

## RESEARCH ARTICLE

# Psychoeducation Intervention to Improve Adjustment to Cancer among Turkish Stage I-II Breast Cancer Patients: A Randomized Controlled Trial

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### Abstract

Psycho-educational interventions are not a substitute for analgesics, but they may serve as adjuvant therapy. Nurses can provide psychoeducational programmes to cancer patients to assist them in optimizing behavior that strengthen adjustment. The aim here was to determine the effects of psychoeducation on levels of adjustment to cancer in stage I-II breast cancer patients who met the study criteria (experimental group: 38 women, control group: 38 women). The psychoeducational program consisted of eight 90 minute weekly sessions and data were collected using a questionnaire and the Mental Adjustment to Cancer Scale three times: before, six weeks and six months after the intervention. Data analysis was performed using descriptive statistical methods as well as the Chi square test, the Mann Whitney U test, repeated measures analysis of variance, the matched pairs t test and the Post Hoc Bonferroni test. The results at 6 weeks and 6 months after the program revealed that the experimental group had higher levels of “fighting spirit”, lower levels of “helplessness/hopelessness, anxious preoccupation and fatalism” but there was no significant change in levels of “avoidance/denial” compared to the control group with regard to adjustment to cancer. In this study, psychoeducation was shown to cause positive changes in levels of adjustment to cancer in breast cancer patients

**Keywords:** Breast cancer - stage I-II - patient - psychoeducation - adjustment to cancer

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### Introduction

Cancer, which is the symbol of mortality and the limitedness of our control over life, reminds people of uncertainty and danger (Holland, 1997; Özkan, 1999). Despite significant improvements in the treatment of cancer, cancer is still the most dreadful disease that have a deep psychological effect on people. From the prediagnosis to the terminal stage, cancer causes considerable stress and impairs adjustment of the patient (Özkan, 1999).

In breast cancer, the degree of psychological response is closely related to emotions about breast. In our country, as in other countries, breast of a woman symbolizes femininity, sexuality, esthetic appearance, feeding the baby, love and maternity. For this reason, after breast cancer, women usually experience severe psychological problems such as concern about impaired body image, reduced self-esteem, feeling of losing their femininity and decrease in sexual functions, anxiety, depression, desperation, guilt and shame, fear of a relapse, isolation and fear of death (Galjchen, 1999; Özkan, 1999; Kunkel et al, 2002; Lewis et al, 2012; Ohaeri et al., 2012).

Even though the need for a multidisciplinary and dedicated approach for cancer patients has long been

known, the impact of the emotional stress associated with the disease on health professionals also leads to a lack of applications in this field. Health professionals should adopt a palliative and corrective approach to the psychosocial needs of patients, which will enable them to face the disease, ambiguity and death, to overcome difficult experiences associated with the disease and to adjust to living with cancer (Akin, 2003).

One of the most effective psychosocial approaches to cancer patients is psychoeducation. Psychoeducation is a specialized education that consists of educational and psychosocial endeavors with an aim to create terminal behavior change in patients and their families. Planned psychoeducational programs assist patients and their families to cope with and adapt to the difficulties associated with the disease, enable them to develop their problem solving skills and increase their quality of life (Tel, 1999; Yurtsever, 1999; Todd et al., 2002; Reid et al., 2005).

Even though, in recent years, many psychoeducational interventions have been developed for patients and their families in various fields around the world, structured psychoeducation is rarely offered to patients and their families in non-psychiatric settings (Tel, 1999; Yurtsever, 1999). In our country, some educational programs are

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available for cancer patients, however these programs are not structured psychoeducational interventions directed toward patients and their families. In this study, we aimed to determine whether this form of psychoeducation could improve adjustment to cancer in stage I-II breast cancer patients.

