

Original Article**Effects of cognitive behavioral counseling on body Image following mastectomy \***

*Simin Fadaei*<sup>1</sup>, *Mojgan Janighorban*<sup>2</sup>, *Tayebe Mehrabi*<sup>3</sup>,  
*Sayed Ahmad Ahmadi*<sup>4</sup>, *Fariborz Mokaryan*<sup>5</sup>,  
*Abbas Gukizade*<sup>6</sup>

**Abstract**

**BACKGROUND:** Breast cancer is the most common cancer in women. Surgical treatment of breast cancer may cause body image alterations. The purpose of the current study was to examine the effects of cognitive behavioral counseling on body image among Iranian women with primary breast cancer.

**METHODS:** In this quasi-experimental designed study, 72 patients diagnosed as breast cancer and surgically treated were enrolled in Isfahan, Iran. The patients were entered the study by convenience sampling method and were randomly divided in two groups of intervention (n = 32) and control (n = 40). The intervention group received consultation based on Ellis rational emotive behavior therapy (REBT) method for 6 sessions during 3 weeks. The control group did not receive any consultation. Paired t-test was used to compare the changes in groups and independent t-test was conducted to compare two groups. The average values represented as mean  $\pm$  standard deviation.

**RESULTS:** Before the study, the body image score was not significantly different between the intervention ( $16.97 \pm 5.44$ ) and control ( $15.95 \pm 4.66$ ) groups ( $t = 0.86$ ;  $P = 0.395$ ). The body image score was significantly lower in the intervention group ( $9.03 \pm 6.11$ ) compared to control group ( $17.18 \pm 5.27$ ) after the intervention ( $t = -6.07$ ;  $P < 0.001$ ).

**CONCLUSIONS:** Since a woman's body image influences her breast cancer treatment decision, oncology professionals need to recognize the value of a woman's favorite about appearance and body image. This study emphasizes the importance of offering consultation in breast cancer patients.

**KEYWORDS:** Breast Neoplasms, Mastectomy, Body Image, Intervention Studies, Counseling.

J Res Med Sci 2011; 16(8): 1047-1054

**B**reast cancer is the most common cancer in women in industrial countries<sup>1</sup> and is going to become even more considerable in many developing countries<sup>2</sup> too. Breast cancer is the first prevalent cancer among women in Iran<sup>3</sup> and the second one in Isfahan Province.<sup>4</sup> Any cancer is often perceived life-threatening, and many patients encounter it with fear or defenselessness. For women, breast cancer remains a common and dreaded

experience. Most of the women, however, face this crisis and master it without developing major psychiatric disorders.<sup>5</sup> Surgery is generally primary treatment for breast cancer and among those diagnosed, a large number will require mastectomy as part of their management. Surgical treatments include breast-conserving therapy or modified radical mastectomy, which includes removal of all breast tissue with the axillary lymph nodes.<sup>6</sup>

\* This paper derived from a Specialty thesis in Isfahan University of Medical Sciences.

1- Instructor, Faculty Member, School of Nursing and Midwifery, Islamic Azad University, Najafabad Branch, Department of Midwifery, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.

2- Msc Student, Department of Midwifery, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.

3- Instructor, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.

4- Associate, Department of Counseling, School of Psychology, The University of Isfahan, Isfahan, Iran.

5- Associate Professor, Department of Internal, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran.

6- Associate Professor, Department of Radiotherapy School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran.

Corresponding Author: Simin Fadaei

E-mail: fadaei@nm.mui.ac.ir

Breast cancer treatment alters body reality and may influence body presentation.<sup>7, 8</sup> The concept of body image has been considered as the structure for understanding stresses about body changes, and global measures, usually ratings of satisfaction with the body, have been commonly used.<sup>9</sup> Body image is how one views oneself physically and one's view of one's appearance.<sup>10</sup> Patients with breast cancer undergo more extensive surgery that states more situational distress.<sup>11-14</sup> Body change stress refers to subjective psychological stress that accompanies women's negative and distressing feelings and emotions, thoughts, and behaviors resulting from breast cancer and/or breast surgery.<sup>9</sup>

