

Quality of Life of Women with Breast Cancer-Emotional and Social Aspects

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Abstract Breast cancer is the leading cancer among women in most countries and significantly affects the quality of life of ill women. The aim of this study was to examine how the breast cancer affects their quality of life, especially emotional and social components of health, compared to healthy women in our community. The pilot study included 100 women with breast cancer and 100 healthy women aged 20-75, using EORTC QLQ-C30 version 3.0 questionnaire. Mean score of the global health status in women with breast cancer (29.5 ± 17.9) compared to healthy women (65.8 ± 24.7) was significantly lower in all age groups. Almost 2/3 women with breast cancer were tense and 3/4 worried. More than 2/3 ill women were irritable and depressed with a significantly lower score on the scale of emotional and social functioning compared with healthy women. Over 2/3 ill women said that their health status or treatment had an impact on their family and social life with statistically significant difference compared to 1/10 women in the control group. Data on quality of life for women with breast cancer are essential for prevention of particular adverse effects especially in emotional and social functioning.

Keywords: women, quality of life, breast cancer

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1. Introduction

Breast cancer is currently the leading cancer among women in 145 countries worldwide. The incidence rates vary from 19.3 per 100,000 women in Eastern Africa to 89.7 per 100,000 women in Western Europe. Of all malignancies in women, breast cancer in Republic of Srpska (B&H), by incidence and mortality, is at the first place. In 2008 year, in Republic of Srpska (B&H) the incidence was 1100 (25.9%) with standardized global rate ASR (W) 36.5 per 100 000 population and the mortality 399 (17%) with standardized global rate ASR (W) 22.7 per 100 000 population [1].

Technological advances and new diagnostic and treatment methods resulted in higher survival rate of women with breast cancer, and the result is a growing interest in assessing the quality of life of these women [2,3].

The concept "health related quality of life" - HRQoL arose from understanding that health is very important, if not the most important requirement for a good quality of life [4]. The concept "quality of life" although often used, is difficult to define. Quality of life depends on the subjective understanding of health and disease. It is multi-dimensional and in accordance with the definition of Health of the World Health Organization (WHO), includes physical, mental and social health, cognitive and sexual functioning, work ability and life satisfaction [5].

One of the major factors contributing to the quality of life is social support of the elderly, as well as of the ill people [6,7,8]. Social support is shown often as a significant predictor of quality of life. For example, Lewis, Manne, Duhamel, Johnson Vickburg, Bovbjerg, Currie, Winkel, and Redd [10], found in their studies that the intrusive thoughts in patients with low social support are a significant factor for quality of life - in a way that people with pronounced intrusive thoughts have a lower quality of life. In patients who in turn have high social support, intrusive thoughts were not a significant predictor of quality of life, which clearly illustrates the protective effects of social support in stressful situations. The disease is the most common cause of problems in interpersonal relationships, stigmatization, and tolerance towards other diseases, dependence or as an ever-present threat in family [11]. Social domain often involves the impact of disease on the individual, social role and perception of the usefulness of social support affects and it involves for the emotional component that includes psychological functioning, including both positive and negative indicators of mood (e.g., anxiety, depressive symptoms, distress) and the limitations due to emotional problems [12,13]. Diagnosis of chronic disease can produce a strong emotional distress in the patient and the family [14,15].

A distress extends from the sense of vulnerability, sadness and fear to the problems that may incapacitate us, such as depression, anxiety, panics, social isolation, and existential and spiritual crisis [16].

The aim of this study was to examine how the breast cancer affects the quality of life of women, especially in

the emotional and social components of health compared to women without this disease in our community.

