Paidéia
ISSN: 0103-863X
paideia@usp.br
Universidade de São Paulo
Brasil

Fonseca, Solange; Lencastre, Leonor; Guerra, Marina
Life Satisfaction in Women With Breast Cancer
Paidéia, vol. 24, núm. 59, septiembre-diciembre, 2014, pp. 295-303
Universidade de São Paulo
Ribeirão Preto, Brasil

Paidéia
sep-dec. 2014, Vol. 24, No. 59, 295-303. doi: 10.1590/1982-43272459201403

Article

Life Satisfaction in Women With Breast Cancer[1]

Solange Fonseca[2]
Universidade do Porto, Porto, Portugal

Leonor Lencastre
Universidade do Porto, Porto, Portugal

Marina Guerra
Universidade do Porto, Porto, Portugal

Abstract: It is well known that breast cancer carries many psychosocial consequences. For a deeper understanding of this topic, this study aims to analyze the relationship between life satisfaction, meaning in life, optimism, body image and depression in 55 women with breast cancer, organized into two groups: mastectomized and submitted to conservative surgery. The variables were characterized based on the results from the Auto-Actualização-SentidoVida [Self-Actualization-Life Meaning] sub-scale, the Escala de Otimismo [Optimism scale], the Body Image Scale, the Hospital Anxiety and Depression Scale and the Escala de Satisfação com a Vida [Life satisfaction scale]. Meaning in life and optimism were positively correlated with life satisfaction. Higher depression and body image disturbance appeared associated with lower life satisfaction. Body image disturbance was higher in mastectomized women. It was concluded that women submitted to conservative surgery do not have more life satisfaction than mastectomized women, requiring equal attention in terms of preventing depression and promoting positive variables.

Keywords: breast neoplasms, depression, body image, positive psychology

A Satisfação com a Vida em Mulheres com Cancro da Mama

Resumo: Sabe-se que o cancro da mama acarreta consequências psicossociais. Para aprofundar esta problemática este estudo teve como objetivo analisar a relação entre satisfação com a vida, sentido de vida, otimismo, imagem corporal e depressão em 55 mulheres com cancro da mama, organizadas em dois grupos: mastectomizadas e tumorectomizadas. Essas variáveis foram caracterizadas com base nos resultados da subescala Auto-Actualização-SentidoVida, da Escala de Otimismo, da Body Image Scale, da Hospital Anxiety and Depression Scale e da Escala de Satisfação com a Vida. Sentido de vida e otimismo correlacionaram-se positivamente com satisfação com a vida. Maiores índices depressivos e distúrbio na imagem corporal apareceram associados a menor satisfação com a vida. O distúrbio na imagem corporal foi superior em mulheres mastectomizadas. Concluiu-se que as mulheres tumorectomizadas não estão mais satisfeitas com a vida do que as mastectomizadas, necessitando de igual atenção em termos de prevenção da depressão e promoção de variáveis positivas.

Palavras-chave: neoplasias mamárias, depressão, imagem corporal, psicologia positiva

La Satisfacción con la Vida en Mujeres con Cáncer de Mama

Resumen: Se sabe que el cáncer de mama provoca consecuencias psicosociales. Para investigar esta cuestión, el objetivo del presente estudio fue examinar la relación entre satisfacción con la vida, sentido de vida, optimismo, imagen corporal y depresión en 55 mujeres con cáncer de mama, integradas en dos grupos: mujeres sometidas a mastectomía y tumorectomizadas. Se caracterizaron las variables con base en las provas: sub-escala de Auto-Actualização-SentidoVida, Escala de Optimismo, Body Image Scale, Hospital Anxiety and Depression Scale y Escala de Satisfação com a Vida. Sentido de vida y optimismo se correlacionaron positivamente con la satisfacción con la vida. Mayor depresión y disturbio de la imagen corporal expresaron una menor satisfacción con la vida. El disturbio de la imagen corporal fue superior en mujeres sometidas a mastectomía. Se ha concluido que las mujeres tumorectomizadas no están más satisfechas con la vida que las mujeres sometidas a mastectomía, requiriendo la miesma atención cuanto a la prevención de la depresión y a la promoción de las variables positivas.

Palabras clave: neoplasmas de la mama, depresión, imagen corporal, psicología positiva

In the last few years, breast cancer has continued to grow throughout the world. This is mainly due to the predominance of life styles that allow for exposure to risk factors (Peres & Santos, 2009). In the United States of America, according to the American Cancer Society (2013), it was estimated that in 2013, there were around 40,030 deaths due to breast cancer, of which 39,620 of those were of women. These alarming figures place breast cancer in second place for deaths caused by cancer in women (American Cancer Society, 2013). In Portugal, according to the General Directorate for Health (2013), regardless of medical advances, breast cancer was responsible for 1,546 deaths in women in 2011, corresponding to a mortality rate of 29,5%. According to Ogden (2004), the complexity of the study of breast cancer is partly due to the changes that this entails in women's lives, changing the roles that contribute to their identity formation, their expectations for the future, their

[1] This article is derived from the master's thesis of the first author under the orientation of the second, and co-orientation of the third, developed at the Faculdade de Psicologia e de Ciências da Educação da Universidade do Porto.
Support: This research was partially funded by Fundação para a Ciência e Tecnologia (FCT) under the project PEst-OE/PSI/UI0050/2014.

