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ORIGINAL ARTICLE

Satisfaction with life among women with breast cancer – selected demographic and social factors

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Abstract

Objective. The aim of the study was evaluation of satisfaction with life among women ill with breast cancer, with consideration of selected demographic and social factors.

Materials and method. In the study participated 121 patients from the Sub-Carpathian Oncology Centre in Brzozów, Poland, who had undergone surgical treatment due to breast cancer. The method of a diagnostic survey was used. The research instruments were an author-constructed questionnaire and the Satisfaction with Life Scale.

Results. Women who received surgical treatment due to breast cancer evaluated their satisfaction with life on a mediocre level. Younger patients had a lower satisfaction with life than those who were older. Women living in urban areas evaluated their satisfaction with life in more positive terms than rural women. In turn, education level, marital status and material standard had no effect on the level of satisfaction with life among the women in the study.

Conclusions. According to the SWLS, women with the diagnosis of breast cancer obtained a mean result of 5.64 sten scores Younger women evaluated their satisfaction with life in more positive terms than those who were older. Women who lived in urban areas obtained a considerably higher result according to the SWLS, compared to rural inhabitants. Marital status, education level, material standard and occupational activity of the women were insignificant in the respondents' evaluation of satisfaction with life.

Key words

breast cancer, demographic and social factors, satisfaction with life

INTRODUCTION

Breast cancer is the most commonly diagnosed malignant cancer in women. At present, more than 1,700,000 new cases of this cancer are diagnosed worldwide; this constitutes ¼ of all malignant cancers diagnosed in women [1, 2]. During the last 30 years in Poland, the number of cases of breast cancer has doubled. Annually, this type of cancer is diagnosed in more than 17,000 Polish women, and simulation data show that within several subsequent years this number will exceed 20,000 cases [3].

After the diagnosis of breast cancer, the women are covered with a complex and long-term treatment, which often results in various limitations in their daily functioning. The sole disease entity, as well as the number and quality of problems related with it, on the one hand, and the effectiveness and level of their solving on the other, are of primary importance for the perception of the level of satisfaction with life of these women. This is an essential factor for wellbeing and an important element of health. Satisfaction with life is defined as an overall assessment of the quality of life performed based on specified criteria. Evaluation of satisfaction with life is the result obtained based on comparison of own life situation with the adopted standards [4]. Satisfaction with life depends on many factors, and their precise recognition may contribute to the improvement of life comfort of a patient with the diagnosis of a cancerous disease [5]. At present, the importance of satisfaction with life and quality of life is emphasized, placing them nearly on a par with the outcomes of treatment [6]. Considering the fact that breast cancer affects the level of functioning of women in the biological, psychological, and social spheres, satisfaction with life should be the subject of epidemiological studies and scientific analyses. Satisfaction with life is the determinant of the quality of life of ill women and mobilizes them for their struggle with the disease [7].

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OBJECTIVE

The aim of the study was evaluation of the satisfaction with life among women with the diagnosis of breast cancer, considering selected social and demographic characteristics.

MATERIALS AND METHOD

The study comprised 121 women who had undergone surgical treatment for breast cancer in the Sub-Carpathian Oncology Centre in Brzozów, Poland. The criterion of qualification for the study was voluntary consent after previous explanation of the aim and course of the study. The study was conducted by the method of a diagnostic survey, using an author-constructed questionnaire and the Satisfaction with Life Scale (SWLS) by Diener et al., Polish adaptation by Juczyński [4, 8].

Satisfaction with life as evaluated using the SWLS scale is the reflection of satisfaction with life conditions and own achievements. The SWLS may be applied in adults, both healthy and ill. The Scale consists of 5 statements expressing satisfaction with life. The respondents determine the level of acceptance of individual statements according to a 7-degree scale of the values from 1 – 'I definitely do not agree' to 7 – 'I definitely agree'. The evaluations obtained, after summing-up, provide an overall result determining the degree of satisfaction with life. The range of scores on the SWLS is from 5–35. The results of the SWLS may be compared with mean results in the group of the healthy or the ill, and also converted into standardized units. For the needs of interpretation, the sten scale is applied. The values 1–4 sten scores evidence low satisfaction with life, 5–6 sten scores – mediocre satisfaction, whereas 7–10 sten scores show a high satisfaction with life.