Several studies have acknowledged a relationship between women's treatment choices and their views about appearance and body image.<sup>15-18</sup> The high prevalence of psychosocial morbidity in breast cancer has been well documented in Western countries.<sup>19</sup> An US evaluation of genetic counseling services indicated that 27% of clinic attendees had levels of distress consistent with the need for psychological support.<sup>20</sup> A meta-analysis in this area concluded that psychosocial intervention improves the quality of life of cancer patients, and several reviews have supported this conclusion.<sup>19</sup> Decreasing stress has been the chief goal for interventions<sup>21, 22</sup> and the most victorious interventions have reduced patients' anxiety.<sup>23, 24</sup> As body image concerns related to breast cancer, it can be associated with other aspects of functioning and decision making; so, the need for assessment and intervention with these women seems clear. Psychosocial intervention has been used to reduce the morbidity of breast cancer patients, and its effects have been evaluated over the past 2 decades.<sup>19</sup>

In a previous study in Iran, all (100%) the women with breast cancer underwent mastectomy had negative body image of themselves.<sup>25</sup> In another study in Iran, the effect of therapeutic movements on the psychological resuscitation of patients underwent mastectomy was assessed.<sup>26</sup> However, to the best of our knowledge, there is not any study on the

effect of cognitive behavioral counseling in these patients. The current study aimed to examine the effects of cognitive behavioral counseling on body image among Iranian women with primary breast cancer after mastectomy.

## Methods

This study was designed as a quasi-experimental trial during 2008-2009. The Participants were all consecutive cases diagnosed and surgically treated for breast cancer in Sayyedshohada hospital, the only referral university hospital for cancers in Isfahan, Iran. All the patients underwent radiotherapy or chemotherapy. As the patients were divided into two groups using convenience method, the treatment condition did not affect the answers.

This study was approved as a thesis for Master of Science in midwifery (No. 81208) in the School of Nursing and Midwifery, Isfahan University of Medical Sciences. Ethical Committee of this school approved it too.

Eligibility criteria were history of modified radical mastectomy<sup>27</sup> 2-6 month before the study,<sup>28</sup> aged 18-65 years,<sup>29</sup> Iranian race, married, stages I, II or III of breast cancer,<sup>30</sup> clear and available address and ability to cooperation.

During first two months after mastectomy, the patient do not have a complete imagination of what happened to her and 6 month after mastectomy, the patient with positive or negative body image reaches to an stable psychospiritual status.<sup>28</sup> Therefore, the patients during this period (2-6 month after mastectomy) were assessed.

Before the age of 18 years, the puberty period and its changes could affect the body image; also, after the age of 65 years, decreasing physical and mental capacities and catching different diseases could affect the body image too.<sup>29</sup> Therefore the patients between these two were enrolled in this study. In stage IV breast cancer, there is metastasis to other organs<sup>30</sup> and this could affect the body image; so the patients with stages I, II and III of breast cancer were studied.

With regard to the probability of impaired body image, patients with these conditions were excluded: congenital anomalies, disability, limbs paralysis, limbs amputation, limbs deformities, deformities due to burn, skin disorders, facial defects, mental disorders, severe obesity or thinness, rheumatoid arthritis, joints deformity, chronic obstructive pulmonary disease, heart disease, renal failure, kidney transplantation, respiratory disease, metabolic disease, history of hysterectomy, cerebrovascular attacks, spinal cord injuries, history of previous psychological or psychiatric disorders, previous history of other cancers and diagnosis of another cancer at the time of investigation.

The researcher checked the medical profiles of all the patients and also interviewed with all of them to take their history. The patients underwent mastectomy by two surgeons and the surgery method was the same for all of them. All women gave written informed consent to join the study. All the patients signed consent form after insuring about privacy of their information. Patients were empowered to participate in classes. Ethics approval was obtained from the Medical University of Isfahan, medical and research ethics board.

The sample size was calculated 32 for intervention group ( $n = 32$ ); we added 8 in control group ( $n = 40$ ) and totally 72 patients participated in this study. The patients were recruited by simple sampling method until catching the sample size and then were randomly divided in two groups of intervention and control.

