RESEARCH ARTICLE

Effects of Progressive Relaxation Exercises on Anxiety and Comfort of Turkish Breast Cancer Patients Receiving Chemotherapy

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Abstract

    <u>Background</u>: Breast cancer is the second most common cancer in the world and by far the most frequent cancer among women. <u>Objective</u>: This study was conducted to observe the effect of progressive relaxation exercises on anxiety and comfort level of breast cancer patients receiving chemotherapy. <u>Materials and Methods</u>: A control group pre-test/post-test quasi-experimental model was applied with experimental (30) and control (30) groups, who agreed to participate in this study. Data collection was with the "Personnel Information Form, State-Trait Anxiety Inventory and General Comfort Scale". <u>Results</u>: The average age of the patients that participated in the study was 49.1 ± 7.96 years. Eighty-three point three percent (n=25) of the patients in the experiment group and 86.7 (n=26) percent of patients in control group were married. Patient state of anxiety post-test mean scores were 36.2 ± 8.21 in the experimental group and 43.4 ± 7.96 in the control group, the difference being statistically significant ($p<0.05$). The general comfort scale post-test mean scores were 149.5 ± 13.9 in the experimental group and 137.7 ± 15.0 in the control group, again statistically significant ($p<0.05$). <u>Conclusions</u>: Progressive relaxation exercises positively affect patient comfort and anxiety levels in Turkey.

    Keywords: Anxiety - comfort - breast cancer - progressive relaxation exercise - Turkey

Introduction

    Breast cancer is an important health issue, which is the second-most common disease after heart disease in Turkey and many countries around the world, with an increasing incidence (GLOBOCAN 2014). Breast cancer accounts for 45.1% of all cancers in women and the second leading cause of cancer death among women after lung cancer (Saglik Bakanligi 2012; 2014; Sathian et al., 2014).

    The diagnosis and treatment process of breast cancer causes patients to have problems such as pain, changes in body image and sexual life, psychological issues, impaired social life, and lymphedema (Sen and Aydiner, 2011; Yildiz et al., 2011; Enache, 2012). These factors lead to an increased level of anxiety and a reduced level of comfort for the patients (Kelleci et al., 2009; Aydogan et al., 2012; Inan and Ustun, 2013).

    As one of the effective methods on anxiety and comfort, relaxation exercises are a commonly used, efficient, and inexpensive method used to change the mental processes and behavior of the individual (Baltaş and Batlaş, 2012). For cancer patients, advanced nursing interventions, such as relaxation training, have positive effects on anxiety, due to the difficulties of the disease and the side effects of chemotherapy administered (Mishra et

al., 2012; Hua Song et al., 2013).

    The present study was planned to investigate the effect of progressive relaxation exercises on anxiety and comfort status of breast cancer patients who were receiving chemotherapy.

Materials and Methods

Study design

    The study had a control-group, pre-test/post-test, quasi-experimental design. The study population included patients who were diagnosed with breast cancer in the Adult Ambulatory Chemotherapy Unit of a university hospital, underwent mastectomy, and were receiving AC chemotherapy protocol.

Data collection

    The data were collected using "Personal Details Form" prepared by the researcher; the anxiety levels of the patients were evaluated by the "State-Trait Anxiety Inventory," which was designed by Spielberger et al., and adapted to Turkish and studied for validation and reliability by Oner and Le Compte, and "General Comfort Questionnaire" developed by Kolcaba in 1992. The data were collected through face-to-face interviews by the

