



Experimental Study

The effects of psychoeducation on problem solving skills of cancer patients

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Abstract

Objectives: This study aims to examine the effects of psychoeducation on problem solving skills of cancer patients.

Methods: This study was conducted as a quasi-experimental research with pre- and post-test design. This study was performed in Manisa at a radiation oncology service between April and December 2016. The study sample consisted of 32 patients who met the study inclusion criteria. The patients were interviewed and provided with psychoeducation individually for 1 hour per week in a period of 6 weeks. The data were collected using an Introductory Information Form and the Problem Solving Inventory (PSI). The data was evaluated using number, percent distribution and paired samples t test.

Results: The patients' PSI (total) pre- and post-test mean scores were 112.75±26.68 and 63.28±12.67, respectively. The difference between the patients' PSI (total) pre- and post-test mean scores was found to be statistically significant ($t=13.173$, $p<0.001$). The differences between patients' pre- and post-test mean scores on the PSI subscales were also found to be statistically significant ($p<0.001$).

Conclusion: The present study results showed that psychoeducation positively changed the perception of problem-solving in cancer patients.

Keywords: Cancer; problem-solving; psychiatric consultation-liaison nursing; psychoeducation.

What is known about this subject?

- Cancer is one of the most common health problems faced today.

What is the contribution of this study to the literature?

- It is thought that this study will contribute to the literature in terms of creating samples of holistic treatment of patients.

What is the contribution of this study to the practice?

- The study results can make an important contribution to nurses working in clinical fields and as a psychoeducation program which can provide a good example for nursing care.

Cancer is one of the most difficult health problems of our time. Cancer treatment is a challenging process that affects patients and their relatives both physically and mentally. Despite medical advances, cancer is still perceived as a fright-

ening disease by patients and their relatives. People think that cancer means suffering, hopelessness, an approach to death and sometimes even death.^[1,2] Diagnosis of cancer creates a crisis in which the patient needs to adapt. A proper treatment is planned for the patient, meanwhile his/her stress levels also need to be under control. Studies report that most cancer patients suffer from pain and fatigue, and have sleep, sexual, memory and psychological problems.^[3-5] A study determined that 36% of cancer patients had cognitive impairment and 38% had a sleep disorder after a 5-year follow-up. Other long-term problems of cancer patients included fatigue (31%), weight loss (32%), pain (34%), deterioration of physical performance (39%), flushing (38%), and sexual problems (45%).^[6] Cancer patients also encounter problems such as stress and despair that they cannot solve on their own and which begins to weaken

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their immune system.^[2,7-9] These problems reduce the life quality of cancer patients, and the increasing emotional and social difficulties extends the recovery period and increases treatment costs. That is why nurses should provide education, social support and counseling services to their patients.

Cancer patients reported to use coping methods such as socializing with family or friends, resting, doing regular exercise, having a healthy diet, sharing their feelings and experiences with social support groups, talking with others about their fears, doing fun things and starting a hobby.^[10-16] However, cancer patients sometimes use inefficient coping methods during the cancer process such as failure to fulfill role expectations, destructive behaviors towards themselves and others, worries about making plans for the future, fear about their cancer treatment and the side effects, anxiety, reduction in participation in social activities, and insufficiency in meeting basic needs.^[15,16] It is important for cancer patients to improve their problem-solving skills during this treatment process.

The factors affecting a cancer patient's ability to cope with these problems include treatment factors such as type, stage, symptoms and of the cancer itself.^[2,7] It also depends on psychological factors such as the patient's ability to adapt to previous diseases, physical and mental resilience, personality traits, current life situations and their methods of coping with problems. This process is also affected by interpersonal factors such as the patient's cultural and spiritual attitudes and the presence of social, emotional or healthcare team support for the patient.^[2,7]

The effects of procedures such as psychosocial interventions, cognitive behavioral therapy, individual and group counseling, psychoeducation and support groups were evaluated in the literature for cancer patients.^[17-30] There have also been studies conducted abroad in which cancer patients were provided with psychoeducation programs, telephone consultancy and booklet information.^[17,31-33]