[2] Correspondence address:
Leonor Lencastre. Faculdade de Psicologia e Ciências da Educação da Universidade do Porto. Rua Alfredo Allen, 4200-135. Porto, Portugal. E-mail: leonor@fpce.up.pt

appearance and the actual functioning of their body. Breast mutilation is extremely painful for a woman, as it's an organ that's heavily invested with representations of sexuality, femininity, and maternity. A mastectomy is characterized by the total removal of the breast, and can take on the form of a total mastectomy or a modified radical mastectomy. In the first case, the whole breast is removed, from the collarbone to the limits of the breastbone or the ribs, all the way to the armpit. The muscles are preserved and some underarm lymph nodes may be removed. A modified radical mastectomy involves the removal of the entire breast, including part of the muscle of the chest wall and some, or all, of the lymph nodes under the arm. This is the most aggressive surgery, and is performed in cases of advanced cancer. On the other hand, a tumorectomy preserves the breast, and can take the form of a nodulectomy (which only removes the tumour) or a quadrantectomy (removing approximately one quarter of the breast). Women may frequently experience adverse effects from complementary treatments. Radiotherapy for instance can provoke skin irritations, changes in the functioning of the digestive system, and changes in the stiffness and size of the injured breast. Chemotherapy can provoke alopecia, amenorrhea and mouth ulcers, among others that affect even more the feeling of feminine identity. The mutilation can derive from the surgery(ies) used in the treatment of this type of cancer. Surgeries that are more aggressive, like in the case of a mastectomy, or those more conservative, in the case of a tumorectomy (Santos & Vieira, 2011).

Wishing for a deeper analysis of the psychological consequences associated to breast mutilation, some authors studied the influence of specific types of surgery on body image. Various studies support that women with breast cancer who undergo a tumorectomy, have a more positive body image than those who undergo a mastectomy (Anagnostopoulos & Myrgianni, 2009; Fallowfield, Baum, & Maguire, 1986; Fobair et al., 2006; Manos, Sebastián, Bueno, Mateos, & De la Torre, 2005; Moreira & Canavarro, 2010; Rosenberg et al., 2013; Santos & Vieira, 2011; Sebastián, Manos, Bueno, & Mateos, 2007).

The diagnosis of breast cancer and the respective treatments can also cause other problems, like depression, which appears as one of the most common psychological disorders in the cancer population, affecting not only the patient but their main caretakers as well (Bottino, Fráguas, & Gattaz, 2009; Rezende et al., 2010; Sebastián et al., 2007). Cangussu, Soares, Barra & Nicolato (2010) concluded that the prevalence of depressive symptoms in women with breast cancer was 29,6% and that the factors associated with the presence of these symptoms was the chemotherapy treatment, the presence of pain, the limited mobility of the upper limb and poorer perception of their health. Fanger et al. (2010) went further and concluded that both depression and pain are correlated with a higher risk of suicide attempt in cancer patients.

Some studies about depression in breast cancer patients compared the psychological reactions of mastectomized women with those that were tumorectomized. Reich, Lesur & Perdrizet-Chevallier (2008) found that mastectomized women tend to develop more depression than tumorectomized women. However, Lueboonthavatchai (2007) found a small difference in regards to the psychiatric morbidity between both groups. In turn, Fallowfield et al. (1986) and Wong-Kim & Bloom (2005), didn't find significant differences between the patients treated by both surgeries in terms of depression. In the Fallowfield et al. case study, the authors suggest that even if the tumorectomized women present higher indices of depression, it could be due to the preoccupation with the possibility of surgeons not having removed the entire tumour.

Meaning in life is a variable that Positive Psychology frequently associates with measures of healthy psychological functioning, such as life satisfaction and happiness. Furthermore, it seems to operate as a facilitator of adaptive coping (Brandstatter et al., 2014; Kraus, Rodrigues, & Dixe, 2009; Park, Park, & Peterson, 2010; Wnuk, Marcinkowski, & Fobair, 2012), functioning as a tool that allows for greater resistance to suffering and a better adaptation to the disease (Baumeister & Vohs, 2002; Kraus et al., 2009; Sherman & Simonton, 2012; Vehling et al., 2011).

By studying the sources of meaning of life in cancer patients, Scheffold et al. (2013) defended that personal sources of meaning, such as engaging in personal relationships, the preservation of tradition, and interest in social/political causes are associated with minor depression during the disease. Some women with breast cancer even seem to see positive aspects in the disease experience, indicating improvements in their social skills, in their purpose in life, and in their interpersonal relationships (Antoni et al., 2006; Peres & Santos, 2009; Remondes-Costa, Jiménez, & Pais-Ribeiro, 2012).

Optimism is another important positive variable in face of disease, and is associated to constructs like happiness, hope, and resilience. On the other hand, pessimism is linked to depression, unhappiness, despair, vulnerability in regard to adversity, sickness and death (Barros de Oliveira, 2004). According to Carver & Scheier (2002), optimism is related to low levels of depression and with a high level of psychological well-being. When confronted with challenges, optimistic individuals persist in achieving their goals, whereas pessimistic individuals are insecure and hesitant, especially in conditions of adversity, as is the case of a serious disease. Carver & Scheier (2002) further argue that changes in physical health have less impact in optimists, probably because they adopt coping strategies that focus on problem-solving, because they idealize recovery plans as well as formulate strategies to achieve success. Optimistic patients appear to be more resistant to depression, they frequently report to humour and are happier with their life and with the social support they receive. Colby & Shifren (2013) also report that women with breast cancer that are more optimistic demonstrate better mental and social functioning.