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researcher. The test power was established as 0.80 in the power analysis for the study; the required minimum sampling size was established as 25 when the type 1 error was considered to be 0.05. A total of 60 patients (30 for experiment and 30 for control) who were eligible for the sampling criteria among the defined population and who voluntarily consented to participate in the study between 20.07.2012 and 01.06.2013 were included. The patients were provided with information on the study and informed consent forms were obtained. Prior to the implementation, written consent was obtained from the Ethics Committee of the Faculty of Medicine at Cukurova University.
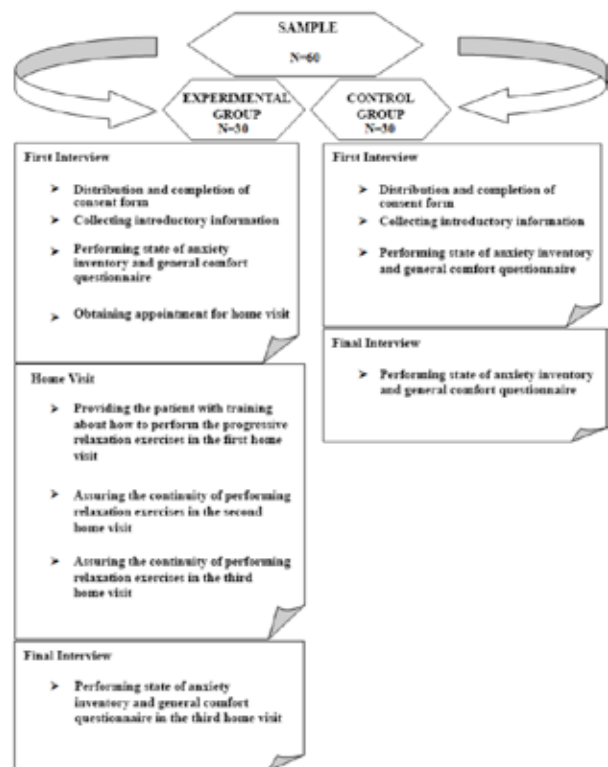
Nursing Intervention Performed on the Experimental Group

Prior to administering chemotherapy to the patients, the personal details form, state-trait anxiety inventory and general comfort questionnaire were administered. An appointment was obtained from the patients for home visits. At the first home visit, training was first provided about progressive relaxation exercises, and then the relaxation exercises CD was listened to. Later, the CD-guided exercises were practiced together with the patient and then the patient was asked to practice these exercises.

Patient training was performed once for each patient, and when the patient did not understand, necessary explanations and repetitions were made to ensure that the patient correctly learned the exercises. The trainings were conducted one-to-one for the patients, the timing of which was an average of 50 minutes for each patient. After the training, the patients were provided with a relaxation exercises CD and a leaflet. The patients were asked to practice the relaxation exercises for three weeks, listening three times per week. During the relaxation exercise training that would last for three weeks, one weekly home visit was made for each patient in the experimental group. The patient was asked to re-practice the relaxation exercises during the home visits. At the end of three weeks, the state of anxiety inventory and general comfort questionnaire were re-administered as a post-test.

Nursing Intervention Performed on the Control Group

The personal details form, state-trait anxiety inventory and general comfort questionnaire were performed on the control group patients when they came for chemotherapy. No practice other than routine nursing care was performed on the patients. At the end of three weeks, the state of anxiety inventory and general comfort questionnaire were administered in the clinic as a post-test.

Statistical analysis

The data were analyzed using SPSS 18 (Statistical Package for Special Sciences) package. The data were analyzed using descriptive tests, X^2, t-test in independent groups, and t-test in paired groups.

Results

The mean age of the patients included in the study was 49.06 ± 7.96 years. Of the experimental group patients, 83.3% were married, 63.3% were elementary school graduates, 90% had children, 63.3% were living in the city center, 90% had equal income and expenses, and 90% had a nuclear family. Of the control group patients, 86.7% were married, 86.7% were elementary school graduates, 73.3% had children, and 56.7% were living in the city center.

Comparison of the mean State-Trait Anxiety and General Comfort Pre-test Score of Patients in Study and Control Groups is presented in Table 1. The difference in the mean pre-test score of all scales performed on the experimental and control group patients was statistically insignificant (p>0.05).

