Determining the Symptoms During Chemotherapy and Learning Needs Among Breast Cancer Patients: A Descriptive Study

Meme Kanserli Hastaların Kemoterapi Esnasında Yaşadığı Semptomlar ve Öğrenim Gereksinimlerinin Belirlenmesi: Tanımlayıcı Bir Araştırma

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ABSTRACT Objective: This study was conducted to determine the learning needs and disease-related symptoms in women with breast cancer undergoing chemotherapy. **Material and Methods:** This study was conducted with descriptive and correlational design. The population of the study was composed of female patients with breast cancer who undergoing chemotherapy in the Necmettin Erbakan University Meram Medical Faculty Oncology Hospital Medical Oncology Clinic inpatient unit. The sample of the study was 88 female patients who undergoing chemotherapy with breast cancer who met the inclusion criteria and volunttee to participate in the study. "Patient Information Form", "Edmonton Symptom Assessment Scale" and "Patient Learning Needs Scale" were used as the data collection tool. **Results:** Patients experienced mostly fatigue (7.62±2.96), depression (6.50±3.41), and anxiety (6.32±3.75). Patients had very significant learning needs. The average Patient Learning Needs Scale score was 181.05±36.53. As disease stage of the patients increased, their Patient Learning Needs Scale score also increased (r=0.221, p=0.039). **Conclusion:** Training programs should be organized to meet the learning needs of patients. Meeting the learning needs is important for the control of symptoms developing due to chemotherapy, for the patients to have more compliance to the treatment and to increase their life expectancy.

Keywords: Breast neoplasms; drug therapy; nursing; patient education as topic

ÖZET Amaç: Bu araştırma, meme kanserli kemoterapi uygulanan kadınlarda hastalığa bağlı semptomların ve öğrenim gereksinimlerinin belirlenmesi amacıyla gerçekleştirildi. **Gereç ve Yöntemler:** Bu araştırma, tanımlayıcı ve ilişki arayan desende yapıldı. Araştırmanın evrenini Necmettin Erbakan Üniversitesi Meram Tıp Fakültesi Onkoloji Hastanesi Tıbbi Onkoloji Kliniğinde yatarak kemoterapi uygulanan meme kanserli kadın hastalar oluşturdu. Araştırmanın örneklemini ise araştırmaya katılmak isteyen ve dâhil olma kriterlerine uyan meme kanserli kemoterapi uygulanan 88 kadın hasta oluşturdu. Veri toplama aracı olarak "Hasta Bilgi Formu", "Edmonton Semptom Değerlendirme Ölçeği" ve "Hasta Öğrenme İhtiyaçları Ölçeği" kullanıldı. **Bulgular:** Hastalar çoğunlukla yorgunluk (7,62±2,96), depresyon (6,50±3,41) ve anksiyete (6,32±3,75) yaşamaktaydı. Hastaların çok önemli düzeyde öğrenme gereksinimleri tespit edildi. Ortalama Hasta Öğrenme Gereksinimleri Ölçeği puanı 181,05±36,53 idi. Hastaların hastalık evresi arttıkça Hasta Öğrenme Gereksinimleri Ölçeği puanı da arttı (r=0,221, p=0,039). **Sonuç:** Hastaların öğrenim gereksinimlerinin karşılanması için eğitim programları düzenlenmelidir. Öğrenim gereksinimlerinin karşılanması kemoterapiye bağlı gelişen semptomların kontrolü, hastaların tedaviye daha fazla uyum sağlayabilmesi ve yaşam süresinin artırılması için önemlidir.

Anahtar Kelimeler: Meme neoplazileri; ilaç tedavisi; hemşirelik; konu olarak hasta eğitimi

Cancer is a chronic disease that progress with the uncontrolled proliferation and spread of cells in a part of the body and affects the individual biologically, psychologically, socially, and economically.[1] Breast cancer is one of the most common cancer types in Türkiye with a 10.3% incidence rate and 24,175 new cases among all cancers.[2] Breast cancer is the most commonly diagnosed cancer type in women and constitutes almost 1/3 of all cancers.[3]

Breast cancer can be treated with surgery, chemotherapy, radiotherapy and immunotherapy. Chemotherapy constitutes an important part of cancer

treatment.[4] Chemotherapy, which has very positive effects on survival, leads to severe physical and psychological symptoms in individuals.[5] These symptoms are pain, fatigue, nausea-vomiting, lack of appetite, changes in taste and smell, mucositis, diarrhoea, constipation, alopecia, anaemia, and skin-nail problems.[6] Patients should be assessed before each chemotherapy in terms of these symptoms.