2. Methods

The research was conducted as a pilot study among 100 women treated for breast cancer, all members of the association of women with breast cancer from Banja Luka. Control group consisted of 100 healthy women from the professional association of nurses. In 2011 year, research was based on a questionnaire of the European Organization for Research and Treatment of Cancer (EORTC) quality of life of patients with cancer QLQ-C30 (version 3.0.) with 30 questions. All scales and single-item measures are ranged score of 0-100. Higher scores in the rankings are the result of presenting a higher level of response. Such a high score with a functional scale represents a high / healthy level of functioning, a high score for the global health status / QOL represents a high quality of life-QOL, as well as a high score for a symptom scale / item that represents a high level of symptoms / problems [17]. A higher score represents a higher ("better") level of functioning, or higher ("worse") level of symptoms [18]. Criteria for inclusion in the study were: age persons from 20-75 years, members of associations and voluntary participation. All participants were given a questionnaire with an explanation of how to fill and also they also signed consent on anonymity of the survey, and they were given the option of refusing to participate in the survey without explanation. Analysis of the questionnaires after the survey was performed according to the manual,

"Guidelines for determining the quality of life in EORTC Clinical Trials' Group of the European Organization for Research and Treatment of Cancer EORTC quality of life QoQ [19]. Depending on their nature, description of the parameters of interest was performed by means of descriptive statistics: frequency, percentage, means (average), median, standard deviation (SD) and range.

Testing was performed with a significance level $p < 0.05$ using Friedman test and the Wilcoxon signed rank test for monitoring the difference between the scores of the scales within the same group, while with Pearson χ^2 test, Fisher exact test and Asymptotic Wilcoxon rank sum test were used for differences between the groups. Data were analyzed with statistically programs: SPSS for Windows software (SPSS13.0, Inc., Chicago, Illinois, USA) and Microsoft Excel (11. Corporation Microsoft, Redmond, WA, USA), representing the statistical parameters in the tables.

3. Results

The sample consisted of 100 women who are suffering from breast cancer and 100 women without the disease (control group of healthy women) aged 20-75 years old. All 200 women answered the questionnaire, however, due to incomplete responses, 5 questionnaires were excluded in the control group. Mean average age of the affected women was 51.8 (± 23.11), and 40.2 (± 12.3) for the women in the control group. (Table 1).

Table 1. Distribution of sample by age

Age	Group I women with breast cancer		Group II healthy women		TOTAL	
	n	%	n	%	n	%
≤ 30	4	4.0	29	14.9	29	14.9
31-49	43	43.0	89	45.6	89	45.6
50-59	32	32.0	52	26.7	52	26.7
60-69	13	13.0	17	8.7	17	8.7
≥ 70	8	8.0	8	4.1	8	4.1
TOTAL	100	100.0	95*	100.0	195	100.0
	Mean=51.8 (± 11.23) Min 28 Max 77		Mean=40.2 (± 12.3) Min 20 Max 68			

* Five questionnaires excluded from research

Table 2. Mean scale Global health status, health and quality of life of the surveyed women during the past week

Global health status				
I group- women with breast cancer	N 100	Mean 29.5 (±17.9)	Min 0	Max 75
II group-healthy women	N 95	Mean 65.8 (± 24.7)	Min 0	Max 100
	W=1209.5 p=0.0 (1.53 e-19)			
Health during the past week				
I group-women with breast cancer	N 100	Mean 2.71(±1.1)	Min 1	Max 6
II group-healthy women	N 95	Mean 4.9 (±1.6)	Min 1	Max 7
	W=1276 p=0.0 (p=2.56 e-19)			
Quality of life during the past week				
I group- women with breast cancer	N 100	Mean 2.8 (±1.2)	Min 1	Max 5
II group-healthy women	N 95	Mean 4.9 (±1.5)	Min 1	Max 7
	W=1375 p=0.0 (p=3.50 e-018)			

In the scale score from 0 to 100, mean average score of the global health status in a group of women with breast cancer was 29.5 (± 17.9), significantly lower than the

mean value in the control groups of women 65.8 (± 24.7) in all ages. As for the mean average score of the global state of health during the last week in all age groups, a

statistically significant difference in mean score for ill women (2.71 ± 1.1) compared to the control group of women (4.9 ± 1.6) ($p < 0.01$) was found. Mean score for the quality of life for the last week in women with breast cancer in all age groups (2.8 ± 1.2) was lower with statistically significant difference compared to the mean score in the control group of women (4.9 ± 1.5). ($W = 1375$ $p < 0.01$). (Table 2).