Data were gathered by a two part questionnaire which first section consisted of demographic characteristics and second section evaluated body image. The body image scale (BIS) were designed by Hopwood et al.<sup>31</sup> in collaboration with the European Organization for Research and Treatment of Cancer (EORTC) Quality of Life Study Group; it consists of 10 items. The scale was validated among breast cancer patients and revealed good psychometric properties, proving to be an adequate and valid measure of body image among this population.<sup>31</sup> It used a 4-point response scale (0:

not at all to 3: very much) and the final score was the sum of the 10 items, ranging from 0 to 30. More score meant more body imaging disorder. This questionnaire was translated to Persian by a professional translator and then, the Persian version was translated again to English by another professional translator and the mistakes were edited. Content validity of the translated questionnaire was confirmed by 2 psychologists from the Isfahan school of Medicine, and 2 psychiatrists from the Isfahan school of Nursing. To determine reliability of questionnaire, a test-retest pilot study performed on 30 eligible patients with a 15-days interval. The correlation coefficient between two times was 0.92.

In first phase of study, questions were asked from all eligible cases to evaluate their body image. All women had their first interview as soon as possible after they were entered to the study. Intervention group was undergone consultation by a psychiatrist using Ellis rational emotive behavior therapy (REBT) method. REBT is a five to thirty-session method during 20 days to 18 months.<sup>32</sup> We used it for 6 sessions during 3 weeks. Consultation contained logical treatment, training of muscle relaxation, adaptive skills, and problem solving. The patients should have done their tasks in their home between the sessions.<sup>32</sup> Each session lasted 90 minutes and each group was comprised of 10-11 patients. The control group did not receive any consultation. All the patients (intervention and control groups) were asked to answer the questions 3 weeks later.

Data were analyzed using the statistical package for the social sciences (SPSS, version 13, SPSS Inc., Chicago, IL). The quantitative data were reported as mean  $\pm$  SD and the qualitative data were reported as number and percent. Paired t-test was used to compare the changes in groups and independent t-test was conducted to compare two groups. P-value  $\leq$  0.05 was considered as statistically significant.

## Results

Table 1 provides the sociodemographic information of participants. There were no signifi-

**Table 1.** Demographic characteristics of patients in intervention and control groups

Demographic characteristics	Intervention group	Control group	P-value
age(year)*	43.46 ± 7.6	44.15 ± 8.7	0.354
Husbands' age (year)*	50.96 ± 8.3	52 ± 7.1	0.604
Education n(%)	Illiterate	7(21.9)	8(20)
	Elementary	10(31.3)	17(42.5)
	Guidance school	3(9.4)	2(5)
	High school	10(31.3)	11(27.5)
	Higher education	2(6.3)	2(5)
Husbands' education n(%)	Illiterate	5(15.6)	8(20)
	Elementary	13(40.6)	11(27.5)
	Guidance school	1(3.1)	5(12.5)
	High school	6(18.8)	12(30)
Occupation n(%)	Higher education	7(21.9)	4(10)
	Housewife	26(81.3)	35(87.5)
	Employed	6(18.8)	5(12.5)
Husbands' occupation n(%)	Retired	6(6.3)	6(15)
	Employee	10(28.1)	10(25)
	worker	8(31.3)	8(20)
number of offspring	other	11(34.4)	16(40)
		3.37 ± 2.3	3.4 ± 2.1

\* Mean ± SD

cant differences between two groups in terms of age, age of husband, education, marital status, occupation, husband's education, or number of offspring.

Before the study, the body image score was not significantly different between the intervention (16.97 ± 5.44) and control (15.95 ± 4.66) groups ( $t = 0.86$ ;  $P = 0.395$ ).

The body image scores before (15.95 ± 4.66) and after (17.18 ± 5.27) three weeks were not significantly different in control group ( $t = -1.723$ ,  $P = 0.093$ ); but we found significant differences between before (16.97 ± 5.44) and after (9.03 ± 6.11) consultation in intervention group ( $t = 12.41$ ,  $P < 0.001$ ).

The body image score was significantly lower in the intervention (9.03 ± 6.11) group

compared to control (17.18 ± 5.27) group ( $t = -6.07$ ;  $P < 0.001$ ) after the intervention.