The chemotherapy process brings along many learning needs in patients. Learning need is defined as what an individual knows and what he/she wants to know.[7] Determining the learning needs of patients is the first step of the learning process and is important for planning and implementation of the training programs.[2,4,5]

Cancer patients want to have information about diagnosis, disease, and treatment process, side effects of treatment and recovery possibility.[8,9] In addition, there are learning needs about the management of symptoms developing due to chemotherapy.[10] Training given to patients, whose learning needs are determined, helps individuals to cope with the side effects of the treatment, enhances their quality of life, and reduces their symptoms.[11,12] Trainings provided for the symptom control in cancer patients undergoing chemotherapy provide to acquire comfort and confidence in patients.[13]

Nurses, who are in direct contact with the patient/family during the treatment and care process, have important roles in assessing symptoms and determining the learning needs. This study was conducted to determine the disease-related symptoms and learning needs in women with breast cancer undergoing chemotherapy.

■ MATERIAL AND METHODS

STUDY DESIGN

This descriptive and correlational study was conducted to determine the learning needs and symptoms experienced by patients with breast cancer undergoing chemotherapy.

POPULATION AND SAMPLE

The population of the study was composed of female patients with breast cancer undergoing chemotherapy in Necmettin Erbakan University Meram Medical Faculty Oncology Hospital Medical Oncology inpatient unit. The sample of the study consisted of female patients with breast cancer who were undergoing chemotherapy and wanted to participate in the study between January-June 2021. The sample size was calculated based on the fatigue symptom score seen in patients with cancer receiving palliative care. The patients' fatigue symptom score who take general care was 6.0 ± 2.8. and pallative care were 8.7 ± 1.9 ($p<0.005$).[14] According to the difference in scores in the dependent groups, power analysis was made in the G*Power 3.1.9.4 program (Heinrich Heine University, Germany); It was determined that the sample should consist of at least 83 people, with a power of 0.85, an effect size of 0.297, and a margin of error of 0.05.[15] The study was completed with 88 patient, and the post hoc power was calculated as 0.87.

The inclusion criteria were determined as follows; aware of their diagnosis, undergoing chemotherapy at inpatient unit, being over 18 years of age, being able to speak Turkish and having no mental illness according to patients own statement. The sample of the study was composed of 88 female patients who met the inclusion criteria and agreed to participate in the study. Due to lack of insufficient cohorts, male patients with breast cancer were not included in the study.

Data collections: Data was collected by the researcher by face to face interwievs before discharge, maintaining social distance and wearing masks due to coronavirus disease-2019. It tooks 20-25 minutes for each patient.

DATA COLLECTION TOOLS

"Patient Information Form", "Edmonton Symptom Assessment Scale (ESAS)" and "Patient Learning Needs Scale (PLNS)" for determining the discharge training needs of the patients were used in the study as data collection tools.

Patient Information Form: It includes 14 questions. The form questions breast cancer patients' age, body mass index (BMI), educational background, working status, income status, marital status, history of breast cancer in the family, presence of chronic disease, compliance to medication, disease stage, dis-

ease duration, compliance to disease, status of perceiving the disease, and status of regular exercise.[4,9,10,13,16,17]

ESAS: It was developed by Bruera et al., to evaluate nine symptoms seen commonly in cancer patients.[16] Sadırlı and Ünsar has done the Turkish validity and reliability of the scale in 2009.[17] "There are nine symptoms in the scale; pain, tiredness, nausea, depression, anxiety, drowsiness, appetite, wellbeing, shortness of breath and other. Three additional symptoms seen in patients (changes in the skin and nails, mouth sores, numbness in the hands) were added by Sadırlı and Ünsar".[17] Therefore, the version with 12 items in total was used in this study. "The severity of each symptom is rated with numbers ranging from 0 to 10. While 0 point indicates that there is no symptom, 10 points indicate that the symptoms are felt very severely and the severity of symptom increases from 0 to 10".[17] The Cronbach alpha of the scale was 0.83. In the peresent study Cronbach alpha was 0.79.

PLNS: The PLNS, developed by Bubela et al., in 1990 and adapted to Turkish by Çatal and Dicle, was used in order to determine the information needs of the patients during discharge stage.[18,19] "The scale consists of a total of 50 items and 7 subscales. The scale items are evaluated with Likert type scaling method as '1=not important', '2=slightly important', '3=moderate important', '4=very important', and '5=extremely important'. Accordingly, the patients are asked to select the option that best describes their information needs and priorities before discharge. The evaluation of the scale is conducted on each subdimension and scale total score. Maximum and minimum scores of the scale are 250 and 50. The scale and subscale scores are interpreted by dividing them into the number of questions of overall scale and all subscales between 1 and 5 '1=not important', '2=slightly important', '3=moderate important', '4=very important', as '5=extremely important' according to the significance level".[18,19] "The scores obtained as a result of the scale vary between 50-250 points and the training need of the patient is interpreted as 'not important' for scores between 0-50 points, 'slightly important' for scores between 51-100 points, 'moderate important' for scores between 101-150 points, 'very important' for scores between 151-

200 points, and 'extremely important' for scores between 201-250 points".[18,19] The Cronbach's alpha value of the scale was 0.95. In the present study, the Cronbach's alpha value of the scale was found as 0.96.

