age at the time of surgery ranged from 33 to 67 years old (mean 48.30 +/- 7.54). Fifty percent of the patients had no family cancer history, 30% had a family cancer history, and 16.67% were not aware of their family antecedents.

Results: Over half of the women were satisfied with their arm and trunk mobility and the ability to perform strenuous or prolonged exercise; 60% of patients were satisfied and very satisfied with the postoperative scar. 78.56% feel comfortable when making short trips (weekend). A higher depression score was identified in patients who received chemotherapy compared to those who received hormonotherapy, radiation therapy or targeted therapy.

Conclusions: The quality of life of mastectomized patients is influenced by the level of satisfaction with body image, perceived physical state, and independence in activities of daily living, and type of therapy. The age at the time of surgery, time passed since surgery or educational level, had no influence on the quality of life.

Keywords: Mastectomy; Quality of life; Distress; Breast cancer

Introduction

Breast cancer is the most common form of cancer diagnosed in women (23% of all cancer cases) and the leading cause of cancer death, accounting for 14% of all cancer deaths [1]. Studies show that breast surgery, regardless of type, mastectomy or lumpectomy, has a major impact on both health and psychosocial life, affecting patient's femininity, body image and indirectly her behaviour and social integration [2].

The impact of mastectomy is strongly reflected on body image during the first 3-12 postoperative months [3]. Thirty percent of the women with breast cancer require mastectomy, of which 8-10% undergo immediate or delayed breast reconstruction. Many studies have confirmed its psychosocial benefits; however, the research conclusions are not generally valid [4-7]. Boughton showed that most psychological consequences of conservative breast cancer surgery mostly depend on individual personality and not on the type or technique of surgical procedure [8]. The psychological echo of mastectomy is generated by stress and feeling of disfigurement due to breast loss, to which the anxiety generated by the disease that threatens the vital prognosis adds up [9].

The ultimate goal of modern medicine is to overcome life-threatening obstacles and offer better chances of survival to certain categories of persons who would otherwise have tragic destinies. This idea is more easily understood by people who have to deal with patients with similar diagnoses [10].

According to the WHO definition, the concept of "quality of life" (QoL) implies the absence of disease on the background of physical, social and mental well-being [11]. Ensuring QoL is assumed by a multidisciplinary team of physicians, psychologists, social workers, nurses, who must work together to improve the physical, mental and social well-being of patients. The WHO definition of health emphasizes not only the physical well-being, but also the idea that health represents a balance between physical, mental and social well-being in an environment that promotes good health. Consequently, the health status is the expression of individual's capacity to adjust adequately to his environment, so that a harmonious balance between the psychophysiological states, body resources and environmental circumstances to be established. Currently, there is no universally accepted definition of health, but a plurality of definitions, due to the extensive *medical knowledge gained*, cultural specificity and to the fact that health is an evolving concept. As advances in medicine have led to highly improved therapeutic methods aimed at delaying as much as possible the complications and death, logically, those who are assessing the health status should consider the idea of not only saving lives but also of improving its quality.

Osoba evokes six basic lessons emerging from the measurement of QoL in oncology: (a) QoL is a multidimensional construct that should be measured with adequate tools; (b) outside observers are poor judges of how cancer patients feel about their QoL; (c) high rates of compliance

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in the collection of self-report QoL data; (d) aggressive therapy may result in improved QoL; (e) pathological symptoms are associated with quantifiable disruptions in QoL; (F) CV pre-treatment QoL may be predictive of may be predictive of on-treatment QoL and of survival [12]. The breasts are attractive in many cultures and losing a breast by mastectomy is considered to be extremely demanding mentally compared to other forms of cancer therapy [13]. In this context, surgeons hope that breast preservation or reconstruction would help the affected women to regain psychological well-being, resume daily life activities, and have sexual relationships and better sexual functions after breast cancer diagnosis and treatment [14].