The author-constructed questionnaire contained 35 items grouped into 4 domains of problems: demographic data, social situation, past health history, and current health situation and its conditioning. Two groups of problems were used for the purpose of this study, i.e. demographic data and the data concerning the social situation of the patients.

The results of the study obtained were subjected to statistical analysis using the software SPSS v. 17.0. The p values $p<0.05$ were considered statistically significant. For the purposes of analysis, nonparametric tests were used, Mann-Whitney U test (for 2 samples), and Kruskal-Wallis test (for more than 2 samples). The above-mentioned tests were applied where the conditions for the use of parametric tests were not satisfied.

RESULTS

In the examined group, the percentage of women aged over 45 was higher than those aged 25–45 (68.6% and 31.4%, respectively). The majority of the women (63.6%) were in a marital or partnership relationship. The remaining respondents (36.4%) were qualified into the following categories of marital status: never married, divorced, and widowed. More than a half of the women in the study (52.9%) had secondary school and vocational education, followed by a relatively large group (31.4%) of respondents who had university education. The lowest percentage of women (15.7%) had primary school or junior high school education. The majority of respondents (60.3%) lived in urban areas, while the reminder (39.7%) were rural inhabitants. Women ill with breast cancer most frequently evaluated their material standard as being on a satisfactory level – 43.8%, while 36.4% of the respondents mentioned that their material standard is good. The smallest group – 19.8% of women, indicated a very good material standard. Occupational activity of the women in the study was assessed during 2 periods – prior to diagnosis of the disease, and after treatment. Before the diagnosis of breast cancer, the vast majority of women (73.6%) were occupationally active, while the reminder (26.4%) were non-active occupationally. After the treatment applied, the percentages of women according to occupational activity changed: 48.8% of respondents continued occupational activity, whereas 51.2% of the women were non-active occupationally (Tab. 1).

Table 1. Social and demographic characteristics of examined group

Variable	Category	N	%
Age	25–45 yrs	38	31.4
	over 45 yrs	83	68.6
Marital status	not in a marital/partnership relationship	44	36.4
	in a marital/partnership relationship	77	63.6
Education	primary school/junior high school	19	15.7
	vocational/secondary school	64	52.9
	university	38	31.4
Place of residence	rural area	48	39.7
	urban area	73	60.3
Material standard	very good	24	19.8
	good	44	36.4
	satisfactory	53	43.8
Occupational activity prior to diagnosis of the disease	occupationally active	89	73.6
	occupationally non-active	32	26.4
Current occupational activity	occupationally active	59	48.8
	occupationally non-active	62	51.2
Total		**121**	**100**

The respondents' overall life satisfaction was 20.67 (raw result), median value 21, and standard deviation 4.63. The SWLS on the sten scale was 5.64 (Me – 6.00, SD – 1.66). For the women aged 25–45, satisfaction with life was 21.57, and was significantly higher, compared to the result 20.07 obtained by women aged over 45 ($p=0.042$). Despite the fact that the SWLS raw result indicated statistically significant differences according to age, the mean and median values showed small differences. After conversion of values into the sten scale no statistically significant relationship was found ($p=0.088$).

No significant differences in satisfaction with life were observed according to the marital status of the examined women. The values obtained by women in a relationship were similar to those obtained in other categories of marital status (20.48 vs. 20.78).

The women who had vocational and secondary school education presented the highest level of satisfaction with life – 20.86 (5.73 sten scores), only a slightly lower result – 20.82 (5.66 sten scores) was noted among women possessing university education, whereas the lowest SWLS value – 19.74 (5.26 sten scores) was obtained by women with primary school and junior high school education. The above-presented data indicate that the level of education exerted no significant effect on the level of satisfaction with life of the examined women.

It was confirmed that the level of satisfaction with life varied according to the women's place of residence. A considerably higher level of satisfaction with life was observed among respondents living in urban than rural areas. For urban women, this value was 22.04 (6.15 sten scores) vs. 18.56 (4.85 sten scores) for rural women, this relationship being highly significant statistically ($p<0.001$).

