

Life Skills Training Effectiveness on Non-Metastatic Breast Cancer Mental Health: A Clinical Trial

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Abstract

Background: Patients with breast cancer are predisposed to some psychiatric symptoms and mental disorders as a result of their diagnosis or lifestyle. These problems cause patients to have daily stress, feelings of guilt, anxiety, a dysphoric mood, and impaired social relations. Such problems will lead to serious mental disorders. Therefore, life skills training may enable patients to cope better with these problems and improve their mental health.

Methods: In an experimental study 50 breast cancer patients were randomly selected and assigned to two groups, experimental and control. The experimental group attended life skills training classes continuously for ten weeks. The duration of each class was two hours. Participants in both groups completed a General Health Questionnaire-28 form before the commencement of classes, after two weeks of training, and again at two months after course completion. The statistical method used in this study was the t-test.

Results: In the life skills training group, patients' depressive and anxiety symptoms, somatization disorders, sleep disorders, and disorders of social functioning significantly decreased ($P < 0.0001$). There was no change in the control group.

Conclusion: The results show that life skills training can be considered a supportive method for symptoms of depression, anxiety, sleep, and somatic disorders in patients with breast cancer.

Keywords: Breast cancer, Life skills training, GHQ-28, Quality of life

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Introduction

Breast cancer is the most common type of cancer among women worldwide¹⁻³, and accounts for approximately one-fifth of all deaths in women aged 40–50 years.⁴ In Iran, the incidence of new cases of breast cancer is estimated at 20 per 10⁵ women and one out of every 10 women will develop breast cancer.⁵⁻⁷

Treatment options include surgery, radiotherapy, and chemotherapy to increase disease-free survival, better tumor response, and improvements in overall survival. On the other hand, complications from cancer and therapies have confronted patients with terrifying psychological experiences and morbidities such as anxiety, depression, and poor quality of life (QoL). Previous literature reviews have indicated that psychological therapies and life skills training may help cancer patients by increasing their knowledge about their disease and treatment, by improving their emotional adjustment, satisfaction, and physical wellbeing, and by reducing treatment and disease-related symptoms.⁸⁻¹²

Therefore, besides improving conditional therapies for breast cancer patients, the tendency to use new types of psychological intervention is increasing. One of these psychological packages is the life skills training program defined by the World Health Organization (WHO) as the ability for adaptive and positive behavior that enables individuals to deal effectively with the demands and challenges of everyday life. This program

consists of ten abilities.¹³

We designed a clinical trial to examine the effects of life skills training on psychologic distress and coping among Iranian women with primary breast cancer.

Materials and Methods

Subjects

We selected 50 patients with breast cancer who referred to the Department and Clinic of Oncology in Vali-e-Asr Hospital. The study protocol was reviewed and approved by the Department of Internal Medicine and the Ethics Committee of the Zanzan University of Medical Sciences, Iran. Eligibility criteria for the current study population were: 1) age younger than 65 years; 2) diagnosis of stages I, II, or III breast cancer; 3) completed standard therapy (including mastectomy, chemotherapy, and radiotherapy); and 4) intent to undergo hormone therapy during the clinical trial. We excluded all ER- or PR-receptor patients. Additional exclusion criteria included mental disorders, dementia, psychosis or acute psychological disorders (i.e., major depression), or cancer at another site. None of the subjects received psychological counseling before study participation.

Eligible subjects were informed about this psychosocial group intervention and life skills training study. They were told that all cancer patients experienced psychologic distress and that this life skills training is useful for improving the



Figure 1. Comparison of mean score changes in psychological symptoms according to General Health Questionnaire-28 (GHQ) before and after life skills training in experimental and control groups.

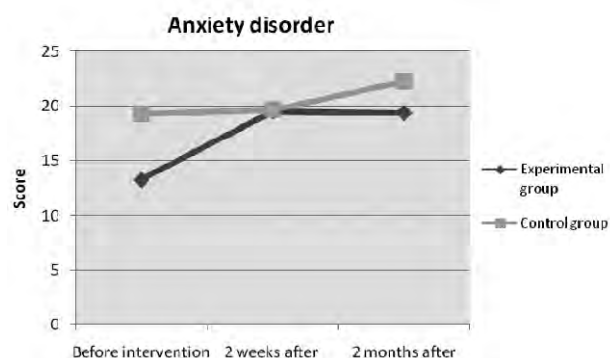


Figure 2. Comparison of mean score changes in anxiety symptoms according to General Health Questionnaire-28 (GHQ) before and after life skills training in experimental and control groups.