Material and Method

Study sample

In the interval October 2014 - January 2015, a total of 31 women from Northeast Romania who were diagnosed with breast cancer and underwent mastectomy answered a QoL-M questionnaire developed by the first author of this study. The relatively small study sample is mainly explained by the surprisingly numerous difficulties encountered in identifying and approaching the patients operated for breast cancer. Most patients (93.1%) were from urban areas, and 6.9% from rural areas and their age ranged from 39 to 69 years old, with a mean of 57.22 +/- 7, 85 years old. The time elapsed since surgery ranged from 1 to 21 years, with a mean of 8.25 +/- 4, 89 years. The age at the time of breast cancer surgery ranged from 33 to 67 years old, with a mean of 48.3 +/- 7, 54 years.

Fifty per cent of the patients had higher education, 30% high school education, 6.67% secondary education and 13.32% primary education or unschooled. As to marital status, 6.45% were unmarried, 54.84% married, 25.81% divorced, and 12.9% widows. A percentage of 12.9 had no children, 41.94% had one child, 38.71% had two children, and 6.45% had three children.

QoL-M questionnaire

The questionnaire consisted of 64 items with response scales (four levels of intensity), developed by studying the literature and based on the results obtained from personal interviews and focus groups of mastectomized patients. Items are based on a 5-dimensional structure: functional (e.g. satisfaction with arm mobility), physical state (e.g. frequency of arm pain); relational (e.g. family relationship); mental disposition (e.g. good mood); sexual life (e.g. frequency of intercourse).

The following socio-demographic variables were taken into account: age, area of residence, education level, marital status, number of children, depression level, data on surgical intervention, aspects of the doctor-patient relationship, family history, comorbidities, disease-related data (diagnosis, time passed since surgery), treatment, type of surgery, ways of informing the patient about the possibility of breast reconstruction, source of information and reasons for not having breast reconstructive surgery until the time of questioning. The relationships between these variables and responses to the QoL-M questionnaire will be analysed in a further step of this

The main objectives of this research were:

1. preliminary assessment of QoL-M questionnaire psychometric characteristics;
2. Analysing the collected data about the QoL of mastectomized patients and the relationship between QoL and the level of depression.

The research was approved by the Ethics Committee of the Iași "Grigore T. Popa" University of Medicine and Pharmacy. The questionnaire was completed after the patients were instructed and signed the informed consent. Data were processed with SPSS 22.0.

Results

Medical variables

The synthesis of medical data of patients included in the study is shown in Table I. About half of the investigated patients (46.67%) had various associated diseases (other cancers, hypertension, diabetes), 46.67% answered that they did not have associated diseases, while 6.67% said they were not aware of diseases other than the one they were operated for.

Fifty per cent of patients declared not having a family cancer history, 30% had a family cancer history (parents, siblings or extended family), and 16.67% said they were not aware of such a diagnosis in their close relatives. More than half of the patients, 53.33%, declared that prior to diagnosis they had various family problems (financial, relational, stressful life events etc.)(Table I).

Psychometric characteristics of QoL-M questionnaire

Data in Table II summarize the correlations between the 6 dimensions of the questionnaire, overall QoL score and Cronbach alpha value, calculated on the study sample. The values show in the first place, appropriate levels Cronbach alpha index, from 0.79 to 0.94. As expected, the correlations between overall score of QoL and the six dimensions are relatively high. However, the correlations between questionnaire dimensions are relatively small, indicating a sufficient level of mutual independence. (Table II)

Analysis of Satisfaction Level with some QoL Indicators Measured by qol-M Questionnaire

Satisfaction with physical state

The items aimed at identifying the level of satisfaction with the ability to perform strenuous or prolonged exercise, arm and trunk mobility, variables considered only in relation with the performed surgery and its consequences. Responses were assessed on a scale of 1 to 4 (where 1=very little satisfied, 2=little satisfied 3=satisfied and 4=very satisfied) and the results are as follows:

1. Capacity to perform strenuous physical exercise, with mean of 2.28+/-1.15; of all responses, 25% of patients were very little satisfied, 7.14% little satisfied, 53.57 satisfied, and 7.14% very satisfied with their ability to perform strenuous exercise;

Table I: Medical data related to the type of surgery for malignant breast tumour removal.

Type of Surgery	**Percentage (number)**
Mastectomy	83.33% (N=22)
Sectorectomy	10% (N=3)
Breast surgery of both breasts by both procedures	6.67% (N=2)
Therapy type	**Percentage (number)**
Chemotherapy	86.7% (N=26)
Radiation therapy	60% (N=18)
Hormone therapy	70% (N=21)
Targeted therapy	10% (N=3)

Table II: Correlations between QoL overall score and QoL dimensions (On diagonal the index Cronbach alpha).