The psychoeducation program supports patients in recognizing and understanding themselves, meeting individual needs, increasing their level of wellness, preventing potential adversities and improving the quality of life. Psychoeducation programs are helpful for patients to contend with anxiety and fear, express their thoughts and emotions, get information, feel less isolated, and to strengthen their concept of self. Psychoeducation practices are effective in reducing the symptoms of depression^[7] and anxiety^[9] as well as helping cancer patients solve problems.^[24,8,34] Psychoeducation aims to help patients to better understand their own situations, to develop their problem-coping skills by increasing their knowledge and incentives for making behavioral changes, to create motivation in performing self-care activities, to prevent complications, to increase the general level of well-being, adaptation and quality of life.^[35,36] An important point to consider while structuring a psychoeducation intervention program is that post-treatment stressors trigger more stresses and the problems experienced physically also affects patients socially and

psychologically, which in turn threatens their biopsychosocial integrity and ability to problem solve.^[37,38]

There are only a few studies on nursing interventions for problem-solving in cancer patients and studies mostly only focuses on physical problems of the patients. The present study may contribute to the literature by creating an example of holistic treatment of patients. In addition, the study results may have a significant contribution to nurses and nursing care in clinical areas.

This study was conducted to examine the effects of psychoeducation on the problem-solving skills of cancer patients.

Materials and Method

This study was conducted as a quasi-experimental research with pretest and posttest design. The study was carried out in the radiation oncology department of Manisa State Hospital between April and December 2016. The study population consisted of cancer patients hospitalized in the radiation oncology clinic of Manisa State Hospital. The study sample size was calculated using the Power Analysis. According to the Central Limit Theorem, the study sample size needed to include at least 30 people, but was planned to be 32, taking into account possible drop-outs. Therefore, the study sample consisted of 32 patients who were hospitalized in the radiation oncology clinic and volunteered to participate in the study.

Data Collection Tools

The data was collected in two stages as pretest and posttest, using the Introductory Information Form developed by the researchers and the Problem Solving Inventory (PSI) developed by Heppner and Peterson (1982).^[39] The pretest was performed at the end of the introductory meeting, and the posttest was performed after the 6-week interview period.

1. Introductory Information Form

The information form consists of questions about patients' sociodemographic and disease characteristics, family history of cancer and coping strategies.

2. Problem Solving Inventory (PSI)

This 35-item inventory developed by Heppner and Peterson (1982) measures individuals' perception of their problem-solving skills and can be applied to adolescents and adults.^[39] It is a six-point Likert type scale with item options ranging from "I always behave like this" to "I never behave like this". The items numbered 9, 22 and 29 are excluded from the scoring. The items numbered 1, 2, 3, 4, 11, 13, 14, 15, 17, 21, 25, 26, 30 and 34 are scored in reverse. The Turkish validity and reliability of the scale was performed by Şahin and Heppner (1993).^[11] The scale consists of six factors; hasty approach (13, 14, 15, 17, 21, 25, 26, 30, 32), thinking approach (18, 20, 31, 33, 35), avoiding approach (1, 2, 3, 4), evaluating approach (6, 7, 8), self-confidence approach (5, 23, 24, 27, 28, 34) and planned approach (10, 12,

16, 19). The total PSI score was used in this study. The minimum and maximum scores to be obtained on the scale are 32 and 192, respectively. There is no cutoff point in the evaluation of the scale. Low scores on the scale indicate greater perception of effective problem-solving ability, or vice versa.^[39]

Procedure

Psychoeducation was planned taking into account the factors affecting patients' problem-solving skills. The following subjects were examined and psychoeducation was provided for the patients.

Objective: To inform the patient about the disease

1. The first interview focused on the following issues:

- Cancer and chemotherapy
- The patient's disease and treatment process
- Side effects of the medicines used in cancer treatment (nausea, vomiting, constipation, hair loss, infection risk, skin problems, nephrotoxicity, mucositis and all other side effects) and relevant coping strategies for these side effects
- Chemotherapy and post-chemotherapy feeding (prohibitions and actions) and exercise training
- Harms of smoking and alcohol use

Objective: To empower/encourage the patient to recognize his/her own feelings

2. The second interview focused on the following issues:

- Feelings that the patient has the most, how the disease is perceived, the factors affecting the patient's perception of the disease, the patient's realistic and unrealistic perceptions of feelings and thoughts about the disease, and the positive and negative effects of these perceptions on the patient
- The anxiety factors recently affecting the patient's life
- The crises challenging the patient, and the effective ways of expressing emotions about and adapting to the disease