## Discussion

Although breast cancer continues to be the most widespread malignant tumor among women, it is a very treatable disease.<sup>33</sup> Holland and Rowland demonstrated that following a diagnosis of cancer, a normal stress response is common. Afterward, anger, disruptive anxiety, and depressive symptoms may also be seen.<sup>34</sup> It was shown that adjustment to breast cancer treatment is very difficult job.<sup>35</sup> Breast loss or significant change on it may be a main source of distress or reduced adaptation. Admittedly, the Halstead radical mastectomy, that is the standard breast surgery of previous decades, is

**Table 2.** Comparing the body image score between the study groups before and after the intervention

	Before the intervention	After the intervention	P-value
Control group	15.95 ± 4.66	17.18 ± 5.27	0.093
Intervention group	16.97 ± 5.44	9.03 ± 6.11	< 0.001
P-value	0.395	< 0.001	-

very disfiguring.<sup>10</sup> At the present time, it is well established that Breast Conservative Therapy has the same efficacy of Mastectomy regarding survival for early-stage breast cancer. Although surgical options today are less disfiguring, they have remained a challenge for women. Breast cancer surgical treatment in developing countries has a deep impact on both patient's survival and body image disturbances, too.<sup>36</sup> The current management of breast cancer aims to rid the body of the disease, and there is no reliable approach to identify women at risk of abnormal body image.<sup>37</sup> Nearly 50% of women diagnosed with breast cancer will survive at least 15 years and essentially will adjust to surgical sequels.<sup>26</sup> Approximately 26% of all newly diagnosed breast cancer cases occur among women younger than age of 50<sup>38</sup> that can highlight body image concerns more and more.

A woman's body image influences her breast cancer treatment decision.<sup>39</sup> Body image alteration not only can be experienced in terms of an impaired sense of femininity or sexuality, but also it can have a deep impact on the entire of one's being.<sup>40</sup> Women who had mastectomies had a significant lower body image scale when compared with the women who had other surgical procedures.<sup>41</sup> Some researches pointed out the fact that, changes in body image related to breast cancer treatment affect women's adjustment.<sup>39</sup> Most of quality of life studies can not reflect the body image concerns of breast cancers because many of quality of life questionnaires usually do not include measures of body image.<sup>10</sup>

Body image is also important to women in developing countries.<sup>36</sup> The question is whether the psychosocial intervention that was developed for European Americans would have the same efficacy in other cultural groups like Iranian. Our main aim was to evaluate the psychosocial impact of cognitive behavioral consultation on body image in breast cancer patients. We found significant differences before and after consultation in women who undergone psychological intervention. It may mean cognitive-behavioral therapy as an intervention

could be quite a good instrument for patients with breast cancer.

Since psychological distress can influence capacity to cope with treatment, rate of recovery and survival<sup>42</sup> consideration of psychological distress may develop better quality of life for the patient. There are many potential interventions that help patients to get through cancers. Studies have indicated that psychosocial interventions of a variety of types such as support groups, educational interventions, patient discussion groups, interpersonal relationships, cognitive-behavioral therapy are helpful in reducing distress after cancer diagnosis and treatment.<sup>43</sup> Prominently, psychologists have several helpful strategies to decrease body-related anxieties<sup>44</sup> that may be useful to women living with cancers.<sup>45</sup>

Treatment can improve or destroy body image. Prior studies suggested an improved post-surgical body image in patients who undergo breast reconstruction; although more recently, studies have shown variable outcomes.<sup>46, 47</sup> In candidate of bilateral prophylactic mastectomy, 90 percent of the women who regretted surgery had not counseling.<sup>48</sup>

This observation might describe how consultation can help to cope with cancer, which significantly shows stress caused by cancers and adverse effects of harmful treatment could be mitigate by consultation. Significant reductions in cancer patients' emotional distress can be achieved with interventions, particularly for those patients with high levels of distress.<sup>49</sup> In view of the medical value of these findings, a possible use of these results might be to integrate counseling and psychosocial intervention in the management of breast cancer patients.

Our results were concordant with other studies<sup>43-45</sup> which hypothesized that counseling is effective in reducing anxiety or body image concerns. Therefore, generalization of the findings to other ethnic groups may be reasonable. Evidently, women at risk for such problems can be recognized at the time of diagnosis, and effective cognitive-behavioral therapies could be implemented to decrease psychosocial prob-

lems such as body image concerns. Providers should know patients' needs are different.