Scales	No. of items	1	2	3	4	5	6
QoL overall score	49	-0.94					
Functional	14	0.73**	-0.87				
Physical	9	0.66**	0.2	-0.91			
Relationships	6	0.78**	0.70**	0.22	-0.79		
Mental disposition	15	0.89**	0.61**	0.61**	0.65**	-0.86	
Sexual life	5	0.76**	0.35*	0.48**	0.54**	0.62**	-0.85

**Significant at $p< 0.001$
*Significant at $p< 0.05$

2. Prolonged physical exercise, with a mean of 2.32 +/- 1.14: 8% of the patient were not at all satisfied, 20% were satisfied, 12% little satisfied, 52% satisfied and 8% very satisfied with their capacity for prolonged physical exercise;
3. Arm mobility, with a mean of 3.28 +/- 0.93; of all responses, 7.14% were very little satisfied, 10.71% little satisfied, 28.57% satisfied, and 53.57% very satisfied;
4. Arm swelling after breast surgery, with a mean 2.75 +/- 1.17, of which 25% were very little satisfied, 7.14% little satisfied, 35.71% satisfied and 32.14% very satisfied with lymphedema;
5. Trunk mobility, with an average of 3.4 +/- 0.97, of which 7.41% were very little satisfied, 11.11% little satisfied, 14.81% satisfied and 66.67% very satisfied with the ability to move their body;
6. Postoperative scar, with an mean of 2.73 +/- 1.11; of all responses, 19.23% were very little satisfied, 19.23% little satisfied, 30.77% satisfied and 30.77% very satisfied with postoperative scar appearance.

The statistical significance of the above presented percentages was subjected to chi-square test goodness of fit, to analyse the deviation of the answer values profile from the null hypothesis (equal frequency of each answer level). A non-significant *p*-value for an item means that the answers profile for that item significantly departs from equal frequency profile, and therefore that item capture a significant preference for the observed levels responses. The associated phi-Cramer index is the effect size measure of each chi-square test. The greater effect size index, the greater the intensity of preference for the chosen answer values for that question. The results are summarized in (Table III).

As can be seen, in all cases the profile of responses deviates statistically significant the null hypothesis (equal percentages for the four possible answers). Even more important than statistical significance is the phi-Cramer index of effect size, which was high and very high (over 0.40) in most situations. The lowest value of this index was for postoperative scar (0.29), which is characterized by an effect size only slightly exceeding the average. These data support the conclusion that these questionnaire indicators are relevant in for the level of QoL in mastectomized patients.

Satisfaction with self-perceived physical appearance

The questionnaire included items related to the comfort to wear clothes, bra included, and satisfaction with the perceived body image. Over half of the questioned patients said they were satisfied and very satisfied with the way clothes fit them (40.74% and 18.52%, respectively), while 25.93% were little satisfied and 14.81% very little satisfied

As to satisfaction with the self-perceived body image over 35% were very little or little satisfied, 25% were satisfied and 39.29% very satisfied physical. Over 40% of the patients who responded to the questionnaire said that wearing a bra is uncomfortable, and were very little satisfied (14.81%) and little satisfied (25.93%) with the need of wearing it, while 59.26% felt very comfortable wearing a bra.

Satisfaction with daily or leisure activities

The items aimed at identifying the level of satisfaction with the ability to cope with household, work-related and leisure activities, or ability to make shorter (weekend) or longer (vacations) trips. These variables were taken into account only related to performed surgery and its consequences. The answers were assessed on a scale of 1 to 4 (where 1=very little satisfied, 2=little satisfied 3=satisfied and 4=very satisfied) and the obtained results were distributed as follows:

1. Ability to cope with household activities, with a mean of 2.92 +/- 1.05: 7.14% of the patients were very little satisfied, 14.29% little satisfied, 42,86% satisfied and 32.14% very satisfied;
2. Ability to cope with work-related activities, with a mean of 2.53 +/- 1.37. Of the investigated patients 14.29% were not in employment, either because they were retired or unemployed. Of all employed patients, 10.71% were very little satisfied, 7.4% little satisfied, 42.86% satisfied and 25% very satisfied their ability to cope work duties.
3. Ability to perform leisure activities, with a mean of 2.7 +/- 1.97. A percentage of 7.14% of patients were very little satisfied, 10.71% are little satisfied, 42.86% satisfied and 28.57% very satisfied with their ability to cope with leisure activities. A percentage of 10.71% recognized they did no longer engage in activities they enjoyed.
4. Ability to make longer trips, such as holiday travels (with an average of 2.66 +/- 1.20) or shorter weekend trips (with an average of 2.96 +/- 1.34). Of the questioned patients 3.70% declared that they did no longer travel on vacation and 10.71% on weekends. The frequency of responses is shown in Table IV.

The significance of the percentages obtained to questions about daily and leisure activities was also subjected to chi-square test goodness of fit test (Table V).

As with physical state, the profile of answers to these questions had a statistically significance ($p<0.05$). Also the values of effect size index exceed the "large" effect threshold, showing that patients feel a strong positive effect of mastectomy in terms of physical state. However, although high, effect size levels for physical and leisure activities were significantly lower than those obtained for physical state (Table II). Also, it is interesting to note that satisfaction with the ability to perform short trips is noticeably higher (0.91) than the satisfaction with the ability to make long journeys (0.39).

Relationship Between Quality of Life and Depression

The level of depression was measured with BDI (Beck Depression Inventory), composed of 21 items related to symptoms of depression,

Table III: Results of chi-square goodness of fit test and effect size for answers on the physical state.

Items	Chi-square Goodness of fit	p	phi-Cramer Index*
Capacity for strenuous physical exercise	58.16	<0.001	0.97
Capacity for prolonged physical exercise	48	<0.001	0.88
Arm mobility	54.08	<0.001	0.93
Arm swelling after breast surgery	19.38	<0.001	0.56
Trunk mobility	93.7	<0.001	1.23
Postoperative scar	5.32	<0.05	0.29

*Thresholds for interpretation of phi-Cramer index:
0.10 = Little effect; 0.25 = Medium effect; 0.40 = Large effect

Table IV: Answers for the ability to travel.

Answers	Longer trips	Shorter trips
Very little satisfied	18.52%	7.14%
Little satisfied	14.81%	3.57%
Satisfied	33.33%	32.14%
Very satisfied	29.63%	46.43%

Table V: Results of chi-square goodness of fit test and effect size for answers related to daily and leisure activities.

Items	Chi-square Goodness of fit	p	phi-Cramer Index*
Ability to cope with household activities	32.14	<0.001	0.72
Ability to cope job activities	33.68	<0.001	0.74
Ability to perform leisure activities	34.19	<0.001	0.74
Ability to make trips	9.466	<0.05	0.39
Ability to make short trips	51.38	<0.001	0.91

*Thresholds for interpretation of phi-Cramer index:
0.10 = little effect; 0.25 = medium effect; 0.40 = large effect

such as hopelessness and irritability, perceptions of guilt or of being punished, or physical symptoms, such as fatigue, weight loss or loss of sexual desire. The study identified an average score of depression of 6.7 +/- 6.29.

The relationship between QoL and depression was studied on dimensions level and overall QoL scoring and on elementary-level indicators of the questionnaire. For the first level, the results are summarized in Table VI, which presents the Pearson r correlations between overall QoL score, its dimensions and BDI questionnaire score. The obtained results show that a low level of overall QoL score and its mental and somatic dimensions is associated with statistically significant higher levels of depression (Table VI).

For a better understanding of the relationship between QoL and depression the responses to QoL indicators were correlated with depression level. Table VII synthesizes the correlation between the level of depression (measured with BDI questionnaire) and satisfaction with physical state and functional capacity (measured with QoL-M questionnaire).

Given the small size of our study sample, it was not surprising that most correlations did not reach statistical significance. As a result, it was more relevant to interpret the correlation coefficients in terms of effect size. According to Cohen's recommendations [15], we refer to the following thresholds: r=0.01 – small, r=0.24 – medium, and r=0.37 – large.

