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A Randomized Controlled Trial Regarding the Effectiveness of Group Counseling on Self-efficacy in Mastectomized Women

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Abstract

Objectives: In women with breast cancer, self-efficacy leads to better coping with the disease, improve the mental image, and promote health. This research aimed to investigate the effectiveness of group counseling on self-efficacy in mastectomized patients.

Materials and Methods: This randomized controlled trial was conducted on 76 mastectomized patients who referred to the Breast Cancer Supportive Association and Shahid Ghazi Tabatabaei hospital in Tabriz-Iran during 2017-2018. Participants were randomly allocated to counseling and control groups. Totally, six 60-90-minute counseling sessions were held for the counseling group regarding health promotion and health-promoting lifestyle including self-efficacy. General self-efficacy questionnaire was completed by the patients pre-intervention and 4 weeks post-intervention through interviews. Independent *t* test and analysis of covariance (ANCOVA) test were used to analyze the data.

Results: No significant difference was observed between the study groups in terms of demographic variables and the pre-intervention score of self-efficacy ($P > 0.05$). The results of ANCOVA test by adjusting the pre-intervention score indicated that the mean score of the perceived self-efficacy was significantly more in the counseling group compared to the control group at four weeks post-intervention (adjusted mean difference =7.1; 95 % CI = 5.5 to 10.5; $P < 0.001$).

Conclusions: In general, group counseling can enhance the perceived self-efficacy in mastectomized women. Therefore, considering the role of self-efficacy in promoting the health of breast cancer patients, counseling sessions should be held for mastectomized women to improve their self-efficacy.

Keywords: Self-efficacy, Counseling, Mastectomy, Breast cancer

Introduction

Breast cancer is one of the most common types of cancer among women in all countries (1) and the second reason for cancer deaths throughout the world (2). The incidence rates globally vary by the region. It is 27 per 100 000 in Middle Africa and Eastern Asia, and Western Europe (3). About 246 660 new cases of breast cancer and 40 450 deaths occurred in the United States in 2016 (4). Approximately, 70% of the new cases occur in underdeveloped and developing countries by 2020 (5). Based on the report of population-based cancer registration, breast cancer accounts for 24.8% of all the cancers among women in Iran (6).

Surgical treatment is one of the most commonly used treatments. Eighty-one percent of the surgical procedures conducted for breast cancer in Iran is mastectomy (7). Breast loss has a major impact on the adaptation of women (8). Breast removal by surgery is considered as the destruction of a part of the body which is a symbol of gender, femininity, and maternal dimensions (9). In addition, mastectomy is a difficult process which requires long-term and tedious treatment and can lead to physical, psychological, and social morbidities (10). Further, the patient may face problems in self-care and healthy living. The image of women with breast cancer who use mastectomy surgery can be reviewed in three areas including ability and health, social complications and physical appearance, and sexual attractiveness (11).

Self-efficacy is regarded as one of the effective factors in women's health. It was first defined by Bandura as "a person's confidence in his ability to organize and perform a series of actions to achieve a particular goal." This definition is based on the social learning theory developed by Bandura himself. According to him, one of the main factors in creating motivation for action is the individual's belief in his/her ability to act and affect (12). Self-efficacy in patients with breast cancer results in better coping with cancer diagnosis and therapy, improving the mental

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image, and promoting their health (13). Individuals need to be successful in overcoming the obstacles which may require a change in behavior in order to promote their own health (14). Self-efficacy is an important internal agent for the long-term management of chronic diseases (15). Furthermore, self-efficacy has a vital effect on the patient's adaptation to the challenges of cancer (16).

Counseling is considered one of the most significant interventions for increasing the awareness and improving the self-efficacy and behavior in people (17). It is a guide for teaching the principles and practices of choosing, planning, and continuing a successful life to the clients (18). In counseling groups, cancer patients learn to cope with their own fears and worries and reduce their psychological pressures (19). The results of a study implemented in Iran revealed that telephone counseling improves self-efficacy in breast cancer patients (20). Moreover, research findings demonstrated that cancer patients are less susceptible to the disease, relapse, and feeling of hopelessness if they believe in their self-efficacy (21).