DATA ANALYSIS

The data were evaluated in the SPSS 22 packaged software (Chicago, USA). Number, percentage, mean and standard deviation are used for descriptive statistics. Kolmogorov-Smirnov and Shapiro-Wilk tests were used to check the normality. Mann-Whitney U and Kruskal-Wallis tests used. Spearman's correlation analysis was used to evaluate the correlations between PLNS total scores and some variables.

ETHICAL ASPECT OF THE STUDY

In order to conduct the study, ethical approval was obtained from Necmettin Erbakan University Ethics Committee for Non-Medicine and Medical Devices Research (Date: May 8, 2020, no: 2020/2461) and written permissions from Meram Faculty of Medicine Hospital management (Date: October 14, 2020, no: 14567952-900-E.68736). Written and verbal consent was obtained from the participants. The study was conducted in accordance with the Declaration of Helsinki.

RESULTS

Table 1 shows the sociodemographic characteristics of the patients participating in the study. It was determined that 44.3% of the patients had the history of breast cancer in their families. 64.8% of the patients had compliance to the disease and 47.7% thought that they had an incurable disease.

Table 2 shows the distribution of the symptoms experienced by the patients. The patients mostly experienced fatigue, depression, and anxiety symptoms.

PLNS total mean score of the patients participating in the present study was 181.05±36.53 and they had a very important level of learning needs. When the importance levels of patients from PLNS subscales were examined, it was determined that the highest importance level belonged to subscales of enhancing quality of life (3.32), treatment and complications (3.31), and medicines (3.31) (Table 3).

TABLE 1: The total PLNS scores based on the descriptive characteristics of the patients.

	n	(%)	PLNS
Marital status			
Single	13	14.8	177.00±58.54
Married	75	85.2	181.75±31.78
			U=452.50/p=0.681
Education level			
Illiterate	8	9.1	203.33±39.94
Primary school	55	62.5	177.67±36.90
High school	15	17.0	173.27±35.67
University	10	11.4	193.47±26.94
			KW=3.91/p=0.271
Working status			
Employed	8	9.1	180.68±36.74
Unemployed	80	90.9	184.69±36.55
			U=294.00/p=0.706
Income status			
High	21	23.9	190.12±24.41
Moderate	64	72.7	180.43±36.69
Low	3	3.4	130.73±70.81
			U=3.20/p=0.202
History of breast cancer in the family			
Yes	39	44.3	185.66±34.00
No	49	55.7	177.37±38.37
			U=785.50/p=0.153
Presence of chronic illness			
Yes	32	36.4	187.92±29.08
No	56	63.6	177.12±39.89
			U=768.50/p=0.269
Compliance to chemotherapy			
Yes	76	86.4	180.71±38.27
No	12	13.6	183.16±23.66
			U=455.00/p=0.990
Compliance to the disease			
Yes	57	64.8	177.63±37.35
No	31	35.2	187.32±34.67
			U=728.50/p=0.1776
Disease perception			
Incurable disease	42	47.7	184.95±32.89
Long-term treatment	37	42.0	172.12±37.70
Easily treated disease	9	10.2	199.52±41.72
			KW=4.429/p=0.109
Doing regular exercise			
Yes	33	37.5	176.61±42.31
No	55	62.5	183.71±32.70
			U=777.52/p=0.262
Age	53.34±12.73		Minimum: 24 Maximum: 89
BMI	28.57±6.55		Minimum: 16 Maximum: 49
Disease stage	3.03±0.73		Minimum: 1 Maximum: 4
Disease duration (year)	3.19±2.52		Minimum: 1 Maximum: 15

PLNS: Patient Learning Needs Scale; BMI: Body mass index; U: Mann-Whitney U; KW: Kruskal Wallis.

Table 4 shows the correlation between some variables and the PLNS total scores. As disease stage of the patients increased, their PLNS scores also increased (r=0.221, p=0.039).

DISCUSSION

This study was conducted to define the symptoms of patients with breast cancer undergoing chemotherapy and their learning needs.