QoL of patients with breast cancer according to research performed in other countries. All patients provided written informed consent before assessment.

Intervention protocol

Patients who wished to participate in the intervention and met the eligibility criteria were randomly categorized into either the experimental group (n=25) or a wait-list control group (n=25) using their birth certificate number.

The demographic information of patients included: age, education, number of children, occupation, income, and duration of breast cancer. These were recorded using a questionnaire.

Previous studies have shown that individual intervention is time consuming and costly in comparison to group intervention.¹⁴⁻¹⁸ Group intervention is as effective in solidarity and in interactions between group members for emotional draining.^{15,19,20} Thus, we chose a group model in this study.

We presented ten sessions, lasted for two hours every week. In these workshops, ten life skills and techniques as recommended by the WHO (decision making, problem solving, creative thinking, critical thinking, communication skills, interpersonal relationships, self confidence, feeling empathy, emotion handling, and tension handling)¹⁸ in addition to the application of these skills in patients' lives were taught by trained, qualified teacher under the supervision of

Table 1. Demographic and psychologic characteristics of breast cancer patients.

Demographics	Experimental group (n=25)	Control group (n=25)	P-value
Occupation			
Housewife	23	21	0.384
Employed	2	4	
Education			
Illiterate	2	2	0.972
Elementary school	15	14	
High school	6	6	
University	2	3	
Children (n)			
2	4	4	0.570
3	7	9	
4	8	7	
5	4	4	
6	2	1	
Monthly income			
Under \$200	8	9	0.765
Over \$200	17	16	
Illness awareness (year)			0.897

psychologists. At the end of each session, subjects were assessed about the skill discussed in that session and their problems were solved by trainers.

Measurement

The General Health Questionnaire-28 (GHQ) was designed by Goldberg.²¹ Its reliability and validity have been assessed^{15,22} and standardized for screening in the Persian language. The GHQ consists of four subscales: 1) somatization

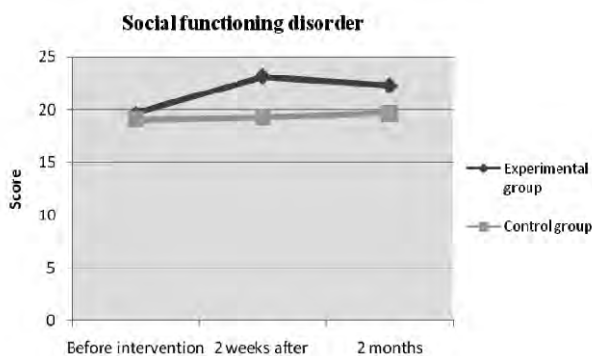


Figure 3. Comparison of mean score changes in social functioning disorder according to General Health Questionnaire-28 (GHQ) before and after life skills training in experimental and control groups.

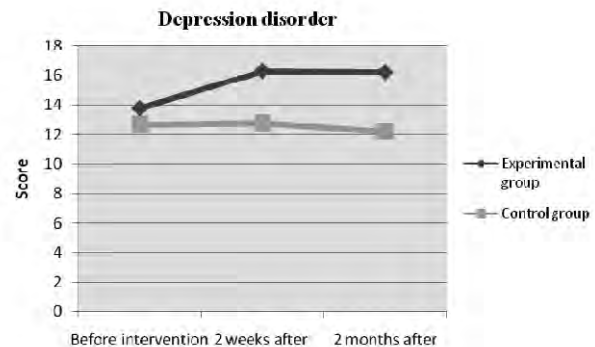


Figure 4. Comparison of mean score changes in depression disorder according to General Health Questionnaire-28 (GHQ) before and after life skills training in experimental and control groups.

Table 2. Scores for the 4 General Health Questionnaire-28 (GHQ) subsections of the experimental and control groups before and after training.