**Materials and Methods**

*Study Design:*

An experimental pretest-posttest control group design was used. The study was conducted on patients being followed at the outpatient clinic 7-C of the Department of General Surgery at the Istanbul University School of Medicine. The target population of the study consisted of all patients admitted to the breast surgery clinic for breast cancer, whereas the study sample consisted of 80 patients, 40 of whom constituted the experimental group and 40 the control group, with a power of 0.90 and a confidence interval of 0.95. The inclusion criteria were as follows: being between 18-65 years of age, having histologically or nuclearly proven breast cancer in stage I-II, having knowledge about the disease, having no metastasis and related active chemotherapy administration to reduce interaction effects, having a score of 70% or higher on the Physical Performance Scale (Karnofsky Performance Scale), having a score of >20 on the Hospital Anxiety and Depression Scale, having the ability to read in Turkish, having no hearing or perceptual problems, having no comorbid physical or mental diseases (active psychosis, untreated major depression or personality disorder, dementia) or both, having no family history of psychiatric morbidity, accepting to participate in the study. Initial interviews were made with 123 patients and 35 women were not eligible to participate in the study. In the study, 88 eligible participants were successfully recruited. A numbered list of names was made and used for random assignment of participants to intervention or control groups (the first woman went to the intervention group, the second to the control group, and so on). Of those who initially agreed to participate in the study, 12 dropped out for a variety reasons (e.g. unwillingness to participate, medical illness, recurrence of breast cancer, death). As a result, 38 women in the intervention group and 38 women in the control group completed the final interview at 6 months (Figure 1).

*Study Hypotheses*

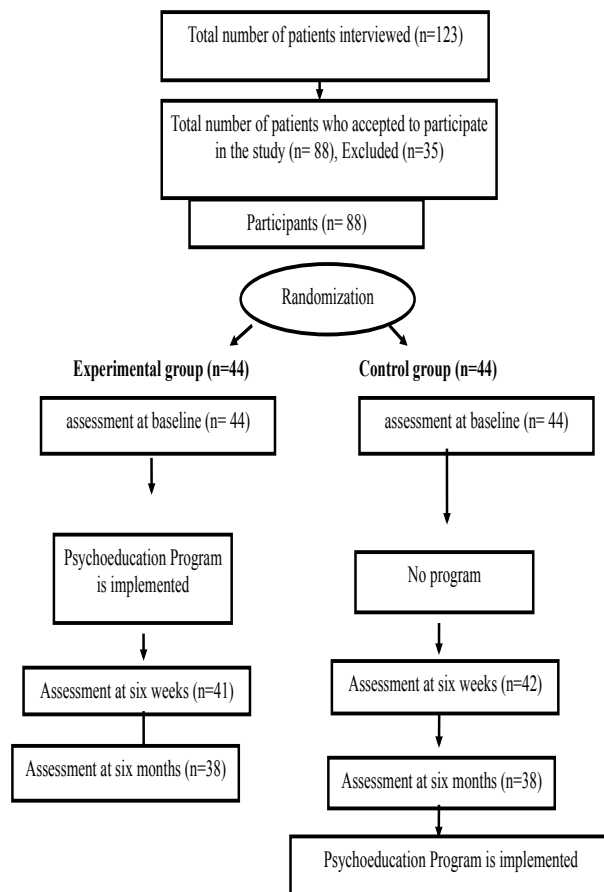
The levels of adjustment to cancer in patients who participate in psychoeducational support group will increase after psychoeducation,

The levels of adjustment to cancer in patients who participate in psychoeducational support group will increase compared to those of the controls.

*Instruments*

Two instruments were used to evaluated eligibility criteria and one instruments were used to measured adjustment to cancer.

*The Hospital Anxiety and Depression Scale-HADS:* is a brief, 14-item, self-report questionnaire developed



**Figure 1. Flow Diagram of Study Participants.**

to detect the presence and severity of anxiety and depressive symptoms at the time of collection (Zigmond and Snaith, 1983). Because the HADS was developed for use in medically ill patients, it does not rely upon somatic symptoms of depression and anxiety such as pain and weight loss; instead, it focuses on cognitive symptoms of anxiety and depression. Each question is rated on a scale of 0-3, with a possible score of 0-21 for depression and anxiety each and a possible total score of 0-42. The HADS has well-established reliability and validity for depression and anxiety in women with breast cancer. The Cronbach alpha in this study was 0.77 for the depression subscale and 0.81 for the anxiety subscale (Zigmond and Snaith, 1983; Aydemir et al, 1997; Fukui et al., 2000).

*The Karnofsky Performance Scale- KPS:* This scale is frequently used to quantify cancer patients’ ability to function and to identify medical conditions indicating the effects of the disease on the patient. Function loss is usually associated with intense physical, psychological and physiological effects of progression of the disease. The initial form of the scale was used by Karnofsky et al. (1984) for the assessment of performance status and life quality of cancer patients and the scale was developed later. The applicability of the scale was checked by Adams et al. (1995). A score from 0-100 was assigned based on the criteria such as the patient’s normal activity, performance, working ability and self-care. A score of 100 indicates that the individual is able to carry on normal activities whereas a score of 0 indicates that the patient is dead (Mor et al., 1984; Coward, 1988; 2003).