The correlations in Table VII allow us the following conclusions:

Higher levels of satisfaction with postoperative scar are associated with lower levels of depression;

Feeling comfortable with wearing a bra is associated with lower levels of depression;

Ability to make longer trips correlates with lower levels of depression;

The other variables in the table have no relevant correlations with depression (Table VII)

Analysing the obtained correlations in Table VIII between depression and self-image in public places, we can draw the following conclusions:

Depression levels tend to be higher when the satisfaction with family relationships (spouse, children, and parents) is lower. Although negative, the correlations of depression with satisfaction with extra-family relationships (friends, colleagues, etc.) remain at a low threshold;

A higher level of depression is associated with a lower level of satisfaction with the way the clothes fit and her physical appearance with or without clothes;

Regarding sexual life, a higher level of depression is associated with a lower frequency of sexual intercourse and with a poor perception of femininity. No relevant correlations resulted in terms of libido, satisfaction and state of comfort and relaxation during intercourse;

A higher level of depression is associated with lower self-confidence in public places, less optimism and good mood, while self-confidence in the family environment showed no relevant correlation (Table VIII).

Discussions

Breast reconstruction is an important step in breast cancer management. Data in the literature demonstrate that the psychological effects of that procedure depend on a series of variables such as age, psychological traits, patient-surgeon relationship, and relationship with the partner, socioeconomic level, and type of breast reconstruction. The QoL of mastectomized patients can be considerably improved by selecting the most adequate strategy, both medically and psychologically.

Considering the safety proven by conservatory breast surgery procedures, with excellent cosmetic results, it is obvious that they lead to an improved body image, well-being and QoL of the patients and their entourage [16]. However, we are not entitled to neglect the depression symptoms that occur frequently in patients with mastectomy. The answer to this health problem can be provided by reconstructive surgery. Studies analysing the well-being in more and more specific pathologies prove that women who undertake plastic surgery after mastectomy have lower depression levels, as compared with patients who do not choose these procedures [17].

Besides the evolution of oncogenetics and the modern multidisciplinary medical collaborations, we presume that the prophylactic bilateral mastectomy rate will also increase in the years to follow. New genetic discoveries related to breast cancer motivate the risk patients and their close relatives to take regular tests and to have surgery if necessary [18]. It is a known fact that contralateral

Table VI: Pearson r correlations between QoL measured with QoL-M and BDI, calculated with the bootstrap technique (1000 resample).

Quality of life (QoL-M)	Depression (BDI)
Overall score	-0.35*
Somatic	-0.51*
Functional	0.03
Relationships	-0.19
Mental	-0.34*
Sexual	0

*p<0.05

Table VII: Correlations between depression and satisfaction with physical state and functional capacity (bold letters indicate the correlations that reached at least medium level).

Items	*r*	*p*
Postoperative scar	-0.5	0.001
How comfortable is it to wear a bra	-0.34	0.085
Ability to make longer trips (e.g. vacation / holiday)	-0.24	0.238
Capacity to perform strenuous exercise.	0.23	0.239
Capacity to perform prolonged exercise	0.15	0.486
Ability to cope with household activities	-0.08	0.671
Ability to perform job duties	-0.2	0.314
Ability to perform recreational activities	0.04	0.843
Ability to make shorter trips (e.g. on weekends)	-0.1	0.599
Trunk mobility (can you lean?)	-0.04	0.838
Arm mobility	0.1	0.607
Arm swelling after breast surgery (lymphedema)	0.04	0.814

Table VIII: Correlations between depression and satisfaction with self-image, relationship satisfaction and sexual life (bold letters indicate the correlations that reached at least medium level).

Items	*r*	*p*
Relationship with the husband (partner)	-0.37	0.062
Relationship with children	-0.31	0.128
Relationship with parents	-0.4	0.04
Relationship with friends	0.01	0.963
Relationship with co-workers	-0.16	0.424
Occasional relationship with various persons	-0.11	0.588
How you look in the mirror	-0.17	0.397
How do clothes fit	-0.27	0.169
Physical appearance	-0.4	0.036
Frequency of sexual relationships (intercourses)	-0.34	0.089
Sexual desire (libido)	-0.03	0.879
Sexual satisfaction	-0.08	0.688

prophylactic mastectomy is the most effective method of avoiding relapse in the case of hereditary breast cancer patients [19].

