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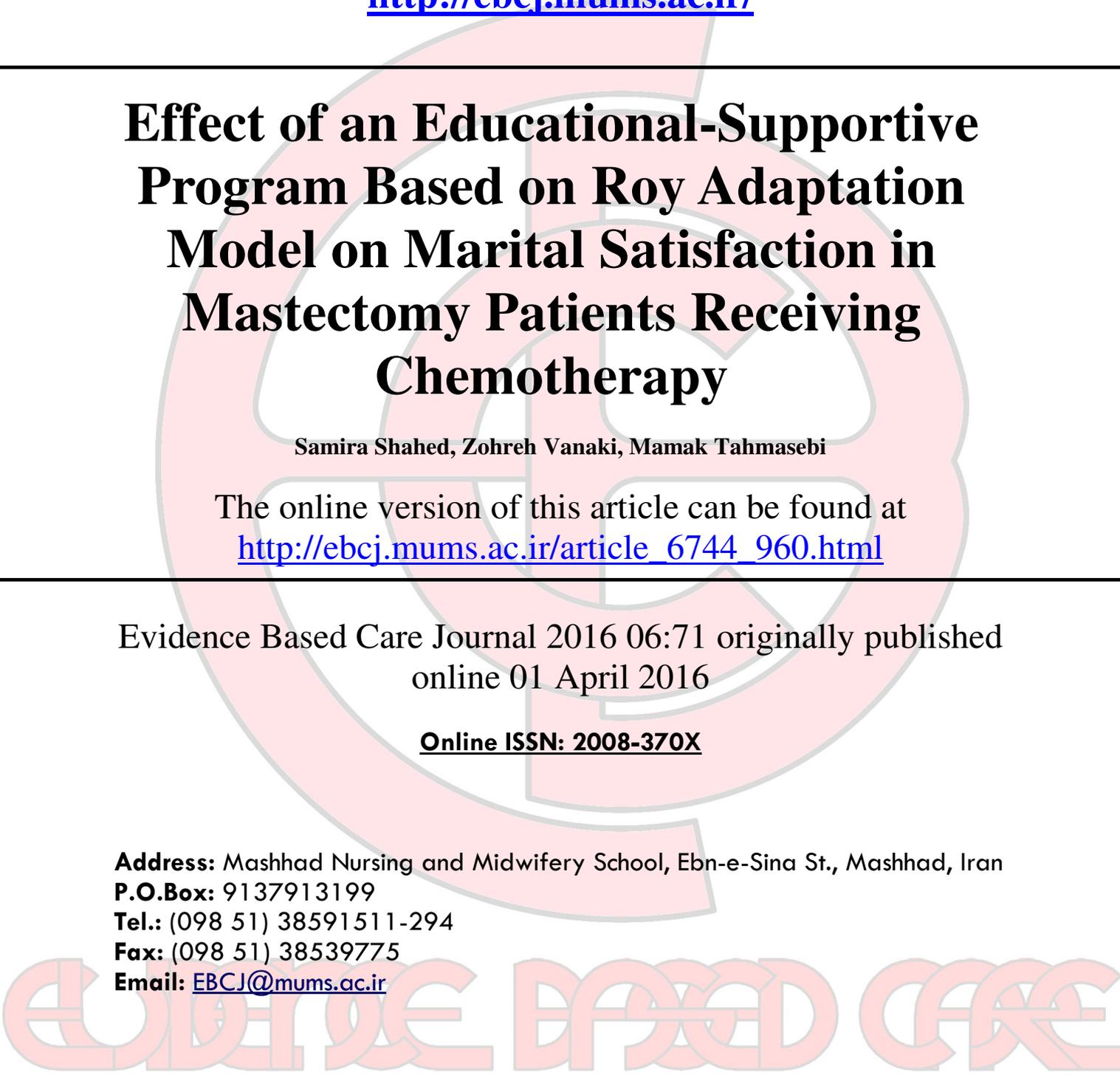
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CLASIFICADO EN CATEGORÍA DE C

Effect of an Educational-Supportive Program Based on Roy Adaptation Model on Marital Satisfaction in Mastectomy Patients Receiving Chemotherapy

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Abstract

Background: Regarding nurses' significant role in improving quality of marital life in mastectomy patients and their families, implication of the adaptation model can help nurses reaching this goal.