Objective: To empower/encourage the patient to better cope with stress

3. The third interview focused on the following issues:

- Stress factors of the patient
- The patient's coping strategies for stress, problem-solving methods and relaxation techniques.
- Physiological and psychological effects and behavioral symptoms of stress
- Breathing techniques
- Sleep hygiene
- Anxiety and possible things to do about it
- Empowering/Encouraging the patient to have good eating habits

- Empowering/Encouraging the patient to use their time efficiently
- Empowering/Encouraging the patient to talk about his/her previous successes
- Empowering/Encouraging the patient to keep his/her social support system strong
- Physical exercise
- Promoting the patient's participation in social activities

Objective: To inform the patient about the benefits of problem-solving

4. The fourth interview focused on the following issues:

- Communication techniques
- Determining problem behavior
- Empowering the patient to make plans, apply plans and review alternatives when the plan does not work
- Empowering the patient to determine his/her relationships with demands and reality
- Developing defense mechanisms and affirmatives
- Positive oriented approach

Objective: To empower/encourage the patients to recognize any family, social, work or sexual problems and to cope with these problems

5. The fifth interview focused on the following issues:

- Empowering/Encouraging the patient to express their feelings about family-related problems and relevant strategies for increasing intra-family communication and continuation of the family process
- Empowering/Encouraging the patient to continue with their pre-disease social life
- Identifying the patient's social support systems and benefits from this system
- Empowering/Encouraging the patient to express their feelings about business, social and daily life issues and maintain his/her daily and business life
- Determining the effect of the feelings of weakness experienced by the patient on work life, leisure activities, role responsibilities and relationships
- Empowering/Encouraging the patient to cope with changes in his/her sexual life

Objective: To empower/encourage the patient to learn how to live with the disease and to make plans for the future

6. The sixth interview focused on the following issues:

- Empowering/Encouraging the patient to accept his/her current health status, to hope for a promising future, to get on with life, to set goals and make choices
- Empowering/Encouraging the patient to take individual responsibility in decisions regarding his/her treatment
- Encouraging the patient to make plans for the future and

to set short and long-term goals

- Encouraging the patient to take control of his or her life
- Monitoring of the patient's communication with health professionals

The Problem Solving Inventory (PSI) was applied to the patients at the end of the interviews. The research data was collected throughout the 6-month period. Each individual interview was held once a week in an interview room. The training sessions were held in a seminar room for 1 hour per patient.

Data Analysis

The data was evaluated using the SPSS for Windows 15.0 software program, and statistically analyzed using numbers, percentage distribution and the paired samples t test for comparing pre and post-psychoeducation PSI total and subscale mean scores.

Ethical Considerations

The study was approved by the Local Ethics Committee of the Manisa Celal Bayar University School of Medicine (04.05.2016; 20478486-168) and written permission was obtained from the General Secretariat of Manisa Public Hospitals. In addition, verbal and written consent was obtained from the patients before starting the study.

Results

The patients' mean age was 49.18 ± 11.17 . 71.9% of the patients were female, 28.1% were male, 81.3% were married, and 18.7% were divorced, single or separated. In addition, 59.4% were illiterate and primary school graduates while 40.6% were high school and university graduates. 21.9% were employed and 79.1% were unemployed. 37.5% had an income less than their expenses, 53.1% an income equal to their expenses, and 9.4% had an income more than their expenses. Moreover, 50% had breast cancer and 50% had another type of cancer (bladder, lung, liver, colon, lymph, uterus, rectum, and endometrium). 75% had family history of cancer in their immediate family, and 25% had family history of cancer in a more distant relative. 34.4% of the patients evaluated their mental health as good, 46.9% as moderate and 18.8% as poor (Table 1).

Of all the patients, 12.5% reported that they could not think or feel of anything when they were diagnosed with cancer. 9.4% reported to accept it, but 21.9% reported that they could not accept it, felt angry and demoralized. 43.8% reported getting stressed and upset/very upset. 25.0% of the patients thought that they had the disease because of physical reasons, whereas 53.1% thought it was because of emotional reasons. 21.9% had presented other reasons/responses (fated, for no reason, etc.). 90.6% of the patients tried to cope with the disease through spiritual/religious values and activities (prayer, salaat, etc.), whereas 9.4% did not believe in such practices and got psychological support. The patients used the following relaxation methods; being together with their family and friends (28.1%),