The level of satisfaction with life among the examined women with consideration of their material standard did not significantly differ. The respondents who evaluated their material standard as very good obtained the SWLS result of 20.71 (5.58 sten scores). A slightly higher value – 20.75 (5.70 sten scores) was obtained by women who declared that their material standard is good, while for those who indicated that

Table 2. Satisfaction with life among women with breast cancer according to selected demographic and social factors

Variable	Category	SWLS raw result					SWLS (STEN)			
		N	M	Me	SD	p	M	Me	SD	p
Age	25–45	38	21.97	22	4.29	0.042	6.03	6.00	1.59	0.088
	over 45	83	20.07	20	4.68		5.46	5.00	1.68	
Marital status	not in a marital/partnership relationship	44	20.48	20	4.59	0.608	5.55	5	1.63	0.511
	in a marital/partnership relationship	77	20.78	21	4.68		5.69	6	1.69	
Education	primary school/junior high school	19	19.74	19	3.57	0.533	5.26	5	1.24	0.527
	vocational/secondary school	64	20.86	21	4.86		5.73	6	1.71	
	university	38	20.82	21	4.76		5.66	6	1.77	
Place of residence	rural	48	18.58	18	3.51	0.000	4.85	5	1.18	0.000
	urban	73	22.04	23	4.79		6.15	6	1.74	
Material standard	very good	24	20.71	22	3.9	0.920	5.58	6	1.38	0.969
	good	44	20.75	20	4.92		5.7	5	1.79	
	satisfactory	53	20.58	21	4.77		5.6	6	1.7	
Occupational activity before diagnosis of the disease	Yes	89	20.65	21	4.72	0.988	5.66	6	1.68	0.702
	No	32	20.72	20	4.44		5.56	5	1.64	
Present occupational activity	Yes	59	21.2	22	4.49	0.132	5.8	6	1.63	0.189
	No	62	20.16	20	4.74		5.48	5	1.7	
Total		**121**	**20.67**	**21**	**4.63**		**5.64**	**6**	**1.66**	

Table 3. SWLS and age groups

Age *In most ways my life is close to my ideal*		Statements in SWLS scale				
		The conditions of my life are excellent	*I am satisfied with my life*	*So far I have gotten the important things I want in life*	*If I could live my life over, I would change almost nothing*	
25–45	N	38				
	M	3.63	3.58	4.63	5.03	5.20
	Me	4.00	4.00	5.00	5.00	5.00
	SD	1.03	0.89	0.97	0.915	1.11
over 45	N	83				
	M	3.13	3.19	4.45	4.72	4.58
	Me	3.00	3.00	5.00	5.00	5.00
	SD	1.22	1.06	1.00	0.94	1.20
Total	N	121				
	M	3.29	3.32	4.50	4.82	4.74
	Me	3	3	5	5	5
	SD	1.18	1.03	0.99	0.94	1.19
Mann-Whitney U test		1230.5	1220.5	1431.0	1373.0	1195.5
Significance (2-tailed)		0.045	0.038	0.391	0.230	0.028

their material standard is on a satisfactory level the SWLS value was 20.58 (5.60 sten scores).

Occupational activity is one of the elements providing the possibility of self-fulfilment, and therefore may determine the level of satisfaction with life. Before the diagnosis of breast cancer, satisfaction with life among occupationally active women was 20.65 (5.66 sten scores), while among those non-active occupationally it was slightly higher – 20.72 (5.56 sten scores). These values were similar. After treatment, occupationally active women evaluated their satisfaction with life on the level of 21.2 (5.80 sten scores), whereas those occupationally non-active reported this satisfaction on a lower level – 20.16 (5.48 sten scores). This difference was also statistically insignificant (Tab. 2).

It was confirmed that the replies to the questions diagnosing satisfaction with life differed according to the age of the examined women. Increasingly more often, satisfaction with life measured by each indicator of the SWLS scale was higher among younger respondents (25–45), compared to the subpopulation of women in the second, older age category (>45). It should be emphasized that the greatest differences were found with respect to answers obtained for 3 statements in the SWLS scale. These differences concerned the following statements: '*In most ways my life is close to my ideal'* (p=0.045); '*The conditions of my life are excellent'* (p = 0.038); '*If I could live my life over, I would change almost nothing'* (p = 0.028). With respect to the remaining two statements, i.e. '*I am satisfied with my life'* and '*So far I have gotten the important things I want in life*', the differences obtained between mean values were statistically insignificant (Tab. 3).