Aim: This study aimed to determine Effect of an educational-supportive program based on Roy This quasi-experimental study was performed on 69 mastectomy patients receiving chemotherapy in 2013 in clinical services in Tehran, Iran. The samples were randomly allocated to two groups. The data collection instrument was ENRICH Marital Satisfaction scale (2011). In the experimental group, maladaptive behaviors and their stimuli were determined by the questionnaire, and then adaptive strategies were implemented in 45 days. The program was based on support (patients instruction), peer group, weblog, meeting with the participants' spouses, and three-month follow-up using behaviors checklist. Control group patients received the regular treatment sessions. T-test, Pearson's correlation coefficient, Spearman's rank correlation coefficient, and Chi-square tests were run, using SPSS version 19.

Results: In experimental group, paired sample t-test reflected an increase in marital satisfaction from 24.7 ± 2.6 before to 32.9 ± 3.5 after the intervention ($P=0.03$). However, no significant differences were observed in the control group from $26/7 \pm 4/6$ before to $26/5 \pm 4/8$ after the intervention in this regard ($P=0/63$).

Implications for Practice: Roy Adaptation Model can be used as a framework for designing educational-supportive programs to improve quality of marital life in mastectomy patients receiving chemotherapy.

Keywords: Chemotherapy, Marital satisfaction, Mastectomy, Roy Adaptation Model

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Introduction

Patients with cancer or other chronic diseases should be familiar with treatment and coping strategies to deal with pain and other symptoms in addition to an especial supportive care model. Nurses are the key member of professional health team, providing patient care and promoting the quality of life of patient (1, 2). Cancer is a global problem, and the second most common cause of mortality after cardiovascular diseases in the developed countries and the third leading cause of mortality in less developed ones (3). Currently, 20% of global deaths are due to cancer. According to statistical estimations, the number of deaths due to cancer will increase up to 45% between 2007 and 2030 (from 9.7 million to 12 million deaths).

Annually, approximately 85,000 cases of cancer are detected in Iran and more than 30,000 patients die of cancer. Breast cancer is the most common (76%) cancer in females (4). In Iran, its incidence is about 7000 annually (5). The most common side effects of chemotherapy include fatigue, nausea, hair loss, mouth sores, anorexia, and diarrhea, cessation of menstruation cycle, infertility, and sexual dysfunction (6, 7).

According to the reports by Imam Khomeini Cancer Institution in Tehran, scores of body image as well as sexual desire and function were reported to be poor among mastectomy patients undergoing chemotherapy in 2006 (8). Vaginal dryness and decreased libido and orgasm are of the problems that breast cancer patients undergoing chemotherapy will experience (9).

Marital satisfaction is associated with attitude and is one of the major factors for home-based quality of life. Hakins (2006) defined marital satisfaction as the tangible feeling of satisfaction and pleasure experienced by couples when they consider all aspects of their marriage (10). Community mental, physical, and emotional health depends on marital relationship and marriage sustainability. Studies revealed that marital satisfaction helps with individuals' holistic satisfaction. In other words, spouses with high marital satisfaction are more self-confident and much more adaptable in their social relations.

Marital satisfaction is the result of mental processes affecting marital and sexual satisfaction, affection and love expressed by spouses, mutual respect, sexual relationship, similarity of attitudes, and problem solving skills (11). Therefore, marital adjustment can be considered as a source of family system or even a part of its resuscitating power. Sexual function plays a major role in marital relationship (12, 13). In fact, sexual satisfaction is a natural need, which is parallel with other physical and basic needs. Accordingly, if fulfillment of this need is disregarded, negative consequences such as mental and physical diseases might ensue (14). Body image plays an important role in individuals' sexual health. Given the changes occurring along with breast cancer, depression, low self-esteem, feeling grief (due to loss of breast, hair, and sexual life disturbance) are highly prevalent in these patients.