Subsections	Experimental group (n=25)			Control group (n=25)		
	Before	2 weeks after	2 months after	Before	2 weeks after	2 months after
Psychosomatic symptoms	19	21.68	20.6	19.52	19	19.64
Anxiety and sleep disorders	13.28	19.52	19.36	19.28	19.65	22.28
Social function disorder	19.64	23.12	22.28	19.04	19.24	19.64
Depression disorder	13.76	16.28	16.20	12.64	12.76	12.2
Total score	65.68	80.6	78.4	70.48	70.46	73.76

symptoms, 2) anxiety and sleeping disorders, 3) social functioning, and 4) depression (D). Each subscale contains seven 'here and now' questions. The GHQ scoring system is based on a range from psychological discomfort (lowest score=1) to psychological health (highest score=4). The total score of each question varies from 7 to 28 and the total score range of the GHQ is estimated to be from 28 to 112.

In this questionnaire, psychiatric symptoms and abnormal behaviors of patients were elicited.

Subjects completed a GHQ-28 immediately prior to the training workshop, at the end of two weeks of training, and finally two months after completion of the training courses. A lower score indicated a more impaired psychological condition.

Statistical analysis

Statistical analysis was carried out using the Statistical Package for Social Sciences (SPSS version 16). Mean values (\pm SEM), median, and ranges are shown. Descriptive statistical methods were used where appropriate. Demographic and clinical characteristics as well as baseline psychologic scores were tested by the student's t-test. Preliminary analyses included descriptive and bivariate analyses (i.e., analyses of variance)

and an examination of the comparability between groups on socio-demographic, medical, and baseline QOL characteristics.

Results

This study was conducted among 50 breast cancer patients diagnosed with stages I, II, and III breast cancer who had completed their standard therapy before psychological intervention. We randomly divided patients into experimental and control groups.

The mean age of 46.7 ± 9.3 years old in the intervened patients compared with the mean age of 45.7 ± 8.9 in controls was not significant

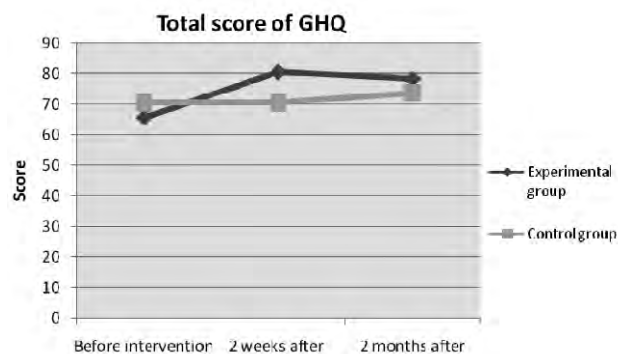


Figure 5. Comparison of mean score changes in total General Health Questionnaire-28 (GHQ) score before and after life skills training in experimental and control groups.

Table 3. Comparison of mean changes in the scores of the 4 subsections prior to training, 2 weeks after training, and 2 months after training.

Symptom/disorder	Group (n=25)	Before and 2 weeks after	P-value	Mean changes		2 weeks after and 2 months after	P-value
				Before and 2 weeks after	P-value		
Psychosomatic symptoms	Experimental	2.86	<0.00001	1.6	<0.00001	1.8	0.002
	Control	-0.62		0.12		0.64	
Anxiety and sleep disorder	Experimental	6.24	<0.00001	6.08	0.001	-0.16	<0.00001
	Control	-0.36		3		2.64	
Social function disorder	Experimental	3.48	<0.00001	2.64	0.001	-0.84	0.02
	Control	0.2		0.6		0.4	
Depression disorder	Experimental	2.52	<0.0001	2.44	0.0001	-0.08	0.28
	Control	0.12		-0.044		-0.56	
Total score disorder	Experimental	14.94	<0.0001	12.76	<0.0001	-2.16	<0.0001
	Control	0.16		3.28		3.12	

($P=0.714$). The demographic and social characteristics of both groups are summarized in Table 1. Both groups were similar in terms of occupation, education level, number of children, and monthly income. The mean time of illness awareness for the experimental group was 2.64 ± 1.22 years and for the control group it was 2.68 ± 1.94 years ($P=0.897$).

GHQ scores of 4 subcategories included somatization symptoms, anxiety and sleep disorders, social function disorder, and depression disorder (Table 2).

Data analysis indicated that the somatization symptoms score increased significantly two weeks after intervention ($P<0.001$) and persisted at the two months assessment ($P<0.00001$). These differences were not observed in the control group.