This study will focus on body image, depression, meaning in life, and optimism of women with breast cancer. Fobair et al. (2006) define body image as a mental image of the body, an attitude in relation to the physical self, the health condition, appearance, integrity and sexuality. Body image is part of a wider construct – self-awareness - and can be defined as what the person thinks, feels, perceives and does in relation to their body. This variable was chosen because, among all the different types of cancer, breast cancer is the one that most influences the body image of women (Manos et al., 2005). Hence the interest in understanding the impact of the diagnosis on the body image of women in this sample. Furthermore, the study of this variable is important, since it is proven that the understanding of the value that a woman attributes to her appearance is extremely important for her adaptation to breast cancer (Moreira & Canavarro, 2011).

The option for studying depression stems from the disparity of results found among the various studies that were analysed, with regards to depression in women with breast cancer. Depression can be defined as a mood disorder characterised by an excessive amount of sensations linked to sadness that involve not only thoughts but also impulses and critical capacity. It can be accompanied by various symptoms, such as loss of energy and fatigue, sleep disorders, weight loss, difficulty concentrating, slowness, loss of pleasure, and disinterest in daily activities (Wilkinson, Moore, & Moore, 2003). Also, because cancer brings fear of death and provokes great suffering, it's considered important to observe if the women in this sample have a purpose in life that may guide their path throughout the course of their disease and verify if these patients have the perception of having goals in life, which is what we intend to analyse with the meaning in life variable. Optimists are those individuals who think that pleasant events will arise in their life. Optimism is associated with good mood, hope, and happiness, among other variables and the interest for its integration in this study is due to its relevance for physical and mental health in cases of disease (Barros de Oliveira, 1998).

There is still another positive variable that's relevant for this study: life satisfaction. This variable is part of subjective well-being, which in addition to the more cognitive assessment that refers to the attributions that the individual makes in relation to their own life, and from which they develop a critical cognitive judgement, involves a more affective component (positive and negative affects) (Albuquerque & Tróccoli, 2004; Diener, Emmons, Larsen, & Griffin, 1985; Diener, Lucas, & Oishi, 2002). In this sense, it's important to access the value judgements that the patients in this sample make in relation to their own existence, as it will be through their score in life satisfaction that we will be able to understand their adaptation to disease.

Based on the chosen variables, we defined as the objective of this study, the analysis of the relationship between life satisfaction, meaning in life, optimism, body image and depression in 55 women with breast cancer, organised into two groups: mastectomized and tumorectomized.

Four hypotheses were defined. The first hypothesis assumes that women with breast cancer, with higher levels of meaning in life, who are more optimistic, have better body image, and fewer depressive symptoms, also have a higher level of life satisfaction. This hypothesis was elaborated based on the contributions of Carver & Scheier (2002), Fanger et al. (2010), Kraus et al. (2009), Park et al. (2010) and Wnuk et al. (2012). The second hypothesis assumes that mastectomized women present a larger disturbance in body image than tumorectomized women. This hypothesis is based on, among others, the studies of Moreira & Canavarro (2010) and Santos & Vieira (2011). The third hypothesis assumes that mastectomized women present higher levels of depression than women submitted to a tumorectomy. This hypothesis is based on the study of Reich et al. (2008). The fourth and last hypothesis assumes that mastectomized women present less life satisfaction than tumorectomized women. Although there aren't any studies that show lesser life satisfaction in mastectomized women, the studies mentioned of Moreira & Canavarro (2010), Reich et al. (2008) and Santos & Vieira (2011) led to the formulation of this hypothesis. It is therefore thought that the higher values of depression and body image distortion found by the authors, in mastectomized women, can more adversely affect their life satisfaction compared to tumorectomized women.

Method

Participants

The sample consists of 55 women, aged between 32 and 79 (M = 54.33; SD = 11.03), submitted to surgery in a specialized hospital in Porto, in Portugal. The sample is organized into two groups: one group of 26 women undergoing a tumorectomy (47.3% of participants), whose mean age is 55.31 years (SD = 8.33); another group of 29 women undergoing a mastectomy (52.7% of participants), whose mean age is 53.45 years (SD = 13.08). The mean years of schooling for this sample was 8.09 (SD = 4.96), 6.00 being the median. Regarding their professional situation, as expected, the majority of the sample were on sick leave at the time of evaluation (45.5%).

At the time of data collection, all participants were in the first days of their post-surgery; recovering from their mastectomy or tumorectomy (3 of the mastectomized women had also been submitted to breast reconstruction). As for complementary treatments, only 9.1% of the sample underwent neoadjuvant chemotherapy.

Instruments

Socio-Demographic and Clinical Data Questionnaire. Composed of two parts, in which the first part collects socio-demographic information and the second part collects information about the participant's clinical history.

Auto-Actualização-SentidoVida (AA-SV) [Self-Actualization-Life Meaning] sub-scale. Developed by Guerra (1992) with the aim of measuring meaning in life, this sub-scale consists of 8 items. The responses are given on a 5 point Likert scale with attention to reverse scoring the positively keyed items. The total is obtained by adding up all the responses, which can vary from 8 to 40 points, of which 8 corresponds to less meaning in life and 40 corresponds to more meaning in life.

Escala de Otimismo [Optimism scale]. Developed by Barros de Oliveira (1998), this scale consists of 4 items, assessing optimism through individuals attitudes towards the future. Responses are given on a 5 point Likert scale, with the score made up of the sum of all the responses, ranging from 4 to 20 points.