Table 1. Socio-demographic characteristics of patients

Socio-demographic characteristics	n	%
Age, (Mean±Standard deviation)	49.18±11.17	
Gender		
Female	23	71.9
Male	9	28.1
Marital status		
Married	26	81.3
Other (single, widow, divorced)	6	18.7
Education level		
Illiterate with a primary school education	19	59.4
High school and university graduates	13	40.6
Employment		
Yes	7	21.9
No	25	78.1
Income level		
Income less than expenditure	12	37.5
Income equal to expenditure	17	53.1
Income more than expenditure	3	9.4
Disease		
Breast cancer	16	50.0
Other (bladder, lung, liver, colon, lymph, uterus, rectum, and endometrium)	16	50.0
First degree cancer relatives		
Mother-father-sibling	12	75.0
Other (uncle, aunt, grandfather, grandmother...)	4	25.0
Mental health perception		
Good	11	34.4
Middle	15	46.9
Poor	6	18.8
Total	32	100.0

being involved in spiritual/religious activities such as reading the Qur'an and prayer (18.8%), traveling, entertaining, and socializing (25%), and being alone or avoiding people (28.1%) (Table 2). However, after the psychoeducation program, the percentage of patients who used traveling, entertaining, and socializing in coping with the disease has increased by 50%.

The patients' PSI total pre and posttest mean scores were 112.75 ± 26.68 and 63.28 ± 12.67 , respectively. The difference between these scores was statistically significant ($t=13.173$; $p<0.01$). Regarding the PSI subscales, the patients' pre and posttest mean scores were 35.09 ± 7.33 and 24.21 ± 4.16 on the hasty approach subscale ($t=8.61$; $p<0.01$); 16.46 ± 5.78 and 8.75 ± 3.07 on the thinking approach subscale ($t=7.74$; $p<0.01$); 15.34 ± 4.74 and 7.12 ± 1.71 on the avoiding approach subscale ($t=11.18$; $p<0.01$); 9.21 ± 3.83 and 4.81 ± 1.85 on the evaluating approach subscale ($t=7.16$; $p<0.01$); 20.78 ± 7.01 and 11.03 ± 4.32 on the self-confidence approach subscale ($t=7.96$; $p<0.01$); 11.68 ± 4.96 and 7.34 ± 3.13 on the planned approach

Table 2. Disease characteristics

	n	%
Feelings when diagnosed with the cancer		
Could not think or feel anything	4	12.5
Accepted the disease	3	9.4
Could not accept it, felt angry/demoralized	7	21.9
Got stressed and upset/very upset	14	43.8
Cause of the disease		
Psychical reasons	8	25.0
Emotional reasons	17	53.1
Other reasons/responses (fated, without reason, etc.)	7	21.9
Beliefs/values used in coping with difficulties		
Spirituality (prayer, reading of the Qur'an)	29	90.6
Do not believe in spiritual practices and getting psychological support	3	9.4
Relaxation methods		
Family, friends	9	28.1
Spirituality (prayer, reading of the Qur'an)	6	18.8
Traveling-entertaining-socializing	8	25.0
Being alone-avoiding	9	28.1
Total	32	100.0

subscale ($t=4.68$; $p<0.01$). A statistically significant difference was found between all PSI subscale mean scores (Table 3).

Discussion

The psychoeducation interventions applied to the patients in this study positively affected their problem-solving skills. The patients with cancer were usually observed to have negative thoughts about the disease and their future planning. The psychoeducation was effective in empowering the patients to express their feelings and emotions, to help define and cope with their problems, and to create alternative solutions.

The mean age of the patients was 49.18 ± 11.17 . They were in the age group of 49 years and older and the majority of the female patients were married. The majority of the patients were

illiterate and only had a primary school education, and also did not have health insurance. The demographic characteristics of patients involved in this study are compatible with the sample properties of other studies of cancer patients.^[40] The patients with breast cancer constituted 50% of the study sample. This situation can be explained by the fact that 2/3 of the sample was composed of women and that breast cancer is the first among the cancers seen in women.