Anxiety and sleep disorder assessment of the experimental group revealed a considerable increase in this score before skill training (13.2 ± 2) compared with two weeks after training (19.5 ± 2 ; $P<0.00001$). Changes in anxiety and sleep disorders continued after two months ($P<0.001$).

After two weeks of the life skills training workshop, the social function disorder scale improved to 23.1 ± 1 ($P<0.0001$); after two months this was a statistically significant increase when

compared with baseline ($P<0.001$).

The mean score of the depression disorder phase before the experiment was 13.7 ± 4 ; at two weeks after the experiment it increased to 16.2 ± 4 ; two months later it was 16.2 ± 2 . This score for the control group at baseline was calculated as 12.6 ± 1 , which was not different at either two weeks or two months after reassessment.

The total score of the questionnaire in the experimental group was estimated at 65.68 before intervention, but increased to 80.6 after the two week workshop, which was statistically significant. This persisted after two months. These changes were not observed in the control group (Table 2).

The mean changes were also compared between both groups in three categories: 1) before and two weeks after intervention, 2) before and two months after, and 3) two weeks and two months after. Results demonstrated that differences between the means of changes were considerable in the experimental group (Table 3). The mean score of these four subcategories before, two weeks, and two months after the life skills training workshop are illustrated in Figures 1-5.

Discussion

Breast cancer is the most common type of cancer among women worldwide. It is a terrifying disease due to a high mortality rate and body image distortion.¹⁻³ Most breast cancer patients have psychological reactions such as denial, anger, or fear toward their disease and treatment process. Many patients have psychiatric morbidities, in particular anxiety and depressive disorders.²³⁻²⁵ The range of anxiety disorder prevalence in breast cancer varies from 1% to 49%,²⁵ while depressive disorder ranges from 1.5% to 46%.^{26,27}

In recent years, there has been an increasing interest in various aspects of mental health. It is presumed that psychosocial intervention could reduce the morbidity of breast cancer patients and improve the QoL of cancer patients in general. These effects have been studied over the past two decades.²⁸⁻³⁴

Health promotion is defined as “any deliberate intervention which seeks to promote health and prevent disease disability”.³⁵⁻³⁸ The WHO has defined a training program with the aim of mental health promotion, which is named the ‘life skills’. This is defined as the ability for adaptive and positive behavior that enables individuals to deal effectively with the demands and challenges of everyday life.¹³ The main purpose of life skills training is to promote healthy lifestyles through skills education.

The following life skills as recommended by the WHO¹⁸ are:

1- The ability to make decisions helps people assess their options and carefully consider the different consequences that can result from their choices.

2- The ability to solve problems helps people find constructive solutions to their problems. This skill can significantly reduce anxiety.

3- The capacity to think creatively helps people make decisions, solve problems, and look beyond their personal experience.

4- The capacity to think critically helps people analyze information along with their own experiences.

5- The ability to communicate effectively helps

people express their feelings, needs, and ideas to others.

6- The ability to establish and maintain interpersonal relations helps people interact positively with people whom they encounter daily, particularly family members.

7- Knowledge of self is the capacity of people to know who they are, what they want and do not want, and what does and does not please them, which helps people recognize stressful situations.

8- The capacity to feel empathy is the ability to imagine what life is like for another person in a very different situation. It helps people to understand and accept diversity, and it also improves interpersonal relations between diverse individuals.

9- The ability to handle emotions enables subjects to recognize their emotions and how they influence their behaviors.

10- The ability to handle tension and stress.^{34,39}

The efficacy of life skills training and psychological intervention depends on numerous variables in⁴⁰ patients’ clinical and demographic characteristics such as cancer stage and course of the disease, medical treatment, age, gender, educational level, income, and occupation.⁴¹ It also depends on the type and duration of psychosocial interventions. For example, the result of a meta-analysis has indicated that the most important moderating variable was the duration of psychosocial intervention; durations over 12 weeks would be significantly more effective compared to a shorter duration.⁴² Other variables are the methodological quality of intervention studies, choosing control groups, randomization status of treatment conditions, and documentation of experimental and statistical designs and procedures.