Body Image Scale (BIS). Adapted to Portugal by Samico (2007), this scale consists of 10 items assessing bodily changes following a cancer disease and the impact of the surgery/treatments in body satisfaction. The responses to the items are given on a 4 point Likert scale, in which the total score is obtained by the sum of the responses, which can vary between 0 and 30 points.

Hospital Anxiety and Depression Scale (HADS). Developed by Zigmond & Snaith (1983) and translated and adapted to Portugal by Pais-Ribeiro et al. (2007), it consists of two subscales, one measures anxiety and the other measures depression, each one with 7 items. The responses are given on a 4 point Likert scale. The score of each scale is done separately, and is the sum of all the responses, which can vary between 0 and 21 points. Only the depression subscale was used in this study.

Escala de Satisfação com a Vida (ESV) [Life satisfaction scale]. Developed by Diener et al. (1985), translated and adapted to Portugal by Neto (1993), this scale consists of 5 items and assesses life satisfaction as a cognitive judgement, excluding the affective component. The responses to the items are given on a 7 point Likert scale and the final result is obtained through the sum of all the items, which can vary between 5 and 35 points.

Procedure

Data collection. The data was collected between November 2010 and January 2011, in which the conditions of collection were the same for all participants. The researcher went to the hospitalized women's ward, where individually a presentation and explanation of the objectives of the study where made, and confidentiality was insured. It was explained that participation in the study was voluntary. Despite always having asked the patients to fill in the protocols by themselves, most of them ended up being filled in by the researchers at the request of the patient due to their fatigue and physical limitations. Seventy-one protocols were completed, of which 16 were eliminated due to little clarity in regards to the responses or because some participants were submitted to both types of surgery. Our sample therefore totalled 55 participants. As inclusion criterion we defined the breast cancer diagnosis with post submission to either a mastectomy or a tumorectomy. As exclusion criteria we defined: being less than 18 years old, having less than four years of schooling, being in a terminal disease situation, having deteriorating cognitive capacities and the refusal to participate.

Data analysis. Given that in all instruments the responses were given using a Likert scale, the total score was achieved by summing up all the results of the responses. In the case of the subscale AA-SV, before summing up the total, the negatively keyed items were reversed. Subsequently, the analysis and statistical treatment of the data were made using the Statistical Package for the Social Sciences (SPSS), version 17,0 for Windows. The descriptive statistical analysis included the calculation of frequencies for ordinal variables and calculating means and standard deviations for the cardinal variables. We used Student's *t*-test to compare the means of independent samples and calculated the Pearson's correlation coefficient to assess the degree of association between pairs of variables.

Ethical Considerations

This study was approved on the 21st of October, 2010, by the Ethical Commission of the Portuguese Oncological Institution of Porto Franscisco Gentil, public corporate entity (IPOPFG, E.P.E). The protocol reference of this study is CA/236.

Results

Characterization of the Main Variables

The results of life satisfaction obtained by the ESV varied between 11 and 35 points, 5 and 35 being the minimum and the maximum values of the scale and 20 the midpoint. 7.3% of participants obtained the maximum score, demonstrating that they are very satisfied with their life, find that they have excellent life conditions, and that their life nears their ideals. The mean score of the total sample was 27.96 (*SD* = 5.63) and the median was 29 points, values which are considered representative of high life satisfaction.

The results of meaning of life in the AA-SV (with minimum of 8, maximum of 40 and midpoint of 24) varied between 20 and 40 points; 1.8% of the sample obtained 20 points and 3.6% obtained the maximum score. The latter percentage of women refer that they make life plans, that their life isn't lived in vain, feel self-fulfilled as a person, and have a mission in life for which they strive. The mean score of the total sample was 31.62 (*SD* = 4.70) and the median was 32 points, values that suggest a high level of meaning in life.

The results of the Optimism Scale vary between 4 and 20 points, corresponding to the minimum and maximum values of the scale, the midpoint being 16; 1.8% of participants obtained the minimum value and 12.7% the maximum value of optimism. The mean score was 15.00 (*SD* = 3.65) and the median was 15 points, which reveals high levels of optimism.

We can therefore say that, in general, these patients face the future with optimism, have hope in receiving what they desire and make future projects.

As for depression, 80% of the participants had no depressive symptoms, 7.3% had mild symptoms, 9% showed moderate depression, and only 3.6% had severe depression, with symptoms of tension, without pleasure in what they do, very concerned, discouraged, slow, having lost all interest in taking care of themselves and unable to think about the future with pleasure. The score obtained in the HADS varied between 0 and 15 points, of which 0 and 21 are the minimum and maximum values. The mean score was 4.85 (SD = 3.96) and the median was 4 points, which represents the absence of depression.

The results of body image obtained in the BIS varied between 0 and 28 points, of which 0 was the minimum value and 30 the maximum value of the scale; 16.4% of the sample obtained a final score of 0.0 which represents the absence of disturbance in body image, not being unsatisfied with their body, with its appearance, not feeling less feminine or attractive. Only one participant obtained 28 points, expressive of great disturbance in body image. The mean score for the total sample was 6.09 (SD = 6.61), the median was 4 points. These values reveal that body image is largely unaffected, since the lower the score, the less disturbance of body image.

Relationships Between the Variables of the Study

To analyse the association between the life satisfaction variable and the remaining variables, we calculated the Pearson's correlation coefficients. Life satisfaction correlated with body image (r = -.571, N = 55, p < .001), in other words, a smaller disturbance in body image is associated with high levels of life satisfaction and optimism (r = .421, N = 55, p = .001), where a high level of optimism is then associated with life satisfaction. Also correlated, although with less intensity, was meaning in life (r = .314, N = 55, p = .020), in other words, higher levels of meaning in life are associated with higher levels of life satisfaction, and negatively associated with depression (r = -.311, N = 55, p = .021).