It is believed that people who are confident in their ability, participate actively in the health promotion programs (22). Additionally, self-efficacy is considered an important health promotion of breast cancer patients (16,200). Therefore, the present research was designed to investigate the effectiveness of group counseling on self-efficacy in mastectomized women in order to take effective steps in maintaining and improving the health of these patients.

Materials and Methods

Study Type and Participants

The current randomized controlled trial was performed on 76 mastectomized women (38 in the counseling group vs. 38 in the control group) who referred to the East Azarbaijan Breast Cancer Supportive Association and Shahid Ghazi Tabatabaei hospital in Tabriz during 2017-2018.

Inclusion criteria included age less than 60 years and passing at least 1 and at most 5 years of mastectomy. Exclusion criteria encompassed a history of severe mental illness (e.g., depression, schizophrenia, and the like), the use of psychiatric drugs or psychedelic drugs, other cancers, recent disastrous events, previous participation in lifestyle counseling classes, and women undergoing breast reconstruction surgery.

The sample size was calculated based on the study by Kiaei et al (23) and self-efficacy variable so that by considering m_1= 55.78, 15% increase in self-efficacy score resulted from intervention (m_2 = 15.64), sd1 & sd2 = 11.0, α = 0.05 and power = 90%, the sample size was calculated to be 31, which was considered 38 in each group considering the 20% attrition.

Sampling

In this study, sampling was started after approving the research by the Ethics Committee of Tabriz University of Medical Sciences under the code of IR.TBZMED.REC.1396.900 and then registering it on the website of the Iranian Registry of Clinical Trials (identifier: IRCT2017062510324N40). The initial sampling was as the convenience in the Breast Cancer Supportive Association and Shahid Ghazi Tabatabaei hospital of Tabriz. The researcher referred to the association and hospital and selected mastectomized women in a convenience method so that the participants or the women referring to the association join the association or participate in the association programs. In addition, those who referred to Shaheed Ghazi Tabatabaei hospital to follow up the treatment were selected. The selected participants were examined in terms of inclusion and exclusion criteria. Then, the objectives and methods of the study were completely explained to the patients and in the case of having the eligibility criteria and willing to participate, they were included in the study. Informed written consent was obtained accordingly. Then, the questionnaires related to demographic information and perceived self-efficacy were completed through interviews with the participants.

Randomization

Participants were assigned into intervention (counseling) and control groups through block randomization method with block sizes of four and six and an allocation ratio of 1:1. Further, for allocation concealment, the type of intervention was written on a piece of paper and placed inside the opaque envelopes which were numbered sequentially. The envelopes were opened based on the entry of the participants to the study and then the type of group was determined.

Intervention

Six consecutive 60-90-minute group counseling sessions were held for the intervention group respecting health promotion and the health-promoting lifestyle including self-efficacy by the first author at one-week intervals. The sessions were held at the Breast Cancer Supportive Association in a room designed for counseling. Counseling principles were observed in all sessions in order to establish effective communication. Furthermore, the counseling content included self-efficacy and empowerment on health-promoting behaviors such as nutrition, physical activity, stress control, health responsibility, spiritual growth and interpersonal relationships, and self-care. The number of participants in each session was at least 4 and at most 8. Finally, the atmosphere of the sessions was associated with respect and intimacy in order to reinforce the participant's self-esteem and provide a platform for people's participation in group discussions.

Instruments

In this research, demographic information and self-efficacy questionnaires were applied. The demographic

information questionnaire included items about age, marital status, child number, level of education, job, husband's education level and job, body mass index (BMI), income adequacy, residence, and life satisfaction. Content and face validity were used to confirm the validity of this questionnaire.