The patients used the following relaxation methods; being together with their family and friends, being involved in spiritual/religious activities, traveling, entertaining, and socializing, and being alone or avoiding people. However, after the psychoeducation program, the patients were observed being able to better recognize themselves and their abilities and thus preferred the relaxation method of traveling, entertaining and socializing more while coping with their disease. The fact that the patients mostly preferred spiritual interventions (prayer, etc.), family-friend support and being alone as the methods of coping with cancer related processes is related to Turkish society's sociocultural dimension. Studies report that cancer patients with social support cope better with cancer processes.^[41-43]

After the psychoeducation program, the patients' PSI mean score decreased and the level of their problem-solving skills increased. In addition, the patients' mean scores of ineffective coping methods used in problem-solving decreased and their mean scores of effective coping methods used in problem-solving increased. The avoiding approach adapted by the patients included ineffective coping methods such as the behavior of delaying the problem, not attempting to address a problem, not wanting to think about the problem disturbing them, the tendency of not trying to make an effort for solving the problem, being dependent on others to solve the problem, not feeling responsible for solving the problem, and avoiding the problem instead of facing it. The psychoeducation program decreased the patients' usage of avoiding approach methods. After the psychoeducation program, the patients were observed making plans for the future, decreasing self-blame, creating self-awareness, holding on to life, developing relationships, expressing feelings and thoughts, having better emotional control, turning negative feelings into positive emotions, developing self-confidence and participating more in social

Table 3. Problem Solving Inventory (PSI) Subscale Mean Scores and Comparisons (n=32)

	Pre-test	Post-test	t	p
Hasty approach	35.09±7.33	24.21±4.16	8.61	0.00*
Thinking approach	16.46±5.78	8.75±3.07	7.74	0.00*
Avoiding approach	15.34±4.74	7.12±1.71	11.18	0.00*
Evaluating approach	9.21±3.83	4.81±1.85	7.16	0.00*
Self-Confidence approach	20.78±7.01	11.03±4.32	7.96	0.00*
Planned approach	11.68±4.96	7.34±3.13	4.68	0.00*
Problem Solving Inventory total score	112.75±26.68	63.28±12.67	13.173	0.00*

* $p<0.01$.

life. Furthermore, the psychoeducation program increased the patients' self-esteem in dealing with problems, thinking about problems, being aware of their problems and then solving the problem. Öz et al.^[19] (2012) conducted a study of the evaluation of group counseling for women with breast cancer and determined that the group-counseling program had a positive impact on patients' perceived social support which in turn helped them to develop their ability to cope effectively with stress. This study suggests that group-counseling programs have an effect on both patients' coping and problem-solving skills.

Akechi et al.^[22] (2008) suggest that problem-solving intervention can be useful in reducing the fear of a recurrence of the disease among individuals who survived from breast cancer. A study of patients' emotional distress determined that the most frequently planned nursing intervention was to provide the patient with support, time and information about the treatment, stating that the planned interventions could reduce the patient's problems.^[23] The present study also determined that providing support and information to the patients was effective in enabling them to better solve problems. Another study, in which cancer patients received a problem-solving training, found that providing patients with appropriate information, listening to them, empathizing with them and determining their psychological needs positively affected their care and treatment process.^[24] Another study determined that psychoeducation applied to patients diagnosed with breast cancer was effective in enabling them to cope with negative emotions, thoughts, anxiety, depression, hopelessness and the fear of a recurrence of the disease.^[38] A randomized controlled study in which cancer patients received group-psychoeducation during the post-treatment period, found that psychoeducation was effective in improving sub-dimensions of the quality of life such as general health, emotional performance and role performance.^[33] Another study of the effectiveness of telephone counseling services in breast cancer patients determined that counseling services improved the psychological well-being of the patients and increased their problem solving ability.^[44]

Conclusion

The symptoms such as anger, sadness, fear, restlessness, hatred and insecurity which often develop after being diagnosed with cancer are important in terms of observing the severity of the patient's physical illness, his/her compliance with the treatment, and quality of life. In oncology, psychosocial interventions help the patients and their relatives to cope with mental problems. Psychiatric nurses and consultation-liaison psychiatric nurses should help patients in improving and protecting health, be involved in the screening and evaluation process, and manage the therapeutic environment and self-care activities.

The present study results showed that psychoeducation positively changed the perception of problem-solving in cancer patients. In many studies on psychoeducation around the world and in Turkey, it is observed that the nurses supporting cancer patients have been involved in the care of patients.

In Turkey, there is a limited number of studies about the psychoeducation programs for improving patients' problem-solving skills. Nurses should perform psychoeducation in clinical practices. They should also perform and routinely apply interventions in clinical practices that increase patients' problem-solving skills and facilitate their adaptation to the disease. In this regard, it is recommended to open training and psycho-oncology units in clinics and place specially trained health professionals in these units. This will help to provide patients with higher quality services, better meet their psychosocial needs and generally help to maintain their physical and psychological health in a more full and complete way.

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