Comparison of Tumorectomized and Mastectomized Women

To compare the two groups of patients in relation to each variable of the study, we used the student's t-test for independent samples. The results of this test, as well as the minimum, maximum values and the median of each variable are shown in table 1. Briefly, we found statistically significant differences between tumorectomized and mastectomized women, in relation to body image distortion (t(43) = 2.78, p = .008). The mastectomized women show worse body image (M = 8.24, SD = 7.72) than the tumorectomized women (M = 3.69, SD = 4.02). There were no statistically significant differences between the two groups for the variables of life satisfaction, meaning in life, optimism and depression.

Discussion

The characterization of life satisfaction of this study's participants presented a mean value above that obtained by Neto (1993) in his validation study of the ESV. In this sense, the participants have, in general, good life conditions, and consider their life to be near their ideals. It should however be noted that the sample studied by this author had distinct characteristics from ours, as it consisted of 217 healthy Portuguese adolescents.

As for meaning in life, the mean of the values found in the AA-SV were above the midpoint of the scale. Note that the results obtained were similar to those observed in the Silva (2010) study with a sample of 90 women with colorectal cancer (M = 30.52, SD = 1.30). Thus it appears that, in general the participants of this study feel they have an objective that orients their life.

Regarding optimism, it's difficult to classify the results, as there is no reference to the values of central tendency in the studies by Barros de Oliveira (1998), the author of the optimism

Table 1
Comparison Results of Tumorectomized and Mastectomized Women

Main Variables*		Min.-Max.	Median	M (SD)	t	p
Meaning in Life	Tumorectomized	21-40	32	31.88 (4.89)	t(53) = 0.40	.694
	Mastectomized	20-39	31	31.38 (4.59)		
Optimism	Tumorectomized	5-20	14	14.69 (2.96)	t(50) = 0.60	.551
	Mastectomized	4-20	16	15.28 (4.20)		
Body Image	Tumorectomized	0-17	3	3.69 (4.02)	t(43) = 2.78	.008
	Mastectomized	0-28	6	8.24 (7.72)		
Depression	Tumorectomized	0-15	3	4.50 (4.09)	t(53) = 0.63	.534
	Mastectomized	0-14	5	5.17 (3.87)		
Life Satisfaction	Tumorectomized	18-35	30	28.96 (4.47)	t(53) = 1.25	.216
	Mastectomized	11-35	29	27.07 (6.44)		

Note. *main variables distributed by type of surgery (tumorectomy and mastectomy).

scale. However, having as a maximum value of the scale 20 points, the mean obtained of 15.00 (*SD* = 3.65), reveals high values of optimism, which translate into hope for the future.

In regards to depression, we found similar values to those obtained by Pais-Ribeiro et al. (2007). These authors verified that 11.2% of cancer patients obtained a higher score than the cut-off point. Both the mean obtained by these authors (*M* = 5.89) and that obtained in this study (*M* = 4.85), represent the absence of depressive symptoms.

Finally, the participants in this study present a mean value of body image disturbance of 6.09 points, which is inferior to that found by Samico (2007) in the validation study of the BIS for the Portuguese cancer population. This author obtained results superior to those found in this study in both surgical groups. We can therefore state that the participants of this study don't appear to be unsatisfied with their appearance.

Another objective of this research study was to characterize the relationship of life satisfaction with other variables. The first hypothesis focused on the relationship between meaning in life, optimism, body image, and depression with the life satisfaction of individuals, in order to analyse their adaptation to disease. The results obtained, that positively correlated meaning in life with life satisfaction, support the studies of Kraus et al. (2009), Park et al. (2010) e Wnuk et al. (2012), who argue that having more meaning in life is positively correlated with measures of healthy psychological functioning, like life satisfaction. In regards to the positive relationship found in the sample between optimism and life satisfaction, the results support the findings of Carver and Scheier (2002). These authors defend that optimists are happier with the life they lead, rely more on good mood and have more pleasure with social support. In this sense, positive psychology provides strategies that can be developed to protect people, leading them to adopt an optimistic posture which is connected to well-being. This can be done through individual psychological counselling or through group therapy, which have scientifically proven effectiveness (Cerezo, Ortiz-Tallo, & Cardenal, 2009).

It was also found that larger disturbances in body image are associated with lower life satisfaction. Such results may be based on the fact that we live in a society preoccupied with aesthetics, where the concept of body image is gaining an increasing importance. In this sense, the mutilation of a breast can have a negative impact on body image and consequently, in the self-esteem of a woman. This is understandable, given the fact that the breast is an organ that is highly significant for women at various levels (Ogden, 2004).

We also found a negative correlation between depression and life satisfaction. It's important to note that life satisfaction can be seen as a cognitive or value judgement about our own existence. So knowing that individuals with depression normally present a negative vision of the world, then they can also present a negative vision of their own existence, and in this sense, present low levels of life satisfaction. Moreover, according to Fanger et al. (2010), pain as well as depression, are correlated with an increased risk of suicide in cancer patients, which leads us to believe that in these cases, life satisfaction is non-existent.

Knowing that we can approach life satisfaction as a measure of adaptation to disease, we can say that women from this sample with higher levels of meaning in life, that are more optimistic, have better body image and have less depressive symptoms seem to be better adapted to the disease. We can therefore confirm the first hypothesis.