Moreover, the self-efficacy questionnaire was developed by Sherer et al. It has 17 questions based on a Likert scale ranging from totally agree (score 5) to totally disagree (score 1). Some questions are reverse-scored. The attainable range score is 17 to 85. This scale was validated by Barati in Iran and Cronbach α was reported as 0.79 (24).

Statistical Analysis

Data were analyzed using the SPSS software, version 21. All data had normal distribution based on Kolmogorov-Smirnov test. The chi-square for trend, Fisher exact, and independent *t* tests were used to investigate the consistency of the groups in terms of demographic information. Additionally, the mean score of pre-intervention self-efficacy was compared between the groups by independent *t* test and that of the post-intervention self-efficacy was compared between the groups using analysis of covariance (ANCOVA) by adjusting the pre-intervention score.

Results

The research was implemented during (October) 2017-(early July) 2018. Twenty-four out of the 100 mastectomized patients were excluded due to the lack of eligibility criteria. These patients were excluded since they were 60 or higher (n = 6), in the stage of chemotherapy or radiation therapy (n = 10), passing more than ten years of mastectomy (n = 6), and unwillingness to participate in the study (n = 2). The remaining 76 participants completed demographic information and general self-efficacy questionnaires and were included in counseling (n = 38) and control (n = 38) groups. Thirty-five patients were evaluated in a post-intervention period in both intervention and control groups 4 weeks after the intervention (Figure 1).

No significant difference was observed between the study groups in terms of demographic variables ($P > 0.05$). The average (SD) age of the participants was 50.2 (6.7%) in the counseling group and 47.2 (9.1%) years in the control group. In addition, the average duration of marriage was 29.1 (7.9%) and 26.3 (11.0) years in the counseling and control groups, respectively. Further, the mean BMI was