Moreover, previous disturbing memories, weight gain or loss, hair loss, and skin problems followed by chemotherapy may influence sexual satisfaction. Thus, provision of support for these patients can promote their quality of life (15). Adaptation refers to alterations in attitudes and practices to maintain health, wellness, and happiness, and to overcome the stress caused by cancer (16). Roy believes that humans are constantly interacting with the environment. Various stimuli (original, contextual, and residual) influence human systems, and individuals respond to these stimuli by their personal physiological approach, self-concept, dependence, independence, and role function domains. Nurses are considered as external regulators identifying inconsistent behaviors and their stimuli to define a proper nursing process based on nursing diagnosis to eliminate and mitigate the stimulus and promote adaptation (17). Several studies proved the effect of Roy Adaptation Model on quality of life in chronic diseases (18-20). However, none of them was conducted on mastectomy patients and marital satisfaction.

Shin Hi Han (2002) evaluated the effect of Adaptation Model on the nausea and vomiting caused by chemotherapy and its psychological symptoms by means of relaxation technique, reminiscence, applying distractive images, positive thinking, relaxation, and physical exercise. The results demonstrated a 20-50% decrease in symptoms using Roy Adaptation Model (21). Furthermore, Asgarpour in his study (2010) indicated the impact of Adaptation Model on the reduction of fatigue in hemodialysis patients (20). Henssy (1999) noted the beneficial role of this nursing model in empowering asthmatic patients (22).

Samarol carried out a study (1998) to determine the impact of group supportive care along with providing a training program (as a supportive care intervention) on adaptation in breast cancer patients. The results of that study revealed the efficacy of integration of supportive techniques to promote adaptation in breast cancer patients (23). Nosrati (2007) proposed that training programs could have a significant impact on marital satisfaction (24). Thus, it seems that limited studies were performed in the nursing field despite the prevalence of marital problems in mastectomy patients. Most importantly, no study has assessed the effect of Roy Nursing Model on these patients.

This study, therefore, aimed to investigate Effect of an educational-supportive program based on Roy Adaptation Model on marital satisfaction in mastectomy patients receiving chemotherapy.

Methods

This study, with a pretest-posttest design, was performed on 69 mastectomy patients receiving chemotherapy (35 patients in the intervention group and 34 patients in the control group), who were referred to Tehran health centers (Cancer Institute of Imam Khomeini Hospital Complex and Firouzar Hospital), Iran, during 2013.

To determine the standard sample size, Altman's nomogram and review of the related literature were performed. According to a study by Asgarpour conducted in 2010, the reported standard deviation for fatigue was 1 in the intervention group (20); therefore, the standard difference was calculated by the formula to be 0.96, and then we put this number in Altman's nomogram. By reading off the nomogram we obtained the standard sample size to be 30 (for each group), at significance level of 5%, with Beta of 0.2, and power of 0.80. To consider the probability of dropout, 35 patients were assigned to each group.

The inclusion criteria included: 1) being in age range of 18-55 years, 2) undergoing chemotherapy, 3) receiving unilateral or bilateral mastectomy, 4) being metastatic, 5) undergoing at least one session of chemotherapy, 6) being married (and their spouses be alive) 7) no having history of addiction, 8) not having history of psychological disorders, 9) not having history of psychiatric hospitalization, 10) not having history of drug abuse, and 11) not having history of other malignancies (breast cancer should not be the result of recurrence).

The exclusion criteria comprised of: 1) presence of stressful events during the last six months, 2) unwillingness to continue participation in the study, 3) death, and 4) hearing or visual impairments, which prevent proper and efficient communication.

Demographic form included items on age, duration of disease (cancer), educational level, income, husband's income, treatment regimen, source of support, presence of metastasis, number of children, and occupation.