How can counseling improve body image concerns? The potential explanations may be consisting of several components: these interventions helped them to cope with stresses and provided an opportunity for the women to disclose themselves, and talk about their concerns. It may have supplied some control for what was previously out of control; the awful understandings of altered body image. At last, it may have helped decrease body tension and distress.<sup>37</sup>

When distress is encountered, how body image concerns can be managed? While there is evidence to suggest that specialist nurses can and do provide invaluable counseling and support for women identified with abnormal body image,<sup>50, 51</sup> nurses should offer counseling to women with breast cancer about body image alterations and treatment decisions.<sup>39</sup> This should begin as soon as possible after the primary diagnosis and continue throughout the treatment course to assist an optimistic coping to the breast cancer and its treatment. Awareness of women's pleasure with their body image will assist nurses when planning interventions to help women adjust to their breast cancer treatment. Nurses should be aware of the possible impact of breast cancer treatment that may have on a women's body image and counsel women about these concerns when needed.<sup>39</sup>

Nursing researches in this area are required and must be evaluated as part of an integrated

approach to manage body image problems in breast cancer patients. However, we will need to follow the present sample to determine how long the efficacy of counseling will be persistent.

### **Conclusion**

Body image is an important feature of the human mental picture. Oncology professionals, who concern for women with breast cancer, need to recognize the value of a woman's favorite about appearance and body image at the time of treatment decision making. This helps her to select type of treatment and support long-term adjustment. This study emphasizes the importance of offering consultation in this population on a more regular order. This concept has largely been neglected in the oncologic practice.

### **Limitations**

One of the limitations of our study was that the patients were not followed up for a longer duration; so the sustainability of the effects of intervention (stability with time) was not assessed. Another limitation was the placebo effect; as the control group has no session at all. More studies could be done in this regard.

### **Acknowledgement**

Our special thanks to patients who enrolled in this study despite their serious disease. This article was derived from a MSc thesis in the School of Nursing and Midwifery, Isfahan University of Medical Sciences (No. 81208); we thank them for their supports.

### **Conflict of Interests**

Authors have no conflict of interests.

### **Authors' Contributions**

SF directed the study, prepared the manuscript and finalized it; MJ coordinated the study, gathered the data and took place in writing first manuscript draft; TM helped in consulting the patients; SAA was the coordinator of the Cognitive Behavioral Counseling sessions; FM and AG referred the patients and helped in completing the data. All authors have read and approved the content of the manuscript.