The subsequent characteristic differentiating the level of satisfaction with life was the place of residence of the women treated for breast cancer. The respondents living in rural areas obtained lower results in the SWLS scale than those who were urban inhabitants. It is noteworthy that in each category of the scale, place of residence was the characteristic significantly differentiating the categories of respondents' replies. The p value for individual statements remained on the level p=0.001 and p=0.000. (Tab. 4).

The level of satisfaction with life among women ill with breast cancer significantly differed statistically according to the respondents' age and place of residence. According to age, the p value obtained indicated such a difference only in the raw result (p=0.042). Considering the place of residence, significant differences in the evaluation of the level of satisfaction with life between women living in rural and urban areas were observed both in the sten scale and raw results.

DISCUSSION

Subjective sense of life, defined as a positive evaluation of own health, is the manifestation of satisfaction with life. To this evaluation contribute emotional reactions to events, as well as satisfaction and fulfilment. Satisfaction results from the experience of experienced emotions and low level of negative moods. Due to this, an individual experiences great satisfaction with life [9].

In own study, satisfaction with life among women diagnosed with breast cancer was 20.67 (raw result), and according to the sten scale – 5.64. In the study by Tate and Forchheimer, satisfaction with life of patients with breast cancer was 23.2 [10]. Koc et al. showed that the SWLS in women subjected to chemotherapy and surgical treatment was 18.8 [11]. In the study by Han et al., women who had undergone breast conserving surgery had a higher level of satisfaction with life and a higher quality of life, compared to the patients who had undergone mastectomy and/or breast reconstruction surgery [12]. Similarly, in the study by He et al. it was observed that patients who had undergone breast conserving surgery evaluated the quality of life higher than those after radical mastectomy [13]. Elder et al. proved that women after mastectomy due to breast cancer, and within a short time had undergone breast reconstruction surgery, evaluated their satisfaction with life on the same level as healthy women [14].

In own study, women aged 25–45 evaluated their satisfaction with life higher than those aged over 45. Satisfaction with life, irrespective of respondents' age, significantly differed statistically; however, only with respect to the raw result, while no such relationship was observed according to the sten scale. In turn, in the study by Bettencourt et al. older women showed a higher level of satisfaction with life [15].

In the presented study, the women differed with respect to evaluation of satisfaction with life according to age. Women in the younger age group evaluated their satisfaction with life in more positive terms, compared to those who were older; however, no statistically significant differences were observed. Similarly, the differences according to marital status of the ill women were insignificant in the assessment of satisfaction with life. The values according to the SWLS obtained by women who were in a relationship and those in other categories of marital status, were similar. Also, the respondents' level of education had no significant effect on the level of satisfaction with life; nevertheless, a lower level of education was a determinant of the lowest level of satisfaction with life (19.74 – raw result, 5.26 sten scores). In the study by Bettencourt et al., better educated women, those who were married, and who had no experiences of the death of close persons within the last year, had a higher level of satisfaction with life [15].

In the presented study, it was confirmed that the level of life satisfaction of the examined women significantly differed statistically according to the place of residence. In the group of women living in urban areas the SWLS was 22.04 (6,15 sten scores), whereas among rural women this value was considerably lower – 18.56 (4.85 sten scores). No statistically significant differences in the level of satisfaction with life were noted according to the material standard of

Table. 4. SWLS and place of residence

Place of residence *In most ways my life is close to my ideal*		Statements in SWLS scale				
		The conditions of my life are excellent	*I am satisfied with my life*	*So far I have gotten the important things I want in life*	*If I could live my life over, I would change almost nothing*	
rural area	N	48				
	M	2.85	2.96	4.08	4.44	4.25
	Me	3	3	4	4,5	4
	SD	1.05	0.82	0.90	0.80	0.98
urban area	N	73				
	M	3.58	3.55	4.79	5.07	5.07
	Me	4	4	5	5	5
	SD	1.18	1.08	0.96	0.95	1.22
Total	N	121				
	M	3.29	3.31	4.50	4.82	4.74
	Me	3	3	5	5	5
	SD	1.18	1.03	0.99	0.94	1.19
Mann-Whitney U test		1122.5	1176.0	1075.5	1099.5	1080.5
p		0.001	0.001	0.000	0.000	0.000

the examined women; however, it was found that those who evaluated their material standard as satisfactory had the lowest satisfaction with life.