Concerning the comparison between mastectomized and tumorectomized women, the second hypothesis, which holds that mastectomized women present a larger body image disturbance than tumorectomized women, was confirmed by the present study. The results reflect the words of Moniz, Fernandes & Oliveira (2011), who defend that disturbance in body image is superior in mastectomized women which can be attributed to the intensity of the mutilation. In this sense, the mastectomized women suffer more consequences from experiencing significant changes in their body image, particularly for feeling that their body is incomplete. These results support several other studies that prove that patients submitted to a tumorectomy have a more positive body image than those that undergo a mastectomy (Anagnostopoulos & Myrgianni, 2009; Fallowfield et al., 1986; Fobair et al., 2006; Manos et al., 2005; Moreira & Canavarro, 2010, 2012).

Because it is known that depression is the most common psychological consequences in the cancer population (Bottino et al., 2009; Sebastián et al., 2007), it was considered interesting to compare the values of depression between both surgical groups. In this sense, we formulated a third hypothesis, that mastectomized women present higher levels of depression than those submitted to a tumorectomy. This hypothesis was based on the study of Reich et al. (2008), which notes that mastectomized women develop more depression. However, given the results of this study, we didn't verify any statistically significant differences between surgical groups for depression scores, which invalidate this third hypothesis.

Like the results found in this study, other authors didn't find statistically significant differences in depression in tumorectomized and mastectomized women. This is the case of the Wong-Kim & Bloom (2005) study that found that the type of surgery wasn't a predictor of depressive symptoms. Lueboonthavatchai (2007) also defends that some studies that compared the psychosocial results of both types of surgeries found very low levels of psychiatric morbidity between the two groups. The results of Fallowfield et al. (1986) are more specific, going in the opposite direction than initially expected in this study, and presented one of the most plausible justifications for the fact that tumorectomized women present higher depressive score than the mastectomized. This issue arises due to the fact that various women that undergo a tumorectomy expressed profound worries about the possibility of the surgeons not having removed the entire tumour. Hence the worry of the authors with the need for psychological counselling of these patients.

We also sought to compare patient's perception of life satisfaction of both groups, so that we could understand the processing of their adaption to cancer. In this sense, we formulated the fourth hypothesis, which was that mastectomized women have lower life satisfaction than tumorectomized. Several studies mentioned above can justify the underlying logic for the formulation of this hypothesis, including the studies of Manos et al. (2005) and Sebastián et al. (2007), who defend that body image is less positive in mastectomized patients. We also emphasize the study of Reich et al. (2008), which notes that mastectomized women develop more depression than tumorectomized women. Thus, we believe that the higher values of depression and body image disturbance found by the authors in mastectomized women may more negatively affect their life satisfaction when compared to tumorectomized women.

In this study we didn't find significant differences in regards to life satisfaction between both groups, which invalidates the fourth hypothesis. The results of the systematic review by Moreira & Canavarro (2012) about the influence of the type of surgery in the psychosocial adaptation of women with breast cancer, seems to support this argument. They show that there are no significant differences between both surgical groups, but in other indicators of psychosocial adaptation, not having assessed the variable studied in this investigation, that being, the variable of life satisfaction.

Conclusion

Patients with a higher level of meaning in life, that are more optimistic, with a better body image, and less depressive symptoms, seem to show more life satisfaction and are probably better adapted to their disease. This conclusion is relevant to psychological intervention with breast cancer women, showing that for a better adjustment to disease, it's important to prevent the onset of depressive symptoms, work to promote positive body image and promote positive variables like optimism and meaning in life.

When analysing the variables in both groups of patients, differences were found regarding body image, where a disturbance in body image was found more in mastectomized women. However, there was no difference in regards to life satisfaction. These results can have particular repercussions for psycho-oncology. It serves as a warning to psychologists, to be vigilant of tumorectomized women, not devaluing them in regards to the mastectomized women. If at first it was thought that these women would present higher life satisfaction, given that in general, a tumorectomy is a sign of less severity of disease, after analysing the results, it appears that the differences between mastectomized and tumorectomized women in regards to optimism, meaning in life, depression and life satisfaction aren't (except in the case of body image) significant, and should therefore be taken into consideration.

The main limitations of this study are: the size of the sample, the fact that the study is cross sectional and that the data collection occurred during the post-operative period. It would be interesting to implement in the future a similar study, but performed on patients in later stages of the therapeutic process or to conduct a longitudinal study. It would also be interesting to study the adaptation to cancer according to age, comparing younger patients with older patients.

References

Albuquerque, A. S., & Tróccoli, B. T. (2004). Desenvolvimento de uma escala de bem-estar subjetivo. *Psicologia: Teoria e Pesquisa, 20*(2), 153-164. doi:10.1590/S0102-37722004000200008

American Cancer Society. (2013). *Cancer facts & figures*. Atlanta, GA: American Cancer Society.

Anagnostopoulos, F., & Myrgianni, S. (2009). Body image of Greek breast cancer patients treated with mastectomy or breast conserving surgery. *Journal of Clinical Psychology in Medical Settings, 16*(4), 311-321. doi:10.1007/s10880-009-9176-5

Antoni, M. H., Lechner, S. C., Kazi, A., Wimberly, S. R., Sifre, T., Urcuyo, K. R., Carver, C. S. (2006). How stress management improves quality of life after treatment for breast cancer. *Journal of Consulting and Clinical Psychology, 74*(6), 1143-1152. doi:10.1037/0022-006X.74.6.1143

Barros de Oliveira, J. (1998). Optimismo: Teoria e avaliação (Proposta de uma nova escala). *Psicologia, Educação e Cultura, 2*(2), 295-308.