Almost 2/3 women with breast cancer (40% quite a bit and 23% very much) said they were tense, and almost 3/4 of them (quite a bit 42% and very much 29%) were

worried. More than 2/3 of ill women (quite a bit 43% and very much 26%) were irritable and depressed (39% quite a bit and 26% very much). The symptoms in the emotional scale were widespread at ill women with a statistically significant difference compared to the control group of women. Mean values of the emotional scale scores in women with breast cancer (35.58 ± 25.15) were lower than in the control group of women (70.7 ± 24.85), with a statistically significant difference ($W = 1616$, $p < 0.01$). (Table 3).

Table 3. Answers of women with breast cancer and the control group of women to the questions related to emotional function

Questions	Answers										
	*group	Not at all		A little		Quite a Bit		Very much		TOTAL	
		n	%	n	%	n	%	n	%	n	%
Did you feel tense?	I	2	2	35	35	40	40	23	23	100	100
	II	31	33	43	45	14	15	7	7	95	100
Fisher Exact test p=0.0 (p=2.79 e-11)											
Did you worry?	I	2	2	27	27	42	42	29	29	100	100
	II	28	29	43	45	19	20	5	5	95	100
Fisher Exact test p=0.0 (p=2.85e-12)											
Did you feel irritable?	I	2	2	29	29	43	43	26	26	100	100
	II	35	37	42	44	11	12	5	5	95*	100
* two missing responses Fisher Exact test p=0.0 (p=1.15e-15)											
Did you feel depressed?	I	5	5	30	30	39	39	26	26	100	100
	II	44	46	38	40	9	10	3	3	95*	100
* two missing responses Fisher Exact test p=0.0 (p=1.79e-16)											
TOTAL	I	Mean score =36.58 (±25.15)									
	II	Mean score =70.70 (±24.85)									
Wilcoxon rang sum test W=1616 p=0.0 (p=9.44e-16)											

*I group- women with breast cancer; II group- healthy women

Mean values of the scale scores social functions were significantly lower in women with breast cancer (37 ± 27.6) compared to the control group of subjects (82.3 ± 23.8). The health condition or treatment has impact on their family life, said the more than 2/3 of ill women (quite a bit 46% and 26% very much) with a statistically significant difference compared to 12% of women (10%

quite a bit and 2% very much) in the control group of women.

More than 2/3 of ill women (quite a bit 45% and very much 24%) said that their physical condition or medical treatment had impact on their social activity, which was a statistically significant difference compared to 1/10 in the control group of women (quite a bit 9% and very much 2%). (Table 4).

Table 4. Answers of women with breast cancer and the control group of women to the questions related to social function

Questions	Answers										
	*group	Not at all		A little		Quite a Bit		Very much		Total	
		n	%	n	%	n	%	n	%	n	%
Has your physical condition or medical treatment interfered with your family life?	I	6	6	22	22	46	46	26	26	100	100
	II	59	62	24	25	10	10	2	2	95	100
Fisher Exact test p=0.0 (p=2.61 e-21)											
Has your physical condition or medical treatment interfered with your social activities?	I	7	7	24	24	45	45	24	24	100	100
	II	56	59	27	28	9	9	2	2	95*	100
*own missing responses Fisher Exact test p=0.0 (p=1.62e-19)											
TOTAL	I	Mean score=37 (±27.6)									
	II	Mean score=82.3(±23.8)									
Wilcoxon rang sum test W=1145.5 p=0.0 (p=5.92e-21)											

*I group- women with breast cancer; II group- healthy women

Table 5. Parameters and scores for the functioning scale of healthy women and women with breast cancer

Scale	Parameters	QLQ.C30. score Women with breast cancer	**QLQ.C30. score Healthy women
EF Emotional functioning	N	100	95
	Mean (SD)	36.58 (± 25.15)	70.89 (± 24.68)
	Median (Range)	33.33 (0-83.33)	75 (0-100)
SF Social functioning	N	100	95
	Mean (SD)	37.00 (± 27.58)	82.8 (± 23.37)
	Median (Range)	33.33 (0-100)	100 (0-100)

** Friedman Test; $\chi^2=28.069$; $d f=1$; $p=0.0$ ($p=1 \text{ e-}05$)

In the group of women with breast cancer, the mean scores for emotional and social functioning were with a statistically significant difference ($\chi^2_{24} = 28.069$, $d f = 4$, $p < 0.01$) lower than in the control group of women. (Table 5)

4. Discussion

In our study, the mean scores for emotional and social functioning were significantly lower in the group of women with breast cancer in compared with the control group of healthy women.