The patients participating in the present study mostly experienced the symptoms of fatigue, depression, and anxiety. It has been determined in the literature that the patients mostly experience the symptoms of fatigue, anxiety, and pain, nausea.[20-22] These symptoms can be severe enough to lead patients to apply to the emergency room and impair their quality of life.[23] Fatigue, which is seen frequently among the chemotherapy-related symptoms, is closely associated with the quality of life, depression and anxiety.[24] Doing physical exercise has an important role in reducing fatigue and enhancing the quality of life.[25] It is emphasized that the anxiety experienced by patients can be reduced with training programs and social support.[26]

In the present study there is not a significant relationship between total PLNS scores and the descriptive characteristics of the patients. Learning needs of cancer patients were affected by factors such as age, gender, cultural characteristics, coping mechanisms, education level, cancer stage, and the cancer type.[27] PLNS scores of the patients who had history of breast cancer in their families were found to be higher although not significant in the present study. Witnessing the cancer process of someone from their families may prevent patients from looking at their future with hope and this can affect the perception of illness. Illness perception is related to how patients evaluate having a disease.[28] The perception of illness in cancer patients affects the quality of life.[29]

It was determined in the present study that the participants had a very important level of learning needs. Likewise, Findik, found in their study that learning needs of patients with breast cancer were close to a very important level.[30] Also it was reported that women with breast cancer have high learning needs.[11]

TABLE 2: The Edmonton Symptom Scale mean scores of the patients.

Symptom	X̄±SD	Symptom	X̄±SD
Pain	3.61±4.19	Appetite	4.92±3.77
Fatigue	7.62±2.96	Wellbeing	5.55±3.39
Nausea	4.32±4.06	Shortness of breath	3.82±4.16
Depression	6.50±3.41	Changes in my skin and nails	5.21±4.56
Anxiety	6.32±3.75	Mouth sores	4.34±4.06
Drowsiness	4.98±4.47	Numbness in the hands	5.90±4.01

SD: Standard deviation.

TABLE 3: The Patient Learning Needs Scale and its Subscales means scores.

Scale and its subscales	Possible lower and higher scores	X̄±SD	Significance level (median)
Medicines	8-40	26.38±5.38	3.31
Activities of living	9-45	29.62±7.15	3.28
Community and follow-up	6-30	18.46±4.44	3.11
Feelings related to condition	5-25	14.79±4.05	3.00
Treatment and complications	9-45	30.85±6.41	3.31
Enhancing quality of life	8-40	26.83±5.76	3.32
Skin care	5-25	15.53±3.57	3.16
PLNS total	50-250	181.05±36.53	3.65

PLNS: Patient Learning Needs Scale; SD: Standard deviation.

TABLE 4: The relationship between PLNS total scores and some variables.

	PLNS	
	r	p value
Disease stage	0.221	**0.039**
Disease duration	0.110	0.306
Patients age	0.168	0.118
BMI	0.024	0.827

PLNS: Patient Learning Needs Scale; BMI: Body mass index; r: Spearman's correlation.

There are also studies reporting that patients receiving breast cancer treatment want to have more information about their diseases.[31] Educational planning should be done according to the individual's needs at each stage of the disease.

In the present study the participants had learning needs mostly in treatment and complications, medicines, and enhancing quality of life. Tariman et al., reported that patients primarily had learning needs about the diagnosis, disease, and treatment process.[8] Lei et al., reported that patients wanted to have information about treatment and their physical cares and Cheng et al., reported that they wanted to have information about the disease management and its side effects.[11,32] Findik, stated that the patients had more learning needs about treatment.[30] It was also reported that the patients needed information about disease management and dietary preferences.[31]

In the present study there is not a significant correlation between PLNS total scores disease duration, patients age and BMI. Obesity increase the risk of developing breast cancer in women.[33] The increase in breast cancer-related deaths is associated with the increase in BMI.[34] Preventing obesity and gaining healthy eating behaviours are important both in terms of preventing cancer and reducing the chemotherapy-induced symptoms. There is a significant correlation between PLNS and disease stage. As the disease stage increases, the learning needs increase. As the stage progresses in cancer, the treatment differs and methods such as surgery, radiotherapy and immunotherapy are added in addition to chemotherapy.[4] For this reason, it is thought that the learning needs of the patients increase as the stage progresses.

Nurses have an indispensable role in systematic review of the side effects experienced by patients undergoing chemotherapy, as well as providing training for their control and supporting the patients psychologically.[13] Beaver et al., reported that nurses were the most important information source in patients with breast cancer.[35] Nurses should determine the learning needs of cancer patients and plan the individual patient education also giving educational material to the patient or their relatives. Defining the learning needs of the patients gives nurses the opportunity to assist patients in coping with the side effects of the treatment.

LIMITATIONS

The study was conducted in only one hospital. Results cannot be generalized.

CONCLUSION

Female patients with breast cancer who are undergoing chemotherapy mostly experience symptoms of fatigue, depression and anxiety. Supportive approaches to symptom control are recommended for this patient group. The learning needs of the patients were very high. As disease stage of the patients increased, their PLNS scores also increased. Training programs should be organized to meet these learning needs in accordance with the needs of the individual. Meeting the learning needs is important for controlling symptoms developing due to chemotherapy, for the patients to comply with the treatment more and increasing the life expectancy. It is recommended to continue studies in larger sample and patient groups.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

All authors contributed equally while this study preparing.

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