The moment of the reconstruction may vary from one particular case to the other. It was proven that the immediate breast reconstruction does not increase the risk of tumour recurrence [16,20]. The patients who were interviewed and asked to explain their reasons for choosing breast reconstruction explained that the procedure allows them to keep the discretion about their disease, to avoid a great shock after mastectomy and to go on with the life they used to live before [21]. For women with mastectomy, a visit to the plastic surgeon is the first step towards breast reconstruction. Health insurance covers these expenses, the patients being fully supported by the law. The therapeutic trajectory is changed due to the more and more advanced cancer treatments. The breast reconstruction can be a strong ally in the fight for survival [18].

There are multiple tools used for measuring the various dimensions of the quality of life. In the studies we analysed (Ireland, China, Australia, Brazil, Poland, France, Great Britain, Italia, Belgium, Sweden, Spain, USA or Canada) most authors admit the fact that a sensitive instrument is the one that measures the research indicator accurately and that its validation is a mandatory condition for the data to be relevant and valuable. The general questionnaires we came across in most researches were EORTC QLQ-C30 [16,17,22], MOS SF-36 [19], FACT-G [23], WHOQOL [24]. It is current practice, though, for researchers to use several questionnaires on the same group of patients, so that the study acquires a specific feature for different researched dimensions. Consequently, for the measurement of depression we apply the BDI [17] or HAD questionnaires [19,25], to which the investigated anxiety component is added, Body Image Scale (BIS) [25], for sexuality, Sexuality Activity Questionnaire (SAQ), for the impact of an event upon the created feelings, Impact of Event Scale (IES) and so on.

Although general tools are still widely used [20,26], specific tools are beginning to gain more and more interest, being conceived for different cultures or groups and targeted at patients. Such questionnaires, conceived for the breast cancer pathology in Europe and the USA are: EORTC-QLQ-B23, BREAST-Q or FACT-B [16,17,22,27]. They include items for dimensions such as: functional state, physical symptoms, emotional states, psychosocial impact, self-perception, sexual life or for the calculation of the global score. The application methods vary from direct application to correspondence by mail or by direct interviews with the patients.

In order to compare pre- or post-surgery results and assess the quality of life we need two or more patient groups. This aspect varied for each particular study. Some researchers compared the results from one group of patients with mastectomy to which they presented the questionnaire in parallel with other patients with similar descriptive data who had breast reconstruction surgery in the same period [16,17,19,21-25,27]. Other researchers prefer to apply the tool retroactively for the same investigated group for the periods before and after the reconstruction surgery, the data described being provided by the patients from memory. Finally, a third category of researchers evaluated the questionnaire for the same prospective cohort before the intervention and use the same instrument at different times after the surgery. All these methods have their supporters. However, it is obvious that, despite the fact that studies are not very frequently conducted and the patient groups are relatively small, similar outcomes seem to result from all these studies.

The results and conclusions of the studies presented in literature are often similar. Statistic data are spectacular most of the time, if we compare them with the attitude of the patients who we consult or treat regularly. Women who opt for conservative surgery for cancer, for instance, have the same or slightly lower quality of life scores as patients who had reconstruction [16]. However, both methods help in keeping the body image, with high scores on this segment, as compared to patients with mastectomy [23]. This conclusion allows us to refine upon the fact that female patients are confronted with a major negative emotional impact only when they have at least one amputated breast. This aspect can also be explained by the fact that conservative breast surgery is available especially to patients who discovered the disease in an incipient stage with early breast cancer, with higher chances for a long survival and who do not need an aggressive treatment subsequently. The satisfaction final score is higher in patients with breast reconstruction [23]. The fact that they receive or do not receive radiotherapy does not affect the similar groups (as far as the stage of the disease is concerned) [16]. Thus the patients benefit from a less traumatising rehabilitation during the subsequent treatment for breast cancer, with visible physical and psychosocial benefits.