Burris and Andrykowski assessed psychological health among patients with the diagnosis of cancerous disease living in rural and urban areas and found that those living in rural areas functioned worse from the psychological aspect, and consequently had a lower satisfaction with life. The material status of the patients had no effect on their state of psychological health [16]. Palesh et al., in similar studies conducted among women with breast cancer living in rural areas, assessed the relationship of stressful life situations and social support with mood disorders. It was found that social support did not have a significant influence on the occurrence of mood disorders in the study group, while higher self-esteem ensured greater resistance of the respondents to stress [17].

In the presented study, the occupational activity of the women did not significantly statistically determine satisfaction with life; however, after treatment, those who were occupationally active evaluated their satisfaction with life in more positive terms than those who were non-active occupationally (21.2 vs. 20.16 – raw result; 5.80 vs. 5.48 sten scores). No statistically significant differences in replies to individual items in the SWLS scale were observed according to the place of residence. Women living in rural areas evaluated their level of satisfaction with life in more negative terms, compared to those living in urban areas.

Bai et al. showed that satisfaction with life among women with breast cancer significantly depended on place of residence, age, type of occupation performed, material status, age at marriage, health insurance, personality traits, general state of health, interpersonal relationships, and occurrence of the respondents' negative experiences [5]. In own study, the relationship between satisfaction with life and age and place of residence was also confirmed. The previously mentioned study by Bai et al. also indicated that women living in small towns had a higher level of satisfaction with life than those living in large cities [5]. Older women, i.e. aged 55 and over, had a higher level of satisfaction with life, compared to younger patients. In addition, women who had a vocation, higher material standard, had married at a younger age, and possessed health insurance, had a higher satisfaction with life, compared to those without a vocation, with lower material standard, had married at older age and who paid for health services. Women who had good interpersonal relationships and good general state of health had a higher satisfaction with life. A study by Petersson et al. conducted among women with breast cancer revealed that within a short period of time after a surgery, that professional activity and a quick return to work were important elements of well-being. Therefore, it was particularly important to take this aspect into account in rehabilitation [18]. In the presented study, no relationship was found between satisfaction with life and the marital status of the women, their material standard, education level, and occupational activity.

Tate and Forchheimer confirmed n their study that the respondents' age, marital status, and occupational activity exerted a significant effect on better wellbeing, and were related with a better quality of life [10]. Similarly, in own study, age determined the respondents' satisfaction with life; nevertheless, with respect to marital status and occupational activity, no such relationship was observed.

In the relevant literature, other factors determining the level of satisfaction with life of the women with breast cancer are also emphasized.

Fallah et al. paid attention to the relationships between the spiritual sphere, hope, happiness and satisfaction with life [19]. The researchers emphasized the importance of spiritual intervention for a considerable increase in hope, happiness and satisfaction with life among 60 Islamic women with breast cancer. Similar results were obtained by Wrońska et al., who found that the lowest quality of life of women after mastectomy occurred in the emotional sphere, and that depression, fear, anxiety, worries and sadness most frequently deteriorated the quality of life [20]. The relationship between spirituality and satisfaction with life was also emphasized in the studies by Tate and Forchheimer and Hebert et al. [10, 21]. Tate and Forchheimer found that spirituality was an important factor of satisfaction with life. In the study by Hebert et al., women who to a lesser degree were engaged in religious practices had worse psychological health and satisfaction with life, compared to those who were strongly religious [10, 21]. In a study by Olsson et al. among women with breast cancer conducted one month after the operation, it was found that life satisfaction was related to health and social support [22]. Brandão et al. in their research found that the identification of socio-demographic and psychosocial factors among the subjects allows focusing on psychological support activities for a specific group. Such behavior can improve the mood, reduce anxiety and depression, and thus improve the quality of life of women diagnosed with breast cancer [23].