Barros de Oliveira, J. (2004). *Psicologia positiva: Amor, felicidade, alegria, optimismo, esperança, perdão, sabedoria, beleza, sentido de vida*. Porto, Portugal: ASA.

Baumeister, R. F., & Vohs, K. D. (2002). The pursuit of meaningfulness in life. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 608-618). New York, NY: Oxford University Press.

Bottino, S. M. B., Fráguas, R., & Gattaz, W. F. (2009). Depressão e câncer. *Revista de Psiquiatria Clínica, 36*(Suppl. 3), 109-115. doi:10.1590/S0101-60832009000900007

Brandstatter, M., Kogler, M., Baumann, U., Fensterer, V., Kuchenhoff, H., Borasio, G. D., & Fegg, M. J. (2014). Experience of meaning in life in bereaved informal caregivers of palliative care patients. *Support Care Cancer, 22*(5), 1391-1399. doi:10.1007/s00520-013-2099-6

Cangussu, R. O., Soares, T. B., Barra, A. A., & Nicolato, R. (2010). Sintomas depressivos no câncer de mama: Inventário de Depressão de Beck – Short form. *Jornal Brasileiro de Psiquiatria, 59*(2), 106-110. doi:10.1590/S0047-20852010000200005

Cerezo, M. V., Ortiz-Tallo, M., & Cardenal, V. (2009). Exprésion de emociones y bienestar en un grupo de mujeres con câncer de mama: Una intervención psicológica. *Revista Latinoamericana de Psicologia, 41*(1), 131-140.

Carver, C. S., & Scheier, M. F. (2002). Optimism. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 231-243). New York, NY: Oxford University Press.

Colby, D. A., & Shifren, K. (2013). Optimism, mental health, and quality of life: A study among breast cancer patients. *Psychology, Health & Medicine, 18*(1), 10-20. doi:10.1080/13548506.2012.686619

Diener, E, Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71-75. doi:10.1207/s15327752jpa4901_13

Diener, E., Lucas, R. E., & Oishi, S. (2002). Subjective well-being: The science of happiness and life satisfaction. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 63-73). New York, NY: Oxford University Press.

Direção-Geral da Saúde. (2013). *Portugal: Doenças oncológicas em números: Programa nacional para doenças oncológicas*. Lisboa, Portugal: Ministério da Saúde.

Fallowfield, L. J., Baum, M., & Maguire, G. P. (1986). Effects of breast conservation on psychological morbidity associated with diagnosis and treatment of early breast cancer. *British Medical Journal, 293*(6558), 1331-1334.

Fanger, P. C., Azevedo, R. C. S., Mauro, M. L. F., Lima, D. D., Gaspar, K. C., Silva, V. F., Botega, N. J. (2010). Depressão e comportamento suicida em pacientes oncológicos hospitalizados: Prevalência e fatores associados. *Revista da Associação Médica Brasileira, 56*(2), 173-178. doi:10.1590/S0104-42302010000200015

Fobair, P., Stewart, S. L., Chang, S., D'Onofrio, C., Banks, P. J., & Bloom, J. R. (2006). Body image and sexual problems in young woman with breast cancer. *Psycho-Oncology, 15*(7), 579-594. doi:10.1002/pon.991

Guerra, M. P. (1992). Conceito de auto-actualização, elaboração de uma escala e avaliação das suas qualidades psicométricas. *Psychologica, 7*, 95-109.

Kraus, T., Rodrigues, M., & Dixe, M. A. (2009). Sentido de vida, saúde e desenvolvimento humano. *Revista Referência*, *2*(10), 77-88.

Lueboonthavatchai, P. (2007). Prevalence and psychosocial factors of anxiety and depression in breast cancer patients. *Journal of the Medical Association of Thailand, 90*(10), 2164-2174.

Manos, D., Sebastián, J., Bueno, M., Mateos, N., & De la Torre, A. (2005). Body image in relation to self-esteem in a sample of Spanish woman with early-stage breast cancer. *Psicooncología, 2*(1), 103-116.

Moniz, P. A. F., Fernandes, A. M., & Oliveira, L. (2011). Implicações da mastectomia na sexualidade e imagem corporal da mulher e resposta da enfermagem perioperatória. *Revista de Enfermagem Referência, 3*(5), 163-171. doi:10.12707/RIII1148

Moreira, H., & Canavarro, M. C. (2010). A longitudinal study about the body image and psychosocial adjustment of breast cancer patients during the course of the disease. *European Journal of Oncology Nursing, 14*(4), 263-270. doi:10.1016/j.ejon.2010.04.001

Moreira, H., & Canavarro, M. C. (2011). A adaptação ao cancro da mama nas fases de diagnóstico e sobrevivência: Será o investimento na aparência um factor explicativo relevante? *Análise Psicológica, 29*(4), 505-520. doi:10.14417/ap.100

Moreira, H., & Canavarro, M. C. (2012). Tipo de cirurgia, adaptação psicossocial e imagem corporal no cancro da mama. *Psicologia, Saúde & Doenças, 13*(2), 169-190.

Neto, F. (1993). Satisfaction with life scale: Psychometric properties in an adolescent sample. *Journal of Youth and Adolescence, 22*(2), 125-134. doi:10.1007/BF01536648

Ogden, J. (2004). *Compreender o cancro da mama* (F. Andersen, Trad.). Lisboa, Portugal: Climepsi.