*Mental Adjustment to Cancer Scale- MAC:* This scale

was developed to measure cancer patients' adjustment to the diagnosis and treatment. The reliability and validity study of the MAC scale, developed by Watson et al. in 1988, was carried out by Natan in 2000. The scale consists of 40 items and 5 sub-dimensions as follows: Fighting spirit, helplessness/hopelessness, anxious preoccupation, fatalism and avoidance/denial. The MAC is a Likert type scale with four response options: (1) does not apply to me at all (2) does not apply to me (3) applies to me (4) applies to me very much. In the analysis for internal consistency of the MAC scale, Cronbach's alpha coefficient of reliability was found to be between 0.80 and 0.82 for the subdimensions of the scale (Greer and Watson, 1987; Lesko, 1997; Natan, 2000; Goodwin et al., 2001).

### Procedures

The questionnaire, the Hospital Anxiety and Depression Scale and Physical Performance Scale were applied to the experimental and control groups at the initial interview; the Mental Adjustment to Cancer Scale was applied in the first session of the intervention; and the Mental Adjustment to Cancer Scale was applied again to the both groups six weeks and six months after the experimental group completed the program.

A semi-structured "Psychoeducational Program" was conducted on the experimental group, developed based on 8-session study on the subject (Fawzy et al., 1990; Coward, 1998; 2003; Spira, 1998; Bultz et al., 2000; Frost et al., 2000; Fukui et al., 2000; Hosaka et al., 2000; Classen et al., 2001; Hosaka et al., 2001; Taylor et al., 2003). Each session run as a closed group and lasted for 90 minute once a week. Psychoeducational intervention was designed to provide education and support. Group members were allowed to make phone calls and visits to each other between the sessions. Patients were encouraged to share their positive and negative thoughts, experiences and feelings about cancer and use the knowledge and skills acquired to help others with their problems.

The psychoeducation was presented through slides with effective use of images in Microsoft Powerpoint. For this purpose, 265 slides were made attractive using special effects and sounds. Table 1 shows the titles and contents

of the sessions. At the end of each session, the participants were given brochures that were specially designed for that session and those who wanted were given a relaxation CD prepared by Turkish Psychologists Association and were asked to practice techniques from the CD at home.

### Data Analysis

All statistical analyses were performed using SPSS software (version 11.5). Data analysis was performed using frequency, Mann Whitney U test,  $\chi^2$  test, repeated measures analysis of variance, t test and post hoc Bonferroni test. For all statistical analyses, p value of less than 0.05 was considered to be statistically significant.

### Ethical Considerations

Prior to the study, the approval of the Ethics Committee, the Executive Committee and the Department of General Surgery of Istanbul University Istanbul Faculty of Medicine was obtained and an informed consent form was obtained from each participant. Cooperation of other health professionals was sought in accordance with the requirements of the patient. The supervision was provided by a psychiatrist and a psychiatric nurse trained in psychodrama and a cooperation was started with the Consultation-Liaison Psychiatry for the treatment of patients in need.

### Results

The comparison of individual characteristics (age, educational status, marital status, number of children, perception of income, living partner, type of social security) between the experimental and control groups indicated that only the age differences were statistically significant (ZMWU=-2.32, p=0.02) and the control group patients were younger than the experimental group patients (The mean age of the experimental group was 50.42 years; the mean age of the control group was 46.13 years).

In the comparison of the health status (perception of health status, family history of breast cancer, family history of other types of cancer, history of other diseases, history of organ loss) between the experimental and

**Table 1. The contents of psychoeducation sessions**

Session	Contents
Basic information (69 slides)	♦Breast cancer treatment methods, selection criteria for treatment methods and lymphedema and protection against lymphedema, breast self examination
Nutrition (32 slides)	♦The importance of sufficient nutrition and a balanced diet, dietary factors contributing to cancer, dietary factors protecting against cancer, important points about nutrition foods to be avoided
Psychosocial factors (49 slides)	♦Adjustment process, reasons for negative perception of the disease, things to do to facilitate the adjustment, losses, psychological reactions, cancer and depression, cancer and anxiety, support of consultation-liaison psychiatry
Coping with cancer (44 slides)	♦Stress, signs of stress, coping with stress, factors affecting coping, factors facilitating coping with cancer and factors leading to inadequate coping, things to do and not to do to cope with cancer, effective ways to cope with stress
Interpersonal relationships (48 slides)	♦Importance of human relations, body language for a good impression, important points in human relations, behaviors that hinder our relationships with people, importance of self-knowledge, cancer and communication with family, basic skills for an effective communication
Problem solving (23 slides)	♦Problem definition, definition of problem solving, effective problem solving process and problem solving techniques, the most common problems with group members (problems related to changes in self-image, sexual problems and problems related to patients' control over treatment process) and solutions
Experience sharing and support	♦For the purpose of support and sharing, 5 patients with a history of breast cancer who could be of assistance to other patients were invited to share their stories and experience, and group members were encouraged to discuss their questions.

control groups revealed no statistically significant difference between the two groups.