In the study of Sammarco A et al. conducted at private hospitals in Staten Island, Brooklyn, and Manhattan and the American Cancer Society units of Staten Island, Brooklyn, and Queens, New York, 89 Latina women breast cancer survivors' ages 30-86 years were selected. Participants completed a personal data sheet, the Social Support Questionnaire, the Mishel Uncertainty in Illness Scale-Community form, and the Ferrans and Powers Quality of Life Index-Cancer Version III at home and returned the questionnaires to the investigators via postage-paid envelope. Perceived social support, uncertainty, and QOL. A significant positive correlation was noted between perceived social support and total QOL. A significant negative correlation was found between uncertainty and QOL. Social support predicted 15.1% of QOL variance, and uncertainty predicted 10.4% of additional QOL variance. Together, these two variables predicted 20.5% of QOL variance. Perceived social support and uncertainty are playing a pivotal role in managing or maintaining QOL in Latina breast cancer survivors. Social support, uncertainty, and QOL are essential variables that should be acknowledged when delivering health care to Latina breast cancer survivors. Nurses cognizant of Latina breast cancer survivors' issues and concerns in areas of social support and uncertainty are in a unique position to enhance QOL [20].

The study from Turkey was designed to analyze the relationship between psychosocial adjustment and hopelessness in a group of women with breast cancer. The subjects were 90 women with breast cancer were recruited at Ege University School of Medicine Department of Radiation Oncology Nurse Counsellor Unit and Tulay Aktas Oncology Hospital Outpatient Chemotherapy Unit. The mean age of the women was 49.4 ± 11.0 . It was found that the level of psychosocial adjustment of 63.3% of the women was 'poor'. A positive relationship was determined between PAIS-SR mean score and BHS mean score of the women with breast cancer ($r = 0.731$, $p < 0.01$). It was observed that as the psychosocial adjustment worsens the level of hopelessness of the women increases. In the light of this relationship, it was concluded that the attempts to increase hope and therefore the support for the psychosocial adjustment of patients should play a vital role in increasing their quality of life [21].

In the studies in Sweden a consecutive sample of 39 women was followed by means of repeated thematic interviews about how they lived their lives, from the end of radiation therapy to a point four years later, i.e. 4.5-5 years post diagnosis. Four different groups of women were emerged. Largely, the first group evaluated, showed that cancer initiated transformation of their lives in a positive way. The breast cancer helped them that depart from a career treadmill or to positive interpersonal experiences. In the second group the cancer and its treatment seemed to pass without marked traces. The cancer made a difference for the third group, but both in positive and negative ways. A different life perspective or improved relationships were weighted against troublesome side effects from treatment. Finally, in the fourth group a bodily decline due to side effects and other

health problems was predominant and this obstructed their chances of living a good life. The examinees showed that being diseased by breast cancer has different impacts depending on how the woman lives her life - it is very much a matter of transition in a life context. The results were furthermore discussed in relation to adaptation and coping theory [22].

With breast cancer-specific quality-of-life questionnaire (QLQ) module the European Organization for Research and Treatment of Cancer (EORTC) QLQ-C30 were tested in 170 Dutch, 168 Spanish, and 158 American cancer patients at two points in time. The timing for the Dutch and Spanish patients was before and during treatment with radiotherapy or chemotherapy. For the American patients, the questionnaire was administered at admission at the breast clinic and 3 months after the first assessment. Multitrait scaling analysis confirmed the hypothesized structure of four of the five scales. Cronbach's alpha coefficients were, in general, lowest in Spain (range; .46 to .94) and highest in the United States (range; .70 to .91). On the basis of known-groups comparisons, selective scales distinguished clearly patients differing in disease stage, previous surgery, performance status, and treatment modality, according to expectation. Additionally, selective scales detected change over time as a function of changes in performance status and treatment-induced change. These results lend support to the clinical and cross-cultural validity of the QLQ-BR23 as a supplementary questionnaire for assessing specific quality-of-life issues relevant to patients with breast cancer [23].