Pais-Ribeiro, J., Silva, I., Ferreira, T., Martins, A., Meneses, R., & Baltar, M. (2007). Validation study of a Portuguese version of the Hospital Anxiety and Depression Scale. *Psychology, Health & Medicine, 12*(2), 225-235. doi:10.1080/13548500500524088

Park, N., Park, M., & Peterson, C. (2010). When is the search for meaning related to life satisfaction? *Applied Psychology: Health and Well-Being, 2*(1), 1-13. doi:10.1111/j.1758-0854.2009.01024.x

Peres, R. S., & Santos, M. A. (2009). Personalidade e câncer de mama: Produção científica em Psico-Oncologia. *Psicologia: Teoria e Pesquisa, 25*(4), 611-620. doi:10.1590/S0102-37722009000400017

Reich, M., Lesur, A., & Perdrizet-Chevallier, C. (2008). Depression, quality of life and breast cancer: A review of the literature. *Breast Cancer Research & Treatment, 110*(1), 9-17. doi:10.1007/s10549-007-9706-5

Remondes-Costa, S., Jiménez, F., & Pais-Ribeiro, J. (2012). Depois do cancro da mama: Acontecimentos significativos no ciclo de vida. *Psicologia, Saúde & Doenças, 13*(2), 238-251.

Rezende, V. L., Derchain, S., Botega, N. J., Sarian, L. O., Vial, D. L., Morais, S. S., & Perdicaris, A. A. M. (2010). Avaliação psicológica dos cuidadores de mulheres com câncer pelo General Comfort Questionnaire. *Paidéia (Ribeirão Preto), 20*(46), 229-237. doi:10.1590/S0103-863x2010000200010

Rosenberg, S. M., Tamimi, R. M., Gelber, S., Ruddy, K. J., Kereakoglow, S., Borges, V. F., ... Partridge, A. H. (2013). Body image in recently diagnosed young women with early breast cancer. *Psycho-Oncology, 22*(8), 1849-1855. doi:10.1002/pon.3221

Samico, S. (2007). *O silêncio do vazio: O impacto da mastectomia e histerectomia na imagem corporal e na sexualidade na doença oncológica no feminino* (Unpublished master's thesis). Universidade do Porto, Porto, Portugal.

Santos, D. B., & Vieira, E. M. (2011). Imagem corporal de mulheres com câncer de mama: Uma revisão sistemática da literatura. *Ciência & Saúde Coletiva, 16*(5), 2511-2522. doi:10.1590/S1413-81232011000500021

Scheffold, K., Mehnert, A., Muller, V., Koch, U., Harter, M., & Vehling, S. (2014). Sources of meaning in cancer patients – Influences on global meaning, anxiety and depression in a longitudinal study. *European Journal of Cancer Care, 23*(4), 472-480. doi:10. 1111/ecc.12152

Sebastián, J., Manos, D., Bueno, M. J., & Mateos, N. (2007). Imagen corporal y autoestima en mujeres con cáncer de mama participantes en un programa de intervención psicosocial. *Clínica y Salud, 18*(2)*,* 137-161.

Sherman, A. C., & Simonton, S. (2012). Effects of personal meaning among patients in primary and specialized care: Associations with psychosocial and physical outcomes. *Psychology & Health, 27*(4), 475-490. doi:10.1080/08870446.2011.592983

Silva, E. D. R. (2010). *Variáveis preditivas da qualidade de vida de sobreviventes de cancro colo-rectal* (Unpublished doctoral dissertation). Universidade do Porto, Porto, Portugal.

Vehling, S., Lehmann, C., Oechsle, K., Bokemeyer, C., Krull, A., Koch, U., & Mehnert, A. (2011). Global meaning and meaning-related life attitudes: Exploring their role in predicting depression, anxiety, and demoralization in cancer patients. *Support Care Cancer, 19*(4)*,* 513-520. doi:10.1007/s00520-010-0845-6

Wilkinson, G., Moore, B., & Moore, P. (2003). *Tratar a depressão* (J. Almeida, Trad.). Lisboa, Portugal: Climepsi.

Wnuk, M., Marcinkowski, J. T., & Fobair, P. (2012). The relationship of purpose in life and hope in shaping happiness among patients with cancer in Poland. *Journal of Psychosocial Oncology, 30*(4), 461-483. doi:10.1080/07347332.2012.684988

Wong-Kim, E. C., & Bloom, J. R. (2005). Depression experienced by young women newly diagnosed with breast cancer. *Psycho-Oncology, 14*(7)*,* 564-573. doi:10.1002/pon.873

Zigmond, A. S., & Snaith, R. P. (1983). The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica, 67*(6)*,* 361-370. doi:10.1111/j.1600-0447.1983.tb09716.x

Solange Fonseca is a Psychologist in the Associação para a Integração de Crianças Inadaptadas de Arouca.

Leonor Lencastre is a Professor at the Faculdade de Psicologia e Ciências da Educação da Universidade do Porto.

Marina Guerra is a Professor at the Faculdade de Psicologia e Ciências da Educação da Universidade do Porto.

Received: Feb. 12, 2014
1st Revision: June 12, 2014
2nd Revision: July 25, 2014
Approved: Aug. 25, 2014

How to cite this article:

Fonseca, S., Lencastre, L., & Guerra, M. (2014). Life satisfaction in women with breast cancer. *Paidéia (Ribeirão Preto), 24*(59), 295-303. doi: 10.1590/1982-43272459201403