Other factors are also of special importance for satisfaction with life of women with breast cancer. The study conducted by Molenaar et al. confirmed that better access to information was associated with higher life satisfaction of women with breast cancer [24]. Women who obtained information concerning mastectomy and breast conserving surgery on CDROM had the possibility to make easier the decision concerning the type of surgery. They also better evaluated their physical functioning, and therefore had a higher satisfaction with life, compared to women who received standard information (oral information, information leaflet).

The study by Malicka et al. conducted among Amazons, proved that women who were physically active had a higher satisfaction with life [25]. The SWLS in the group of women participating in tourist trips was 20.31, in the group of women who participated in dancing classes – 22.00, while among those who did not participate in these form of activity, SWLS remained on the level of 17.96 and 17.58. The study by Lötzke et al. showed that satisfaction with life among women with breast cancer did not increase as a result of physical exercises and yoga, directly after their application [26]. However, a statistically significant increase in satisfaction with life as a result of physical exercises was observed 3 months after their completion.

Contracting breast cancer creates a difficult situation for a woman which results in many limitations exerting an effect on satisfaction with life. It is important to recognize factors conditioning satisfaction with life in the situation of struggling with the disease. It is justifiable to conduct further research to diagnose factors determining the level of satisfaction with life of women with the diagnosis of breast cancer, which may be important in the prolongation of survival time.

CONCLUSIONS

1. According to the SWLS, women with the diagnosis of breast cancer obtained a mean result of 5.64 sten scores, which indicated a mediocre level of satisfaction with life.
2. The level of satisfaction with life depended statistically significantly on respondents' age, but only with respect to the raw result. Younger women evaluated their satisfaction with life in more positive terms than those who were older.
3. The highest difference in the assessment of satisfaction with life was observed according to the place of residence of the studied women. Women who lived in urban areas obtained a considerably higher result according to the SWLS, compared to rural inhabitants.
4. Marital status, education level, material standard, occupational activity of the women were insignificant in the respondents' evaluation of satisfaction with life.