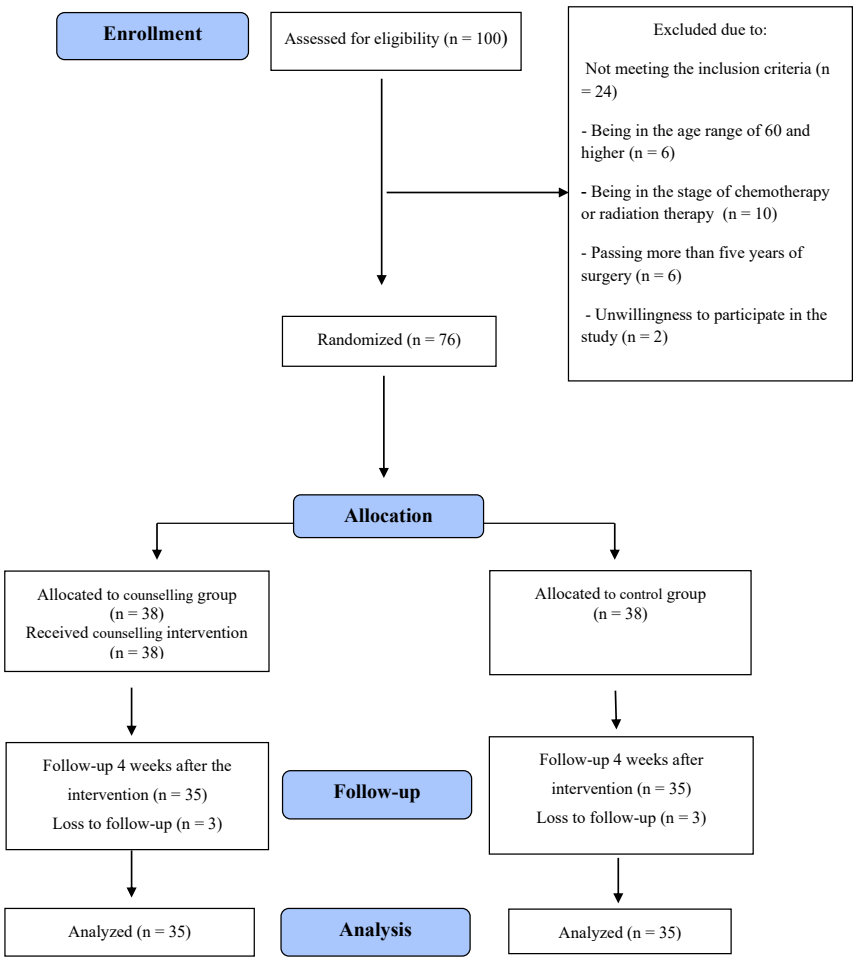

Figure 1. Flow Diagram of the Study.

28.8 (3.6%) in the counseling group while it was 27.7 (3.2%) in the control group. The mean (SD) elapsed time from mastectomy was 3.8 (2.3%) in the counseling group and 4.3 (2.8%) in the control group. Furthermore, 33 (86.3%) women in the counseling group and 34 (89.5%) women in the control group were housewives. In terms of education, 7 (18.4%) women in the counseling group and 6 (15.8%) women in the control group had a university education. All women in the counseling group and 84.2% of them in the control group were married. As regards income, 18 (47.4%) participants in the counseling group and 19 (50.0%) of them in the control group had inadequate income. Moreover, 19 (51.4%) participants in the counseling group and 24 (63.2%) women in the control group had a satisfactory level of life. Approximately one-fourth of spouses in both counseling (26.5%) and control (25%) groups had a university education. Finally, only 2 (5.3%) husbands in the counseling group were unemployed (Table 1).

Based on the results, no significant difference was observed between the groups regarding pre-intervention mean score of self-efficacy ($P = 0.642$). Additionally, the mean (SD) of self-efficacy score in the counseling group was improved from 60.3 (8.0%) before the intervention to 65.7 (6.1%) during 4 weeks after the intervention However, in the control group, the mean (SD) of self-efficacy reduced from 59.5 (7.2%) before the intervention to 57.2 (8.6%) during 4 weeks post-intervention. Based on the ANCOVA test by adjusting the pre-intervention score, the mean of self-efficacy score was significantly more in the counseling group compared to the control group during 4 weeks after the intervention (adjusted mean difference = 7.1. 95% Confidence interval = 10.5 to 5.5, $P < 0.001$) (Table 2 and Figure 2).

Table 1. Sociodemographic Characteristics of the Participants

Characteristics	Counselling Group (n = 38) No. (%)	Control Group (n = 38) No. (%)	*P* Value
Age (y)[a]	50.2 (6.7)	47.2 (9.1)	0.111[b]
Body mass index[a]	28.8 (3.6)	27.7 (3.2)	0.159[b]
Marriage age[a]	29.1 (7.9)	26.3 (11.0)	0.129[b]
Elapsed time from mastectomy[a]	3.8 (2.3)	4.3 (2.8)	0.335[b]
Disease grade			0.851[c]
1	2 (5.3)	2 (5.3)	
2	35 (92.1)	33 (86.8)	
3	1 (2.6)	3 (7.9)	
Educational level			0.939[d]
Primary school	11 (28.9)	10 (26.3)	
Secondary school	6 (15.8)	6 (15.8)	
High School	4 (10.5)	5 (13.2)	
Diploma	10 (26.3)	11 (28.9)	
University	7 (18.4)	6 (15.8)	
Participant's job			1.000[c]
Housewife	33 (86.3)	34 (89.5)	
Employed	5 (13.2)	4 (10.5)	
Number of children			0.474[c]
1	3 (7.9)	7 (18.9)	
2	7 (18.9)	18 (48.6)	
3	8 (21.1)	9 (24.3)	
4	4 (10.5)	3 (8.1)	
Marital status			0.170[c]
Single	0	1 (2.6)	
Married	38 (100)	32 (84.2)	
Divorced	0	2 (5.3)	
Husband's job			0.256[c]
Employee	2 (5.3)	0 (0)	
Working	15 (39.5)	9 (24.3)	
Shopkeeper	6 (12.0)	10 (20.0)	
Emeritus	15 (30.0)	8 (16.0)	
Other	12 (31.6)	16 (43.2)	
Spouse's education level			0.726[d]
Primary school	8 (21.1)	8 (22.1)	
Secondary school	8 (21.1)	9 (25.0)	
Diploma	12 (31.6)	10(27.8)	
University	10 (26.3)	9 (25.0)	
Family income			0.207[d]
Enough	13 (34.2)	5 (13.2)	
Quite enough	7 (18.4)	14 (36.8)	
Inadequate	18 (47.4)	19 (50.0)	
Life satisfaction			0.69[d]
Completely satisfied	14 (37.8)	7 (18.4)	
Fairly satisfied	19 (51.4)	24 (63.2)	
Dissatisfied	4 (10.8)	7 (18.4)	