Comparison of mean state of anxiety and overall comfort post-test score of the experimental and control group patients is presented in Table 2. The difference in

Figure 1. Study Implementation Plan

Table 1. Comparison of Mean State-Trait Anxiety and General Comfort Pre-test Score of the Experimental and Control Group Patients

Inventories and Scales Used	Experimental X±SD	Control X±SD	Analyses		
State of anxiety (Pre-test)	42.26±7.49	45.03±5.66	t=-1.613	df= 58	p=0.112
Trait Anxiety	42.96±6.20	45.80±6.03	t=-1.792	df= 58	p=0.070
General Comfort Questionnaire (Pre-test)	140.46±13.10	135.36±12.06	t=1.568	df= 58	p=0.122

100.0

6.3   10.1   20.3   12.8

Table 2. Comparison of Mean State of anxiety and General Comfort Post-test Score of Patients in Study and Control Groups

Inventories and Scales Used	Experimental X±SD	Control X±SD	Analyses		
State of anxiety (Post-test)	36.20±8.21	43.43±7.96	t= -3.463	df= 58	p=0.001
General Comfort (Post-test)	149.53±13.92	137.70±14.96	t= 2.902	df= 58	p=0.005

the mean post-test score of state of anxiety inventory between the experimental and control group patients was statistically significant (p<0.05).

The mean general comfort questionnaire post-test score was 149.53±13.92 in the experimental group and 137.70±14.96 in the control group, and the difference in the mean general comfort questionnaire post-test score between the experimental and control groups was statistically significant (p<0.05).

Discussion

When the experimental and control group patients included in the study were analyzed based on the sociodemographic features, there was no statistically significant difference (p>0.05) and both groups were homogeneous.

The mean state of anxiety pre-test score of the female experimental and control group patients included in the study was compared, the mean state of anxiety pre-test score was 42.26±7.49 in the experimental group and 45.03±5.66 in the control group. No statistically significant difference was found in the mean pre-test score of the state of anxiety inventory between the experimental and control group patients (p>0.05). The mean trait anxiety pre-test score of the female experimental and control group patients included in the study was 42.96±6.2 in the experimental group and 45.80±6.03 in the control group; the difference was statistically insignificant (p>0.05). These results suggest that the women from the experimental and control groups have similar characteristics.

The difference in the mean post-test score of the state of anxiety inventory between the experimental and control group patients was statistically significant (p<0.05). This finding shows that the practice of relaxation exercises was effective in reducing the levels of the state of anxiety of breast cancer patients who are receiving chemotherapy.

When the literature was analyzed, it was revealed that the practice of progressive relaxation exercises caused significant results in terms of reducing anxiety level in many studies (Demiralp and Oflaz, 2011; Charalambous 2011; Song et al., 2013; Cheng et al.,2013).

Furthermore, Song et al. (2013) conducted a study with 50 experimental and 50 control patients who were diagnosed with breast cancer, underwent radical mastectomy, and who would receive chemotherapy for the first time, and had patients perform abdominal breathing exercises and progressive relaxation exercises. The inventory score was 41.8±4.7 in the experimental group patients before practicing the exercises and 39.1±4.5 after the implementation of the practice, and they found that the relaxation exercises reduced anxiety and other side effects of chemotherapy. The conclusion is parallel to the present study.

The study by Cheng et al. (2013) concluded that the relaxation exercises reduced the levels of anxiety and depression in the patients with breast and colorectal cancers.

The study by Charalambous (2011) also achieved similar results. Charalambous found in his study that the relaxation exercises reduced the levels of anxiety and depression in both breast cancer and prostate cancer patients.

The mean general comfort questionnaire pre-test score of the experimental and control group patients included in the study were 140.46±13.10 in the experimental group and 135.36±12.06 in the control group; the difference was statistically insignificant (p>0.05).

The mean general comfort questionnaire post-test score of the experimental and control group patients included in the study was 149.53±13.92 in the experimental group and 137.70±14.96 in the control group; the difference was statistically insignificant (p>0.05). This result confirmed that the progressive relaxation exercises increased the level of comfort in breast cancer patients who were receiving chemotherapy.

Mishra et al. (2012) investigated the effect of exercise intervention on quality of life in all cancer patients who were receiving chemotherapy, and found that these exercises were most effective in the breast cancer patient group and there was reduced depression, sleeping disorders, and fatigue, and increased physical functioning in this group of patients.

Isa et al. (2013) conducted a study with prostate cancer patients and found that the progressive relaxation exercises improved the quality of life of the patients.

The study by Hayama and Inoue (2012) found that deep breathing exercises caused reduced levels of fatigue and anxiety in gynecological cancer patients who were receiving adjuvant chemotherapy.