The comparison of characteristics of disease/treatment (time to diagnosis, the duration of surgery, the stage of the disease, the type of surgery, history of chemotherapy, history of radiotherapy, history of hormone therapy, participation in the support group) between the experimental and control groups showed no statistically significant differences between the two groups.

An analysis of mean scores on the Mental Adjustment to Cancer Scale before, 6 weeks and 6 months after the education for the experimental group (Table 2) revealed: A statistically significant increase in mean scores on the sub-dimensions of “fighting spirit” and “avoidance/denial”; a statistically significant decrease in mean scores on the sub-dimensions of “anxious preoccupation” and “fatalism”; no statistically significant difference in mean scores on the sub-dimension of “helplessness/hopelessness” at 6 weeks and 6 months after the education compared to those before the education.

As seen in Table 3, the comparison of mean scores on the Mental Adjustment to Cancer Scale for the experimental and control groups before, six weeks and six months after the education revealed: A significant increase in mean scores on the sub-dimension of “fighting spirit”, a significant decrease in mean scores on the sub-dimensions of “helplessness/hopelessness”; “anxious preoccupation”

and “fatalism”, no significant difference in mean scores on the sub-dimensions of “avoidance/denial” in the experimental group patients compared to the control group patients at six weeks and six months after the education.

### Discussion

No statistically significant differences were found in individual characteristics, health characteristics and disease/treatment characteristics between the experimental and control group patients and the intergroup distribution was homogenous. The similarity of the characteristics of the experimental and control groups is important for the validity of the study findings.

As seen in Table 2, regarding the levels of adjustment to cancer before, six weeks and six months after the education, the experimental group had higher levels of fighting spirit and avoidance/denial but lower levels of anxious preoccupation and fatalism and there was no change in levels of helplessness/hopelessness.

With regard to the changes exhibited by the experimental group patients in the process of adjustment to cancer during psychoeducational intervention, we found that: “5 patients who, instead of using the word ‘cancer’, refer to it as ‘the disease I do not even want to mention’, said the word ‘cancer’ more easily in the last sessions”, “4 patients, who avoided looking or touching their breasts after undergoing mastectomy, started performing breast self examination and tried to inform their relatives/friends about the subject”, “3 patients, who limited themselves and their relationships because of other people’s thoughts about their disease, exhibited positive changes”, “1 patient, who did not get together with her husband’s family in religious holidays, started meeting them whereas 2 patients, who did not go out in order not to see the people in her life, started going walking, shopping and visiting close friends”, “patients, who accepted the diagnosis but adopted a fatalistic attitude, giving themselves to religion, started seeking information about their disease”, “a majority of the patients reported higher levels of hope as

**Table 2. The Mean Scores on the Mental Adjustment to Cancer Scale in the Experimental Group before, Six Weeks and Six Months after the Education**

	Before education		After the education		F	p		
	X	SD	6 weeks	6 months				
The subdimensions of the Mental Adjustment to Cancer Scale								
Fighting spirit	50.60	5.23	53.55	4.77	54.13	3.93	3.24	0.006
Helplessness/hopelessness	12.47	2.53	10.47	2.25	10.00	2.16	2.10	0.064
Anxious preoccupation	25.50	3.71	21.39	3.27	19.42	3.71	2.81	0.015
Fatalism	19.18	3.36	17.81	2.89	16.73	2.50	2.10	0.058
Avoidance/denial	2.26	0.94	2.57	1.08	2.60	0.97	6.82	0.001

**Table 3. The Comparison of Mean Scores on the Mental Adjustment to Cancer Scale between the Experimental and Control Groups in the First, Second and Third Interviews**