In our study, nearly 2/3 of women with breast cancer are said they were tense, and almost 3/4 of them were worried. More than 2/3 was irritable and depressed, and means score for the emotional and social scale in women with breast cancer were significantly lower than in control groups women.

In the study of the quality of life (QOL) measured by the Functional Assessment of Cancer Therapy (FACT) questionnaire, among urban ($n = 277$) and non-urban ($n = 323$) breast cancer survivors and women from the general population ($n = 1140$) in Queensland, Australia. Population-based samples included women of breast cancer survivors 12 months post-diagnosis aged < 75 years and similarly-aged women from the general population between 2002 and 2007. Using the new outcome measure of QOL relative to age and residency-matched women from the general population, depending on the specific QOL scale, between 17.2% and 32.8% of all women with breast cancer reported clinically lower QOL 12 months following diagnosis than age- (within five years) and residence-matched women without the disease. A further 17.5%-48.5% of women reported similar QOL, while the remainder (19.8%-65.3%) reported clinically better QOL. The subscales with the highest proportions below the norm were emotional (32.8%) and physical (29.3%) well-being, and overall QOL (26.2%) [24].

The quality of life (QOL) was assessed in a population-based cohort of 387 women with breast cancer from Saarland (Germany) using the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core 30 (EORTC-QLC30). Functional and symptom QOL-scores were compared with published reference data from the general population. Breast cancer

survivors and women from the general population reported similar scores of global health/QOL. However, major deficits among women with breast cancer were found, for emotional, social, role and cognitive functioning. Age-specific comparisons between breast cancer patients and the reference population revealed that these deficits are predominantly found in younger age groups. The overall QOL of life of breast cancer survivors one year after diagnosis is comparable to women from the general population. However, some differences exist that seem to predominantly affect younger women who show a poorer QOL in certain domains [25].

In our study, mean values of the total assessment of health status are statistically significantly lower in the group of patients with breast cancer (29.5) than in the control groups of women (65.8) in all age groups.

Prospective longitudinal health-related quality of life (QOL) data from 161 women newly diagnosed with breast cancer were compared to age-adjusted mean QOL scores from a general female population (n=949). In addition, multiple factors (demographic, personality trait, participation in treatment decision-making, information satisfaction, and medical data), which previous research has indicated affect the QOL of breast cancer patients, were simultaneously investigated in a multivariate model, in order to determine which of these variables have the strongest influence on QOL one year after surgery. QOL was evaluated with the EORTC QLQ-C30 at time of diagnosis, three- and 12-months postoperatively. Women with breast cancer scored significantly lower on emotional, cognitive, and social functioning ($p < 0.01$) at time of diagnosis compared to the general female population, and continued to score lower on cognitive ($p=0.008$) and social ($p=0.009$) functioning one-year after surgery. In addition to the initial QOL, breast conservation surgery was predictive of better physical functioning ($p=0.01$) and body image ($p < 0.0001$), while chemotherapy was predictive for poorer role functioning ($p=0.01$) one year after surgery. Dispositional optimism was predictive for better emotional ($p=0.003$) and social functioning ($p=0.01$) one year after surgery. At time of diagnosis and throughout the post-diagnosis period, dispositional optimism was associated with better QOL and fewer symptoms [26].

5. Conclusion

In most studies, as in our study, the mean scores of the global health status in a groups of women with breast cancer (29.5) were statistically significantly lower than in the control groups of women (65.8) of all ages.

Almost two thirds of women with breast cancer were tense and irritable, and almost $\frac{3}{4}$ of them were worried. Medical condition or treatment had considerably more impact on family and social life of women with breast cancer with statistically significant difference compared to the control group women. Mean values of scores of emotional and social scales were significantly lower in ill women than in the control group of women.

Research conducted regarding monitoring the quality of life of women with breast cancer have shown that in order to provide a better emotional and social functioning, it is necessary to ensure better support to the whole family, the

environment and the community of women living with breast cancer.

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