## References

1. Esteve J. Incidence of breast cancer in France and other industrialized countries. *Presse Med* 2007; 36(2 Pt 2): 315-21.
2. Yang L, Parkin DM, Ferlay J, Li L, Chen Y. Estimates of cancer incidence in China for 2000 and projections for 2005. *Cancer Epidemiol Biomarkers Prev* 2005; 14(1): 243-50.
3. Azizi F, Hatami H, Janghorbani M. *Epidemiology and Control of Common Disorders in Iran*. 2<sup>nd</sup> ed. Tehran: Eshtiagh P; 2000. p. 176
4. Ghasemi M. The frequency distribution demographic characteristics in patients with breast cancer, [PhD Thesis] Isfahan: Isfahan University of Medical Sciences; 1998. p. 98.
5. Blanco-Sanchez R. Experiences of mastectomised women. A phenomenological study. *Enferm Clin* 2010; 20(6): 327-34.
6. Bukovic D, Fajdic J, Strinic T, Habek M, Hojsak I, Radakovic N. Differences in sexual functioning between patients with benign and malignant breast tumors. *Coll Antropol* 2004; 28 Suppl 2: 191-201.
7. Kazakova M, Deneva T, Uzunova V, Sarafian V. YKL-40 in sera of breast tumor patients. *J of IMAB* 2010; 16(3): 3-7.
8. Price B. A model for body-image care. *J Adv Nurs* 1990; 15(5): 585-93.
9. Frierson GM, Thiel DL, Andersen BL. Body change stress for women with breast cancer: the Breast-Impact of Treatment Scale. *Ann Behav Med* 2006; 32(1): 77-81.
10. Collins KK, Liu Y, Schootman M, Aft R, Yan Y, Dean G, et al. Effects of breast cancer surgery and surgical side effects on body image over time. *Breast Cancer Res Treat* 2011; 126(1): 167-76.
11. Noguchi M, Saito Y, Nishijima H, Koyanagi M, Nonomura A, Mizukami Y, et al. The psychological and cosmetic aspects of breast conserving therapy compared with radical mastectomy. *Surg Today* 1993; 23(7): 598-602.
12. Margolis G, Goodman RL, Rubin A. Psychological effects of breast-conserving cancer treatment and mastectomy. *Psychosomatics* 1990; 31(1): 33-9.
13. Kemeny MM, Wellisch DK, Schain WS. Psychosocial outcome in a randomized surgical trial for treatment of primary breast can. *Cancer* 1988; 62(6): 1231-7.
14. Beckmann J, Johansen L, Richardt C, Blichert-Toft M. Psychological reactions in younger women operated on for breast cancer. Amputation versus resection of the breast with special reference to body-image, sexual identity and sexual function. *Dan Med Bull* 1983; 30 Suppl 2: 10-3.
15. Mandelblatt JS, Hadley J, Kerner JF, Schulman KA, Gold K, Dunmore-Griffith J, et al. Patterns of breast carcinoma treatment in older women: patient preference and clinical and physical influences. *Cancer* 2000; 89(3): 561-73.
16. Sepucha K, Ozanne E, Silvia K, Partridge A, Mulley AG. An approach to measuring the quality of breast cancer decisions. *Patient Educ Couns* 2007; 65(2): 261-9.
17. Molenaar S, Oort F, Sprangers M, Rutgers E, Luiten E, Mulder J, et al. Predictors of patients' choices for breast-conserving therapy or mastectomy: a prospective study. *Br J Cancer* 2004; 90(11): 2123-30.
18. Nold RJ, Beamer RL, Helmer SD, McBoyle MF. Factors influencing a woman's choice to undergo breast-conserving surgery versus modified radical mastectomy. *Am J Surg* 2000; 180(6): 413-8.
19. Fukui S, Kugaya A, Okamura H, Kamiya M, Koike M, Nakanishi T, et al. A psychosocial group intervention for Japanese women with primary breast carcinoma. *Cancer* 2000; 89(5): 1026-36.
20. Kash KM, Holland JC, Halper MS, Miller DG. Psychological distress and surveillance behaviors of women with a family history of breast cancer. *J Natl Cancer Inst* 1992; 84(1): 24-30.
21. Hsu SC, Wang HH, Chu SY, Yen HF. Effectiveness of informational and emotional consultation on the psychological impact on women with breast cancer who underwent modified radical mastectomy. *J Nurs Res* 2010; 18(3): 215-26.
22. Andersen BL. Biobehavioral outcomes following psychological interventions for cancer patients. *J Consult Clin Psychol* 2002; 70(3): 590-610.
23. Sheard T, Maguire P. The effect of psychological interventions on anxiety and depression in cancer patients: results of two meta-analyses. *Br J Cancer* 1999; 80(11): 1770-80.
24. Van't Spijker A, Trijsburg RW, Duivenvoorden HJ. Psychological sequelae of cancer diagnosis: a meta-analytical review of 58 studies after 1980. *Psychosom Med* 1997; 59(3): 280-93.
25. Ghorbanian N, Abdollah Zadeh F. Evaluation of the effect of movement therapy training in psychiatric rehabilitation of patients after mastectomy in private hospitals of Tabriz. *Proceedings of the 1st Congress of Client Education*; 1997 Apr 21-22; Booshehr, Iran; 1997.
26. Margoosian AA. The relationship body image with family and social relationships and in women undergone mastectomy referred to public therapeutic centers in Tehran, [Thesis] Tabriz: Tabriz University of Medical Sciences; 1994.
27. Berek JS, Novak E. *Berek and Novak's gynecology*. 14<sup>th</sup> ed. Philadelphia: Lippincott Williams & Wilkins; 2007.
28. Haber J. *Comprehensive psychiatric nursing*. 5<sup>th</sup> ed. Philadelphia: Mosby; 1997. p. 695.