[a] The numbers indicate the mean (standard deviation); [b] Independent *t* test; [c] Fisher exact test; [d] Chi-square for the trend.

Discussion

The findings of this study indicated that counseling improved self-efficacy in mastectomized patients. Given that no similar study was performed to investigate the effectiveness of group counseling on the self-efficacy of mastectomized patients, the results of the studies related to the impact of education or counseling in other groups were presented.

The results of a quasi-experimental study on 32 patients with breast cancer demonstrated that counseling with cognitive behavior therapy approach promoted the patients' self-efficacy (25). Another study on 64 breast cancer patients in Tehran revealed that telephone counseling increased the patients' level of self-efficacy three months after the intervention (20). In addition, Varaei et al in their research on hospitalized patients with coronary bypass surgery found that self-efficacy mean score in the peer education group was significantly more than that of the control group after the intervention (26). Zhang et al assessed the impact of self-efficacy promoting interventions on colorectal cancer patients and concluded that the self-efficacy mean score in the intervention group increased significantly after the combined intervention (e.g., face to face education, brochure, music, CD, and telephone counseling) compared to the control group at 3 and 6 months post-intervention (27). Further, Kara et al, examining people with a chronic obstructive pulmonary disease represented that education significantly increased the rate of self-efficacy in these patients (28). However,

Table 2. Comparison of Self-efficacy Score by the Study Groups

Time of Assessment	Counseling Group Mean (SD)	Control Group Mean (SD)	AMD (95% CI)	*P* Value
Before intervention	60.3 (7.8)	59.5 (7.2)	0.8 (-2.7 to 4.3)	0.642
Four weeks after intervention	65.7 (6.1)	57.2 (8.6)	7.1 (5.5 to 10.5)	<0.001

Abbreviations: SD, Standard deviation AMD, Adjusted mean difference.
Note: Independent t-test was used to compare the groups before the intervention. In addition, ANCOVA test was employed to compare the groups after the intervention by adjusting the baseline score. Further, the number of participants in both groups was 38 before the intervention while 4 weeks after the intervention it decreased to 35 persons.

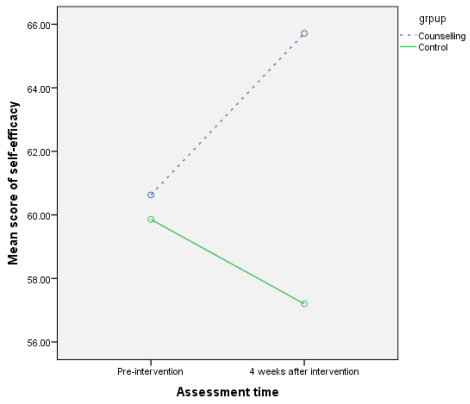

Figure 2. The Trend in Mean Score of Self-efficacy at Pre-intervention and 4 Weeks After the Intervention by the Study Groups Based on Repeated-Measures ANOVA.

the findings of another research on psychological well-being including self-efficacy in patients treated for cancers indicated that an educational program had no effect on self-efficacy (29).