Sampling was performed after obtaining approval of the Ethics Committee of Tarbiyat Modarres University of Medical Sciences. The participants were selected by convenience sampling method and were randomly allocated to the two groups. Those who were referred to the centers during the first three days of week were selected as the intervention group and the others were assigned to the control group. Firstly, the necessary information was given to all the participants regarding the study and its objectives. The participants were assured that they had the right to withdraw from the study at any stage, and they were assured of confidentiality of the data. Thereafter, informed written consent was obtained from the patients. The educational information was given to all the participants of the control and intervention groups at the end of the study.

We applied ENRICH Marital Satisfaction scale (2012) for data collection. Content validity of this scale was approved by Olson and Fowers in 1989. This scale is comprised of four subscales including idealistic distortion (measuring the partners' tendency to answer questions in a socially desirable manner and is used to revise individual scores to correct for bias), marital satisfaction, conflict resolution, and communication (25). Enrich Marital Satisfaction scale is a 35-item questionnaire rated using a 5-point Likert scale (totally agree: 1, disagree: 2, undecided: 3, agree: 4, and totally: 5). A total score was assigned to each subscale, then it was converted to percent in accordance with its guide table.

Therefore, the level of marital satisfaction was reported qualitatively. Scores between 85% and 100% were categorized as intensively high, 65-80% as high, 40-60% as moderate, 20-35% as low, and 5-15% as too low, with higher scores indicating higher marital satisfaction. Cronbach's alpha was used

to measure reliability of the sub-scales, which was reported to be 83%, 85%, 91%, and 87% for marital satisfaction, communication, conflict resolution, and ideal distortion sub-scales, respectively. The next scale was Roy Adaptation Assessment scale with four modes of physiological, self-concept, role function, and interdependence. There are a number of questions in each mode, which are used for interviews, observations, and measurement. The individual physiological mode comprises some questions regarding oxygenation, nutrition, elimination, activity and rest, protection, senses, fluids and electrolytes, and acid-base balance, neurologic function, and endocrine function. Self-concept mode is composed of items on physical self, mental self, and self in relation with others, followed by items on family, family roles (roles of wife, mother), and family expectations in the role function mode. Ultimately, the scale comprises of questions regarding patients' social and personal relationships and habits in the interdependence mode. In the intervention group, the questionnaire was filled-out pre- and post-intervention to determine maladaptive behaviors and their stimuli in all the four modes.

The educational support program was based on Roy Adaptation Model as follows:

A. Training sessions with the presence of patients and their husbands;

This section includes four educational parts to improve maladaptive behaviors and their associated issues. Patients in the experimental group were divided into two groups of 20 in the two centers (Cancer Institute and Firouzgar Hospital), the training sessions were held during the first two days of the week for each group (45-minute to one-hour sessions). The sessions were held in the form of questions and answers about the following topics:

- Orientation: providing explanation about the disease, its treatment, treatment's adverse side effects, and care;
- Fatigue, exercise program, and daily activities;
- Familiarity with healthy eating habits;
- Stress and anger management.

B. Peer group: Group meetings were held in the presence of patients with breast cancer, who were recovered and with cooperation of cancer-related nongovernmental organizations. They were asked to talk about how to adapt with disturbed body image. The group discussions lasted for 30-90 minutes (by cancer patients in the recovery phase, members of supportive and nongovernmental organizations), whereby we aimed to promote body image.

• Use of weblog: This is especially for those relatives and patients who were not able to attend the sessions, and it was highly beneficial for providing a chance for learning important points to be used for promoting consistent behavior.

C. Use of virtual and electronic education: This intervention provides the opportunity to receive social support for the development of consistent behaviors by supporting interaction between the research team and patients.

D. Holding a meeting to keep in touch with patients' husbands: All husbands were invited to attend a group learning session. A male psychologist consulted them with their marital problems to maintain a good relationship with their wives. In this session, we mostly focused on how to improve adaptive behaviors and modify major stimuli.

Additionally, during the follow-up phase, patients and their families (caregivers) completed the pre-designed checklists within three months to follow-up implementation of the training materials. Moreover, phone calls were made (once a week for all the patients in the experimental group) to answer their questions and to provide a sense of support by interpreting the word "hands-on" as a constant source of support for patients.