29. Ignatavicius DD, Workman ML, Mishler MA. Medical-surgical nursing across the health care continuum. 3<sup>rd</sup> ed. Philadelphia: W.B. Saunders; 1999. p. 148.
30. Berek JS, Hacker NF. Practical gynecologic oncology. 3<sup>rd</sup> ed. Philadelphia: Lippincott Williams & Wilkin; 2000. p. 648.
31. Hopwood P, Fletcher I, Lee A, Al Ghazal S. A body image scale for use with cancer patients. *Eur J Cancer* 2001; 37(2): 189-97.
32. Corey G, Corey MS, Callanan P. Issues and ethics in the helping professions. California: Brooks/Cole/Thomson Learning; 2003.
33. Jemal A, Murray T, Samuels A, Ghafoor A, Ward E, Thun MJ. Cancer statistics, 2003. *CA Cancer J Clin* 2003; 53(1): 5-26.
34. Holland JC, Rowland JH. Handbook of psychooncology: psychological care of the patient with cancer. New York: Oxford University Press; 1989.
35. Bard M, Sutherland AM. Psychological impact of cancer and its treatment. IV. Adaptation to radical mastectomy. *Cancer* 1955; 8(4): 656-72.
36. Shoma AM, Mohamed MH, Nouman N, Amin M, Ibrahim IM, Tobar SS, et al. Body image disturbance and surgical decision making in egyptian post menopausal breast cancer patients. *World J Surg Oncol* 2009; 7: 66.
37. Bredin M. Mastectomy, body image and therapeutic massage: a qualitative study of women's experience. *J Adv Nurs* 1999; 29(5): 1113-20.
38. Burwell SR, Case LD, Kaelin C, Avis NE. Sexual problems in younger women after breast cancer surgery. *J Clin Oncol* 2006; 24(18): 2815-21.
39. Kraus PL. Body image, decision making, and breast cancer treatment. *Cancer Nurs* 1999; 22(6): 421-7.
40. Coyler H. Women's experience of living with breast cancer. *Journal of Advanced Nursing* 2010; 23: 496-501.
41. Gumus M, Ustaalioglu BO, Garip M, Kiziltan E, Bilici A, Seker M, et al. Factors that Affect Patients' Decision-Making about Mastectomy or Breast Conserving Surgery, and the Psychological Effect of this Choice on Breast Cancer Patients. *Breast Care (Basel)* 2010; 5(3): 164-8.
42. Richardson JL, Shelton DR, Krailo M, Levine AM. The effect of compliance with treatment on survival among patients with hematologic malignancies. *J Clin Oncol* 1990; 8(2): 356-64.
43. Meyer TJ, Mark MM. Effects of psychosocial interventions with adult cancer patients: a meta-analysis of randomized experiments. *Health Psychol* 1995; 14(2): 101-8.
44. Panjari M, Bell RJ, Davis SR. Sexual function after breast cancer. *J Sex Med* 2011; 8(1): 294-302.
45. Andersen BL, Elliot ML. Sexuality for women with cancer: Assessment, theory, and treatment. *Sexuality and Disability* 1993; 11(1): 7-37.
46. Macadam SA, Ho AL, Cook EF, Jr., Lennox PA, Pusic AL. Patient satisfaction and health-related quality of life following breast reconstruction: patient-reported outcomes among saline and silicone implant recipients. *Plast Reconstr Surg* 2010; 125(3): 761-71.
47. Falk Dahl CA, Reinertsen KV, Nesvold IL, Fossa SD, Dahl AA. A study of body image in long-term breast cancer survivors. *Cancer* 2010; 116(15): 3549-57.
48. Hatcher MB, Fallowfield L, A'Hern R. The psychosocial impact of bilateral prophylactic mastectomy: prospective study using questionnaires and semistructured interviews. *BMJ* 2001; 322(7278): 76.
49. Andersen BL, Farrar WB, Golden-Kreutz DM, Glaser R, Emery CF, Crespín TR, et al. Psychological, behavioral, and immune changes after a psychological intervention: a clinical trial. *J Clin Oncol* 2004; 22(17): 3570-80.
50. Watson M, Denton S, Baum M, Greer S. Counseling breast cancer patients: a specialist nurse service. *Counseling Psychology Quarterly* 1988; 1(1): 25-34.
51. Medina-Franco H, Garcia-Alvarez MN, Rojas-Garcia P, Trabanino C, Drucker-Zertuche M, Arcila D. Body image perception and quality of life in patients who underwent breast surgery. *Am Surg* 2010; 76(9): 1000-5.