Studies on the effectiveness of life skills training either on the QoL of the normal population or subjects with other health problems have confirmed the efficacy of this intervention. For example, working women predisposed to many psychiatric symptoms or disorders have been given 1-2 weekly sessions of life skills training for ten weeks. The results of this study showed that

life skills training was an effective method in reducing anxiety, sleep, and somatic symptoms of subjects.⁴³

The result of QoL evaluations in 40 coronary heart patients aged 35-65 years, who had their first bypass showed that as a group, life skills training program was effective in decreasing anxiety and depression.⁴⁴

In this study we evaluated the efficacy and psychological power of the life skills training program on improvement in QoL of non-metastatic breast cancer patients.

As described in Materials and Methods, the GHQ questionnaire has been designed so that lower scores are indicative of poor mental and physical health whereas higher scores indicate better, healthy mental status. In this study we performed training in the ways of increasing self-esteem and controlling feelings, we did not measure their effects on the QoL. There were no significant differences in the four GHQ items included 1) somatization symptoms, 2) anxiety and sleeping disorders, 3) social functioning disorder, and 4) depression between the experimental and control groups prior to life skills training. After two weeks of training we observed a remarkable reduction in all four items for the experimental group when compared with both the control group and before training. The training effectiveness on both QoL and anxiety and depression was maintained for the two month after training reassessment.

In a meta-analysis that summarized the results of 37 published, controlled studies which investigated the effectiveness of psychosocial interventions on the QoL in adult cancer patients, the usefulness of psychosocial interventions for improving their QoL was noted.⁴⁵

The results of a study conducted from December 2006 until May 2007 on 300 female breast cancer patients (>18 years of age) in the Surgical Outpatient Department of King Chulalongkorn Memorial Hospital showed that anxiety and depressive disorders were two common psychiatric problem among breast cancer patients. Improving patients' social support and

raising their coping skills reduced psychological stress and psychiatric morbidities.³⁹

Japanese scientists conducted a six-week, psychosocial group intervention on breast cancer patients with the following selection criteria: age younger than 65 years, lymph node metastasis positive and/or histologic or nuclear grades 2-3, and surgery within the previous 4-18 months prior to the start of the study. The intervention consisted of health education, coping skills training, stress management, and psychologic support. Patients were evaluated for psychologic distress by the Profile of Mood States (POMS), Mental Adjustment to Cancer (MAC) scale, and Hospital Anxiety and Depression (HADS) scale. The researchers inferred that short term psychosocial intervention produced significant long term enhancement in the QoL in Japanese patients with primary breast cancer.⁴⁶

Marchioro et al. evaluated 36 patients with non-metastatic breast cancer. Patients received either psychological intervention (weekly cognitive individual psychotherapy and bimonthly family counseling) or a standard follow-up. Personality (16-PF and IIQ), QoL (FLIC), and depression (BDI) scores were the endpoints for this study, which were evaluated in the patients at diagnosis and up to nine months after diagnosis. This study indicated that cognitive psychotherapy and family counseling improved both depression and QoL indexes compared with the control group.⁴⁷

Conclusion

Psychological consultation therapies might be recommended as supportive treatment for cancer patients. Our study results suggest that these therapies improve their recovery. Both patients and oncologists will be satisfied with the results of psychological therapy, which help cancer patients in various ways, ranging from reducing the side effects of cancer treatments to increasing the life span of a patient.

Limitations

Some undiscovered confounding factors such

as the subject's culture and personal characteristics may remain and might have influenced on results. However the well-matched control group enabled us to independently assessment of symptoms.

We also re-evaluated signs and symptoms from both groups after two months, when all subjects were free from education and consequently free from concern. The time allowed us to re-assess what skills the experimental group had been learned.

The menstrual status of patients at the diagnosis of breast cancer remained unclear. After chemotherapy-radiotherapy treatment, postmenopausal signs and symptoms such as hot flashes were present in many participants. Confirming the menopausal status of all subjects would require a high-cost hormonal assessment, which was out of the scope of this study.

Conflict of interest/authors' disclosure

This study was approved by the Ethics Committee of the Zanjan University of Medical Sciences and by the Department of Hematology and Oncology and Radiation Oncology. This research was supported financially as a research project by Zanjan University of Medical Sciences. There was no including financial, personal, political, or academic that would potentially affect our judgment. All primary data can be reviewed if requested.

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