In the control group, patients received the regular treatment sessions. Also, all the training materials necessary for the booklets "Guide to Deal with maladaptive Behaviors for Breast Cancer Patients under Chemotherapy" and "Compatibility and Maintaining Marital Satisfaction along with Problems Experienced during Chemotherapy" were given to the patients in the control group three months after the re-assessment. Data were collected by interviews before and three months after the intervention in both groups (at presentation for drug re-administration) to determine the effect of compatibility training.

To analyze the data, t-test, Pearson's correlation coefficient, Spearman's rank correlation coefficient, and Chi-square tests were run using SPSS, version 19. P-value less than 0.05 was considered statistically significant.

Results

According to Table 1, age of the participants ranged between 30 and 39 years. Fifteen patients in the intervention group (42.9%) had diploma, while 11 patients (32.4%) were undergraduate in the control group.

The majority of the patients sustained metastatic breast cancer. Duration of breast cancer was categorized as under one year and between one and five years in both groups. The patients had received an average of seven sessions of chemotherapy. Both groups listed their children, parents, and spouse as sources of support. Treatment regimen was administered every 21 days in both groups. Generally, 24 (6.68%) patients in the experimental group and 20 (8.58%) patients in the control group were housewives.

In both groups, the majority of cases had no income and their husbands often had a high income of above 5,000,000 IRR per month. Patients in the experimental group (48.6%) had two children on average. Chi-square test reflected no significant differences between the two groups in age, cancer duration, educational level, patients' own and husband's income, support resources, number of children, and treatment regimen ($P > 0.05$). Paired t-test revealed an improvement (its rise from 24.7 ± 2.6 to 32.9 ± 3.5) in marital satisfaction in the intervention group ($P = 0.03$), while it was not significantly different in the control group pre- and post-intervention (26.7 ± 4.6 to 26.5 ± 4.8 ; $P = 0.63$). In the intervention group, 16 maladaptive behaviors were reported after the assessment phase with Roy Adaptation Assessment form in all the four modes of physiological, self-concept, interdependence, and role function. Some maladaptive behaviors were listed as disturbed body image (80%), loneliness (80%), low mood and depression (75%), and anger (56%). In terms of role function, impaired spouse role (85%), impaired maternal role (47%), and impaired social role (42%) were noted. According to the results of paired t-test in the intervention group, there were significant differences in all domains of maladaptive behaviors after the intervention ($P < 0.05$). Maladaptive behaviors reduced to 8.8 ± 2.9 after the intervention in the intervention group, while it was not significantly different in the control group (Table 3).

Data analysis (Table 3) indicated low level of sexual satisfaction (24.7 ± 2.6) and communication (31.5 ± 3.2) in the intervention group before the intervention. Whereas mean conflict resolution score was high (32.2 ± 3.4) with a moderate level of idealistic distortion (16 ± 3.3). The amelioration of maladaptive behaviors increased with promotion of marital satisfaction. Paired sample t-test demonstrated improvement in marital satisfaction and communication to respectively moderate (32.9 ± 3.5) and high (36.4 ± 2.8) levels, the difference between the pre- and post-intervention score was significant ($P < 0.05$). However, no significant differences were observed in the control group in this regard ($P > 0.05$).

Table 1: Absolute and relative frequency of demographic characteristics of mastectomy patients undergoing chemotherapy in the two groups

Demographic variables		Test-group Frequency (%)	Frequency (%)	Test
Age	29-20years	(11.4)4	(11.8)4	$P = 0.71$ $x^2 = 0.8$
	39-30 years	(40)14	(41.2)14	
	49-40 years	(34.3)12	(29.4)10	
	59-50 years	(14.3)5	(17.6)6	
Cancer duration	Below 1 year	(51.4)18	(38.2)13	$P = 0.63$
	1-5 years	(48.6)17	(68.8)21	
Metastasis	Yes	(54.3)19	(47.1)16	$P = 0.5$ Error! Reference source not found.=0.
	No	(45.7)16	(52.9)18	