The results of all of the above-mentioned studies except for one study are in line with the findings of the present study. Therefore, considering that self-efficacy plays an important role in improving the health of the patients, health providers should attempt to improve these patients' self-efficacy through proper planning and counseling sessions and training. Women are considered as one of the most important members of the society and the family since women's health is based on the health of the community and the family and thus has particular significance in promoting and maintaining the health of the family and society (30). Given the increased incidence of breast cancer in the country (31) and the increase in survivors and that the survivors have the risk for other cancers and diseases (32), policy-makers and health providers should emphasize the role of self-efficacy in improving the health of the women.

There are different treatments for breast cancer including surgery, radiation therapy, chemotherapy, and hormone therapy (33). The consequences of breast cancer and its therapeutic methods such as surgery include mental disorders, especially mood disorders (i.e., anxiety, depression, and anger) and changes in lifestyle, fear, and anxiety regarding body image, recurrence of disease, and death (34). Furthermore, women undergo a lot of stress after mastectomy, therefore, their life expectancy is reduced and they are prone to a mood disorder (35). Denewer et al reported a strong relationship between hope and social support and found that social support can predict the amount of hope among mastectomized patients (36).

In this study, the principles of the randomized controlled trial including random allocation and allocation concealment were observed. However, blinding was not possible due to the type of intervention. Using a valid questionnaire for measuring the self-efficacy was a strong point of his research. However, one of the limitations of this study is that it assessed the effectiveness of counseling only in patients who referred to Breast Cancer Supportive Association and Shaheed Ghazi Tabatabaei hospital for the follow-up treatment. Accordingly, the results cannot be generalized to other contexts. Moreover, as only women within the age range of 60 and lower who passed at least 1 and at most 5 years of mastectomy were included in the study, the results are not easily generalizable to patients whose age is higher than 60 and passed more than 5 years of mastectomy. Other limitations of the current study include the impossibility of full implementation in medical settings due to the poor physical and psychological status of the patients, the lack of appropriate counseling space in medical centers and the referral of patients to private clinics, and lack of access to these patients. Therefore, patients who represented a tendency toward participating in the research were invited to attend the Breast Cancer Supportive Association due to its appropriate counseling environment.

Conclusions

Generally speaking, counseling can enhance perceived self-efficacy in mastectomized women. As a result, considering the role of self-efficacy in promoting the women's health, counseling sessions should be held for mastectomized women in order to improve their self-efficacy. Eventually, concerning the problems which these patients encounter such as stress, anxiety, sexual relations, and nutrition, they should be advised to receive counseling on relevant issues.

Conflict of Interests

Authors have no conflict of interests.