REFERENCES

1. Ferlay J, Soerjomataram I, Dikshit R, Eser S, Mathers C, Robelo M, Parkin DM, Forman D, Bray F. Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 201. Int J Cancer. 2015; 136: 359–386.
2. Ginsburg O, Bray F, Coleman MP. The global burden of women's cancers: a grand challenge in global health. The Lancet. 2017; 389: 847–860.
3. Didkowska J, Wojciechowska U. Nowotwory piersi w Polsce i Europie-populacyjny punkt widzenia. Nowotwory J Oncol. 2013; 63: 111–118.
4. Juczyński Z. Narzędzia pomiaru w promocji i psychologii zdrowia. Pracownia Testów Psychologicznych Polskiego Towarzystwa Psychologicznego. Warszawa 2001.
5. Bai A, Li H, Huang Y, Liu Y, Gao Y, Wang P, Dai H, Song F, Hao X, Chen K. A survey of overall life satisfaction and its association with breast diseases in Chinese women. Cancer Med. 2016; 5: 111–119.
6. Iskandarsyah A, de Klerk C, Suardi DR, Soemitro MP, Sadarjoen SS, Passchier J. Satisfaction with information and its association with illness perception and quality of life in Indonesian breast cancer patients. Support Care Cancer. 2013; 21: 2999–3007.
7. Gokgoz S, Sadikoglu G, Paksoy E, Guneytepe U, Ozcakir A, Bayram N, Bilgel N. Health related quality of life among breast cancer patients: a study from Turkey. Glob J Health Sci. 2011; 3: 140–152.
8. Diener E, Emmons RA, Larson RJ, Griffin S. The satisfaction with life scale. J Pers Assess. 1985; 49: 71–75.
9. Diener E, Richard E, Oishi LS. Subjective well – being. The Science of Happiness and Life Satisfaction. Lewis M, Haviland-Jones JM, Feldman Barrett L (red). *In* Handbook of Emotions, The Guilford Press Third Edition. New York London. 2008; 63–67.
10. Tate DG, Forchheimer M. Quality of life, life satisfaction, and spirituality: comparing outcomes between rehabilitation and cancer patients. Am J Phys Med Rehabil. 2002; 81: 400–410.
11. Koç Z, Saglam Z, Güler H. Determination of life quality and satisfaction in patients who had surgeries and chemotherapy due to breast cancer. Eur J Oncol Nurs. 2014; 18S1: 23–59.
12. Han J, Grothuesmann D, Neises M, Hille U, Hillemanns P. Quality of life and satisfaction after breast cancer operation. Arch Gynecol Obstet. 2010; 282: 75–82.
13. He ZY, Tong Q, Wu SG, Li FY, Lin HX, Guan XX. A comparison of quality of life and satisfaction of women with early-stage breast cancer treated with breast conserving therapy vs. mastectomy in southern China. Support Care Cancer. 2012; 20: 2441–2449.
14. Elder EE, Brandberg Y, Björklund T, Rylander R, Lagergren J, Jurell G, Wickman M, Sandelin K. Quality of life and patient satisfaction in breast cancer patients after immediate breast reconstruction: a prospective study. Breast. 2005; 14: 201–208.
15. Bettencourt BA, Talley AE, Molix L, Schlegel R, Westgate SJ. Rural and urban breast cancer patients: health locus of control and psychological adjustment. Psychooncology. 2008; 17: 932–939.
16. Burris JL, Andrykowski M. Disparities in Mental Health between Rural and Nonrural Cancer Survivors: A Preliminary Study. Psychooncology. 2010; 19: 637–645.
17. Palesh OG, Shaffer T, Larson J, Edsall S, Chen XH, Koopman C, Turner-Cobb JM, Kreshka MA, Graddy K, Parsons R. Emotional self-efficacy, stressful life events, and satisfaction with social support in relation to mood disturbance among women living with breast cancer in rural communities. Breast J. 2006; 12: 123–9.
18. Petersson LM, Nilsson MI, Alexanderson K, Olsson M, Wennman-Larsen A. How do women value work shortly after breast cancer surgery and are their valuations associated with being on sick leave? J Occup Rehabil. 2013; 23: 391–399.
19. Fallah R, Golzari M, Dastani M, Akbari ME. Integrating Spirituality into a Group Psychotherapy Program for Women Surviving from Breast Cancer. Iran J Cancer Prev. 2011; 4: 141–147.
20. Wrońska I, Stepień R, Kulik T. The quality of women's life after mastectomy in Poland. Health Care Women Int. 2003; 24: 900–909.
21. Hebert R, Zdaniuk B, Schulz R, Scheier M. Positive and Negative Religious Coping and Well-Being in Women with Breast Cancer. J Palliat Med. 2009; 12: 537–545.
22. Olsson M, Nilsson M, Fugl-Meyer K, Petersson LM, Wennman-Larsen A, Kjeldgård L, Alexanderson K. Life satisfaction of women of working age shortly after breast cancer surgery. Qual Life Res. 2017; 26: 673–684.
23. Brandão T, Schulz MS, Matos PM. Psychological adjustment after breast cancer: a systematic review of longitudinal studies. Psychooncology. 2017; 26: 917–926.
24. Molenaar S, Sprangers MA, Rutgers EJ, Luiten EJ, Mulder J, Bossuyt PM, van Everdingen JJ, Oosterveld P, de Haes HC. Decision support for patients with early-stage breast cancer: effects of an interactive breast cancer CDROM on treatment decision, satisfaction, and quality of life. J Clin Oncol. 2001; 19: 1676–1687.
25. Malicka I, Szczepańska-Gieracha J, Jankowska E, Woźniewski M, Rymaszewska J. Physical activity, life satisfaction and adjustment to illness in women after treatment of breast cancer. Współcz Onkol. 2011; 15: 180–185.
26. Lötzke D, Wiedemann F, Rodrigues Recchia D, Ostermann T, Sattler D, Ettl J, Kiechle M, Büssing A. Iyengar-Yoga Compared to Exercise as a Therapeutic Intervention during (Neo)adjuvant Therapy in Women with Stage I–III Breast Cancer: Health-Related Quality of Life, Mindfulness, Spirituality, Life Satisfaction, and Cancer-Related Fatigue. J Evid Based Complementary Altern Med. 2016; doi.org/10.1155/2016/5931816.