Components of marital satisfaction	Test group pre-intervention SD±Mean	Test group post-intervention SD±Mean	Paired sample t-test	Control group pre-intervention SD±Mean	Control group post-intervention SD±Mean	Paired sample t-test	Independent t-test post-intervention
Martial satisfaction	6.7±2.24	5.9±3.32	P=0.03 t=2.8	6.7±4.26	8.5±4.26	P=0.63 t=3.2	P<0.001
Communication	4.5±3.31	8.4±2.36	P=0.01 t=6.1	5.76±5.28	5.55±5.28	P=0.36 t=4.6	P=0.001
Conflict resolution	4.2±3.32	3.4±3.33	P=0.04 t=2.03	8.7±3.30	7.7±3.29	P=0.59 t=4.6	P=0.02
Ideal distortion	3.0±3.16	4.3±3.16	P=0.83 t=0.04	4.6±6.16	3.4±3.16	P=0.91 t=0.07	P=0.4

Table 2: Comparison of mean scores of marital satisfaction in breast cancer patients undergoing chemotherapy (both test and control groups) pre- and post-intervention

Table 3: Comparison of mean scores of maladaptive behaviors in the four dimensions of Roy Model in the patients pre- and post-intervention

Maladaptive behaviors in Roy Model	Pre-intervention SD±Mean	Post-intervention SD±Mean	Paired t-test
Physiological mode	8.7±1.7	6.5±1.4	P<0.001 t=1.26
Self-concept mode	9.5±0.3	2.2±1.1	P<0.001 T=6.5
Role function mode	7.5±0.2	6.1±0.2	P<0.001 t=1.43
Interdependence mode	8.9±0.1	.76±0.0	P<0.001 t=3.67
Sum	8.7±2.15	9.8±2.8	P<0.001 t=1.23

Discussion

The present study purported to determine Effect of an educational-supportive program based on Roy Adaptation Model on marital satisfaction in mastectomy patients receiving chemotherapy. According to our data, marital satisfaction expanded to a moderate level (32.9±3.5). Paired sample t-test reflected a significant difference in the two groups pre- and post-intervention.

The results of this study are consistent with those of Rahmani (2010), as it reported mean marital satisfaction score of 90.3±3.58 in patients, and approximately 93.9% of patients were dissatisfied with their marital life. This finding originates from the fact that cancer is a source of stress for patients, leading to low mood, psychological disturbance, and martial dissatisfaction (26). Comparison of martial satisfaction scores between the intervention and control groups revealed a reduction of maladaptive behaviors along with increase of marital satisfaction after the intervention.

The effects of marital dissatisfaction surface in mental and physical well-being (28). Studies demonstrated that marital satisfaction influences various aspects of individual and social life; for instance, studies on physical effects showed that more stable marital life is generally associated with longer, physically healthier, and happier life, which low the risk of cancer (28). On the other hand, marital dissatisfaction appears along with diseases such as cancer, cardiovascular diseases, and chronic pain. The results of the current study confirmed this association. According to our findings, there was no significant relationship between martial satisfaction components and disease duration as well as metastatic or non-metastatic form of cancer.

This study suffers from a number of limitations. It should be noted that there is some degree of bias in patients' response to the marital satisfaction questionnaire. In addition, time dependency of psychological care, lack of access to caregivers or companions, difficulty of commuting (in terms of long distance and patients fatigue), difficulty of access to blogs and communication facilities for

patients, and most importantly, absence of supportive groups in the treatment centers could be considered as confounding variables. For future studies, performing longitudinal studies on this issue is recommended.

Implications for Practice

According to our findings, Roy Adaptation Model can be a suitable framework for designing educational-supportive programs appropriate for nurses to improve marital satisfaction in mastectomy patients undergoing chemotherapy. Accordingly, to improve marital satisfaction in married patients undergoing mastectomy, provision of educational support care is suggested to enhance quality of marital life through application of Roy Adaptation Nursing Model.

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Conflict of interest

The authors declare that there is no conflict of interest.

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