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References

1. Lodha RS, Nandeshwar S, Pal DK, et al. Risk factors for breast cancer among women in Bhopal urban agglomerate: a case-control study. Asian Pac J Cancer Prev. 2011;12(8):2111-2115.
2. de Martel C, Ferlay J, Franceschi S, et al. Global burden of cancers attributable to infections in 2008: a review and synthetic analysis. Lancet Oncol. 2012;13(6):607-615. doi:10.1016/s1470-2045(12)70137-7
3. Ferlay J, Soerjomataram I, Dikshit R, et al. Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 2012. Int J Cancer. 2015;136(5):E359-386. doi:10.1002/ijc.29210
4. Siegel RL, Miller KD, Jemal A. Cancer statistics, 2016. CA Cancer J Clin. 2016;66(1):7-30. doi:10.3322/caac.21332
5. Matovu A, Scheel JR, Shadrack PA, et al. Pilot study of a resource-appropriate strategy for downstaging breast cancer in rural Uganda. J Glob Radiol. 2016;2(1):Article 1. doi:10.7191/jgr.2016.1021
6. Jazayeri SB, Saadat S, Ramezani R, Kaviani A. Incidence of primary breast cancer in Iran: Ten-year national cancer registry data report. Cancer Epidemiol. 2015;39(4):519-527. doi:10.1016/j.canep.2015.04.016
7. Brunner LS. Brunner & Suddarth's textbook of Medical-Surgical Nursing. 11th ed. Philadelphia: Lippincott Williams & Wilkins; 2010.
8. Najafi M, Ebrahimi M, Kaviani A, Hashemi E, Montazeri A. Breast conserving surgery versus mastectomy: cancer practice by general surgeons in Iran. BMC Cancer. 2005;5:35. doi:10.1186/1471-2407-5-35
9. Kunkel E, Chen EI, Okunlola TB. Psychosocial concerns of women with breast cancer. Prim Care Update Ob Gyns. 2002;9(4):129-134. doi:10.1016/S1068-607X(02)00103-8.
10. Guner SI, Kaymakci S. The examination of the relationship between health promotion life-style profile and self-care agency of women who underwent mastectomy surgery. East J Med. 2014;19(2):71-78.
11. Hormes JM, Lytle LA, Gross CR, Ahmed RL, Troxel AB, Schmitz KH. The body image and relationships scale: development and validation of a measure of body image in female breast cancer survivors. J Clin Oncol. 2008;26(8):1269-1274. doi:10.1200/jco.2007.14.2661
12. Bandura A. Social cognitive theory: an agentic perspective. Annu Rev Psychol. 2001;52:1-26. doi:10.1146/annurev.psych.52.1.1
13. Liang SY, Chao TC, Tseng LM, Tsay SL, Lin KC, Tung HH. Symptom-Management Self-efficacy Mediates the Effects of Symptom Distress on the Quality of Life Among Taiwanese Oncology Outpatients With Breast Cancer. Cancer Nurs. 2016;39(1):67-73. doi:10.1097/ncc.0000000000000244
14. Baheiraei A, Mirghafourvand M, Charandabi SM, Mohammadi E. Facilitators and Inhibitors of Health-promoting Behaviors: The Experience of Iranian Women of Reproductive Age. Int J Prev Med. 2013;4(8):929-939.
15. Senecal C, Nouwen A, White D. Motivation and dietary self-care in adults with diabetes: are self-efficacy and autonomous self-regulation complementary or competing constructs? Health Psychol. 2000;19(5):452-457.
16. Duggleby W, Doell H, Cooper D, Thomas R, Ghosh S. The quality of life of male spouses of women with breast cancer: hope, self-efficacy, and perceptions of guilt. Cancer Nurs. 2014;37(1):E28-35. doi:10.1097/NCC.0b013e31827ca807
17. Lin JS, O'Connor E, Evans CV, Senger CA, Rowland MG, Groom HC. Behavioral counseling to promote a healthy lifestyle in persons with cardiovascular risk factors: a systematic review for the U.S. Preventive Services Task Force. Ann Intern Med. 2014;161(8):568-578. doi:10.7326/m14-0130
18. Shafiabadi A. Educational and vocational guidance and counseling. Tehran: Samt; 2004.
19. Wu SM, Brothers BM, Farrar W, Andersen BL. Individual counseling is the preferred treatment for depression in breast cancer survivors. J Psychosoc Oncol. 2014;32(6):637-646. doi:10.1080/07347332.2014.955239
20. Pedram Razi S, Satiyarvand A, Tabari F, Kazemnejad A, Tiz Maghz Z, Navidhamidi M. The effect of education and telephone counseling on the self- efficacy of women with breast cancer undergoing radiotherapy. Iran J Nurs Res. 2018;13(1):64-71. doi:10.21859/ijnr-13019
21. Pecukonis EV. Physical self-efficacy and alexithymia in women with chronic intractable back pain. Pain Manag Nurs. 2009;10(3):116-123. doi:10.1016/j.pmn.2008.11.001
22. Bandura A. Self-efficacy: The exercise of control. New York, NY, US: W H Freeman/Times Books/ Henry Holt & Co; 1997.
23. Kiaei MZ, Ferdosi M, Moradi R, Chelongar Q, Ahmadzadeh MS, Bahmanziari N. Association between self-efficacy and quality of life in women with breast cancer undergoing chemotherapy. J Qazvin Univ Med Sci. 2016;20(2):65-58.
24. Barati BS. The simple and multiple relationships between self-effectiveness, self-discovery and self-esteem with academic performance of students in the third years of the new system in Ahvaz. Ahvaz, Iran: Shahid Chamran University of Ahvaz; 1997.
25. Moradi Manesh F, Babakhani K. Effectiveness of cognitive-behavioral group therapy on self-efficacy and quality of life in women with breast cancer: a clinical trial. Iran J Breast Dis. 2018;10(4):7-17.
26. Varaei S, Shamsizadeh M, Cheraghi MA, Talebi M, Dehghani A, Abbasi A. Effects of a peer education on cardiac self-efficacy and readmissions in patients undergoing coronary artery bypass graft surgery: a randomized-controlled trial. Nurs Crit Care. 2017;22(1):19-28. doi:10.1111/nicc.12118
27. Zhang M, Chan SW, You L, et al. The effectiveness of a self-efficacy-enhancing intervention for Chinese patients with colorectal cancer: a randomized controlled trial with