	Experimental group		Control group		t	p		
	X	SD	X	SD				
The subdimensions of the Mental Adjustment to Cancer Scale								
Fighting spirit	Before the education (1 <sup>st</sup> )		50.60	5.23	51.36	4.93	0.40	0.683
	Six weeks after the education (2 <sup>nd</sup> )		53.55	4.77	43.31	4.14	9.98	0.000
	Six months after the education (3 <sup>rd</sup> )		54.13	3.93	38.05	4.73	16.10	0.000
Helplessness/hopelessness	Before the education (1 <sup>st</sup> )		12.47	2.53	10.55	2.69	1.00	0.324
	Six weeks after the education (2 <sup>nd</sup> )		10.47	2.25	14.28	2.60	6.82	0.000
	Six months after the education (3 <sup>rd</sup> )		10.00	2.16	12.42	2.21	4.81	0.000
Anxious preoccupation	Before the education (1 <sup>st</sup> )		25.05	3.71	23.47	4.03	1.32	0.189
	Six weeks after the education (2 <sup>nd</sup> )		21.39	3.27	26.89	3.23	7.36	0.000
	Six months after the education (3 <sup>rd</sup> )		19.42	3.71	26.86	3.37	9.14	0.000
Fatalism	Before the education (1 <sup>st</sup> )		19.18	3.36	18.92	4.58	1.55	0.123
	Six weeks after the education (2 <sup>nd</sup> )		17.81	2.89	19.97	2.99	3.19	0.002
	Six months after the education (3 <sup>rd</sup> )		16.73	2.50	22.28	2.75	9.19	0.000
Avoidance/denial	Before the education (1 <sup>st</sup> )		2.26	0.94	2.26	0.97	1.00	0.323
	Six weeks after the education (2 <sup>nd</sup> )		2.57	1.08	2.60	0.82	0.11	0.905
	Six months after the education (3 <sup>rd</sup> )		2.60	0.97	2.94	1.08	1.44	0.153

their knowledge about the disease and the level of support received increased”, “most of the patients talked about themselves and their problems more easily because there were other people in the group who understood them and they usually arrived in the meeting room before the session start time or shared their experience after the session”.

Ross et al. (2002) reported that, in a psychoeducational intervention carried out by Berglund et al, patients had higher levels of fighting spirit but lower levels of helplessness/hopelessness, anxious preoccupation and fatalism. The findings of this study are consistent with those of Berglund et al. except for those related to the sub-dimension of helplessness/hopelessness. In this study, the decrease in the sub-dimension of ‘helplessness/hopelessness’ in the experimental group did not reach but was close to the statistical significance. We consider that this intervention, when offered in cooperation with the clinic staff, is likely to be more effective. These findings of this study support the hypothesis that “levels of adjustment to cancer in patients participating in psychoeducational support group increase after psychoeducation”.

As seen in Table 3, regarding the levels of adjustment to cancer in the experimental and control groups before, six weeks and six months after the education, the experimental group had higher levels of fighting spirit but lower levels of anxious preoccupation and fatalism whereas there was no significant change in levels of avoidance/denial compared to the control group six weeks and six months after the education.

In a study, Fukui et al. (2000). found that the mean score on the sub-dimension of ‘fighting spirit’ at six weeks and six months after the education was significantly higher in the experimental group compared to that in the control group whereas there were no statistically significant differences on the other sub-dimensions, which indicated that the fighting spirit was the most effective coping style among breast cancer patients. However, in this study the changes occurring not only in the ‘fighting spirit’ but also in the other sub-dimensions were attributed to the provision of psychosocial interventions as well as medical information not in a question-answer format but in a structured manner, including also the question-answer format.

In this study, the experimental group patients reported that their levels of knowledge about their disease increased after the education program, they faced their problems more easily, they talked about themselves and their problems in a more comfortable manner, they had lower levels of isolation and guilt, they felt a sense of belonging in the group, they grew stronger and their disease-fighting power was improved and that talking to other people with similar experiences, sharing experience and learning from each other were effective. We consider that these experiences felt by the patients in the experimental group were associated with the changes occurring in the process of adjustment to cancer. This finding of the study also supports the hypothesis that “levels of adjustment to cancer in patients participating in psychoeducational support group increase after psychoeducation”.

In conclusions, the assessment of the patients at six weeks and six months after the psychoeducational program

showed that; women participating in the psychoeducational program had increased levels of adjustment to cancer, the experimental group had higher levels of fighting spirit, lower levels of helplessness/hopelessness, anxious preoccupation and fatalism and there was no change in the levels of avoidance/denial compared to the control group. In conclusion, psychoeducation led to a change in levels of adjustment to cancer in breast cancer patients. This study was the first reported study in Turkey related to psychoeducational programme in breast cancer patients.

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