The studies analyzed based on the literature show a reduction in the side effects of chemotherapy, allowing greater comfort. We concluded that these practices that were performed give patients some level of comfort and to improve the quality of life based on the definition of Kolcaba will increase the level of comfort (Cinar Yucel, 2011). In conclusion, since the practice of progressive relaxation exercises has been found to reduce the anxiety level and increase the comfort level, it may be recommended to teach progressive relaxation exercises to the breast cancer patients who are receiving chemotherapy and to perform the exercises regularly, and to plan similar studies in patients with different types of cancer and in larger groups.

Acknowledgement

References

Anonymous (2012). All cancers (Excluding non-melonoma skin cancer), Estimated incidence, mortality and prevelance worldwide in 2012. Erisim: http://globocan.iarc.fr/Pages/fact_sheets_cancer.aspx Erisim tarihi: 09.02.2014

Aydogan U, Doganer YC, Borazan E, et al (2012). Levels of depression and anxiety in cancer patients and the relationship of coping with the disease. *Turkish J Family Practice*, **16**, 55-0.

Baltas Z, Baltas A (2012). Stress and coping ways. 28th edition, Istanbul: Remzi Bookstore, 195-0.

Charalambous A (2011). The effect of progressive muscle relaxation and guided imargery in improving psychologial well-being and quality-of-life for breast and prostate cancer patients:Initial report. *Eur J Integrative Med*, **3**, 125-1.

Cheng KF, Ang N, Chan N (2013). The effects of relaxation training program on anxiety and depression for older patients with breast and colorectal cancer. 13th International Society of Geriatric Oncology Annual Conference. *Copenhagen*, **24**, 91.

Cinar Yucel S (2011). Kolcaba comfort theory. *J Ege University School Nursing*, **27**,79-8.

Demiralp M, Oflaz F (2011). Relaxation training for anxiety and depression symptoms in patients with breast cancer has no effect on. *TAF Preventive Medicine Bulletin*, **10**, 165-4.

Enache RG (2012). The relationship between anxiety, depression and self-esteem in women with breast cancer after surgery. *Procedia-Social and Behavioral Science*, **33**, 124-7.

Hayama Y, Inoue T (2012). The effect of deep breathing on 'tension-anxiety' and fatigue in cancer patients undergoing adjuvant chemotherapy. *Complementary Therapies Clinical Practice*, **18**, 94-8.

Health Statistics Yearbook 2012. Access:http://sbu.saglik.gov.tr/Ekutuphane/kitaplar/istaturk2012.pdf Access date : 24.01.2014

Hua Song Q, Mei Xu R, Hai Zhang Q, et al (2013). Relaxation training during chemotherapy for breast cancer improves mental health and lessens advers event. *Int J Clin Exp Med*, **6**, 979-4.

Isa RM, Moy FM, Razack AHA, et al (2013). Impact of applied progressive deep muscle relaxation on the health related quality of life among prostate cancer patient- a quasi experimental trial. *Prev Med*, **57**, 37-0.

Inan S F, Ustun B (2013). Biopsychosocial changes in the period after treatment of breast cancer. *J Breast Health*, **9**, 48-1.

Kelleci M, Aydin D, Sabanciogullari S, et al (2009). According to some diagnostic groups of patients hospitalized for anxiety and depression levels. *J Clin Psychiatry*, **12**, 90-8.

Mishra SI, Scherer RW, Snyder C, et al (2012). Exercise interventions on health-related quality of life for people with cancer during active treatment. *Cochrane Database Syst Rev*, **15**, 8.

New World Cancer Statistics. Access: http://www.kanser.gov.tr/daire-faaliyetleri/kanser-istatistikleri.html. Access date: 24.01.2014

Sathian B, Nagaraja SB, Banerjee I, et al (2014). Awareness of breast cancer warning signs and screening methods among female residents of Pokhara valley, Nepal. *Asian Pac J Cancer Prev*, **15**, 4723-26.

Sen F, Aydiner A (2011). Depending on the late side effects of cancer treatment. *J Clin Development*, **24**, 30-2.

Yildiz A, Karayurt O (2011). Women with breast cancer lymphedema due to the difficulties in which they live. *Breast Health J*, **7**, 154-2.