Out of all patients who undergo breast reconstruction surgery the most satisfied are the ones opting for delayed breast reconstruction. The explanation provided by several authors is that they had more time to reflect upon their situation and to adapt to new conditions. The new breast was thus accepted much better. Moreover, the patients who lived for a while without a breast regained their self-esteem after the reconstruction surgery, which determined them to value the new breast even more. This feeling is not shared by women who have two identical breasts before the anaesthetics and have two new breasts when they wake up [24]. Brazilian women, for example, who undergo breast reconstruction surgery, have a high level of satisfaction in the psychic and social relationships fields. Breast reconstruction help patients with mastectomy to improve their quality of life, from a physical, psychic, social, self-perception and integrity viewpoint, their cognitive dimension remaining unaffected [22,24,28].

Patients are fully satisfied with the reconstruction surgery but their satisfaction does not depend on the variables related to their personal life. The longer the period left until the reconstruction is performed, the more their satisfaction decreases. As well as this, it was demonstrated that most of the patients feel that they are involved in choosing their reconstruction method [27]. The basic component that is modified after reconstruction in patients with mastectomy is the psychical one. In one of the studies in which depression was also measured it was shown that patients with a higher level of depression also had a lower quality of life level measured with both general questionnaires and questionnaires specific for breast cancer pathology [17]. Another extremely important component for our target group of patients is the sexual one. Patients usually avoid this subject [21]. Most probably the participants do not feel comfortable talking about this subject, which would be approached more easily on focus group meetings, where several people could open a debate on this subject.

More and more patients opt for immediate breast reconstruction, although the applicability of these procedures is still limited. The reasons can include the fear that planning this intervention might affect the subsequent oncological treatments, the lack of information and knowledge regarding reconstruction surgery and the patients' having other priorities besides reconstruction surgery. More research is needed in the field in order to enable clinicians to recommend and to make the right choices in their multidisciplinary therapeutic behaviour [20].

Patients should be informed about the possible side effects of the reconstruction surgery procedures. Providing fully detailed information is essential in order to create realistic expectations in the patients and enable them to have a good relationship with their surgeon. When women become aware that the techniques and materials available at the present time are less and less invasive, the number of patients who will opt for breast reconstruction surgery is likely to increase [22].

Women should be informed regarding the post-surgery psychological risk before they undergo surgery. This information must be considered by the multidisciplinary commissions during the counselling process of such a candidate [19]. Reconstruction surgery combined with psycho-spiritual therapy sessions has already begun to display promising results [28].

Conclusions

In our pilot study we have noticed higher levels of satisfaction regarding the post-surgery scar, which are associated with lower levels of depression; a feeling of comfort in wearing a bra is associated with lower depression levels; the ability to take longer trips is also associated with a lower level of depression, while the other variables did not have relevant correlations with depression.

Analysing the correlations between depression and self-perception in the public space, the following conclusion can be drawn: the level of depression tends to be higher when satisfaction within the family relationship (husband, children, parents, etc.) is lower. Depression is negatively correlated with the level of satisfaction within extra-family relationships (friends, co-workers, etc.): a higher level of depression is associated with a lower level of satisfaction regarding the way clothes fit and the physical appearance of the patient with or without clothes; as far as the sex life is concerned, a higher level of depression is associated with a less frequent sexual activity and a distorted perception of femininity.

There were no relevant correlations regarding the libido, satisfaction, the state of comfort and relaxation during the sexual activity; a higher level of depression is associated with a lower self-esteem, especially in the public space, with lower levels of optimism and happiness, while self-esteem within the family space does not present a relevant correlation.

The data obtained by the pilot study support the transition of QoL-M in the psychometric validation stage in order to draft the final version of the questionnaire. As well as this we have to mention the introduction of the zero response option (0=this question does not regard me) in the final version of the questionnaire, in order to avoid, as much as possible the refuse of the patients to answer certain questions to which they were actually unable to answer (for instance “relationship with your husband” when women filling in the questionnaire were either unmarried, divorced or widows).

This research shows that physical comfort-related aspects greatly influence the quality of life and the level of depression. The type of therapy after breast cancer diagnosis is associated with psychological parameters, meaning that chemotherapy is more frequently associated with depression than other forms of therapy (hormone therapy, radiation therapy or targeted therapy). No causal relationship have been identified between the time elapsed since surgery and age at the time of surgery, meaning that these two variables have no influence on the quality of life.

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Conflict of interests

The authors have no conflicts of interest to report.

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