6-month follow up. Int J Nurs Stud. 2014;51(8):1083-1092. doi:10.1016/j.ijnurstu.2013.12.005
28. Kara M, Asti T. Effect of education on self-efficacy of Turkish patients with chronic obstructive pulmonary disease. Patient Educ Couns. 2004;55(1):114-120. doi:10.1016/j.pec.2003.08.006
29. Branstrom R, Kvillemo P, Moskowitz JT. A randomized study of the effects of mindfulness training on psychological well-being and symptoms of stress in patients treated for cancer at 6-month follow-up. Int J Behav Med. 2012;19(4):535-542. doi:10.1007/s12529-011-9192-3
30. Baheiraei A, Mirghafourvand M, Mohammodi E, Mohammad-Alizadeh C, Nedjat S. Determining appropriate strategies for improving women's health promoting behaviours: using the nominal group technique. East Mediterr Health J. 2013;19(5):409-416.
31. Mousavi SM, Montazeri A, Mohagheghi MA, et al. Breast cancer in Iran: an epidemiological review. Breast J. 2007;13(4):383-391. doi:10.1111/j.1524-4741.2007.00446.x
32. Bower JE, Ganz PA, Desmond KA, et al. Fatigue in long-term breast carcinoma survivors: a longitudinal investigation. Cancer. 2006;106(4):751-758. doi:10.1002/cncr.21671
33. Nounou MI, ElAmrawy F, Ahmed N, Abdelraouf K, Goda S, Syed-Sha-Qhattal H. Breast Cancer: Conventional Diagnosis and Treatment Modalities and Recent Patents and Technologies. Breast Cancer (Auckl). 2015;9(Suppl 2):17-34. doi:10.4137/bcbcr.s29420
34. Weitzner MA, Meyers CA, Stuebing KK, Saleeba AK. Relationship between quality of life and mood in long-term survivors of breast cancer treated with mastectomy. Support Care Cancer. 1997;5(3):241-248.
35. Heidari M, Ghodusi M, Naseh L, Sheikhi RA. Correlation between Hope and Mental Health after Mastectomy in Breast Cancer Survivors. J Health Care. 2015;17(1):40-46.
36. Denewer A, Farouk O, Mostafa W, Elshamy K. Social support and hope among egyptian women with breast cancer after mastectomy. Breast Cancer (Auckl). 2011;5:93-103. doi:10.4137/bcbcr.s66