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Research

FUNCTIONAL STATUS AND SYMPTOMS OF ELDERLY INDIVIDUALS WITH HAEMATOLOGICAL CANCER RECEIVING CHEMOTHERAPY

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Abstract

Introduction: This study aimed to examine the functional status and symptoms of elderly individuals with haematological cancer receiving chemotherapy.

Materials and Method: This descriptive study was conducted with 69 individuals with haematological cancer aged 65 years and over, who were receiving at least two cycles of chemotherapy in an Oncology Hospital in a Turkish university between October 2013 and April 2015. Ethics committee approval was obtained. The power of the study was 0.90 and the effect size was 1.08. Data were collected using a patient information form, the Edmonton Symptom Assessment Scale (ESAS), the Functional Living Index–Cancer (FLIC); $p < 0.05$ were accepted as statistically significant.

Results: The highest ESAS mean score was observed for fatigue (5.82 ± 3.61). Evaluation of FLIC and subscale mean scores showed that participants had a good functional status and quality of life. Significantly more symptoms were experienced in participants who were female, in the group aged 75 years and over, had diagnosis duration of 7 months and longer ($p< 0.05$). There were positive correlations between nausea and Functional Living Index total scores.

Conclusion: The results of this study suggest that fatigue is the most common symptom. When assessed with FLIC, overall patients' functional status and quality of life are good. It is recommended that counseling by evaluating symptoms of elderly patients with haematological cancer, and the effect these symptoms have on their functional status.

Key Words: Neoplasms, Drug Therapy, Symptom Assessment, Geriatric Nursing.

Araştırma

KEMOTERAPİ ALAN HEMATOLOJİK KANSERLİ YAŞLI BİREYLERİN YAŞADIĞI SEMPTOMLAR VE FONKSİYONEL DURUMLARI

Öz

Giriş: Bu çalışmanın amacı kemoterapi alan hematolojik kanserli yaşlı bireylerin yaşadığı semptomları ve fonksiyonel durumlarını incelemektir.

Gereç ve Yöntem: Tanımlayıcı nitelikteki çalışma Ekim 2013- Nisan.2015 tarihleri arasında Türkiye' de bir üniversitenin Onkoloji Hastanesi'nde, en az iki kür kemoterapi alan, hematolojik kanserli 65 yaş ve üstü 69 bireyle yürütüldü. Etik kurul onayı alındı. Çalışma 0.90 gücünde ve 1.08 etkidedir. Veriler Hasta Bilgi Formu, Edmonton Symptom Assessment Scale (ESAS), Functional Living Index– Cancer (FLIC) kullanılarak toplandı; istatistiksel anlamlılık düzeyi için $p< 0.05$ değeri kabul edildi.

Bulgular: En yüksek ESAS puan ortalaması yorgunlukta bulundu (5,82 ± 3,61). FLIC ve alt gruplarından aldıkları puan ortalamaları değerlendirildiğinde; katılımcıların fonksiyonel durum ve yaşam kalitesinin iyi düzeyde olduğu belirlendi. Kadınlar, 75 yaş ve üzeri grupta olanlar, tanı süresi 7 ay ve üzerinde olanların semptom deneyimini anlamlı derecede daha fazla yaşadığı tespit edildi ($p<0.05$). Bulantı ile FLIC toplam puanları arasında pozitif yönde korelasyon bulundu.

Sonuç: Çalışma sonuçlarına göre en çok yaşanan semptomun yorgunluk olduğu söylenebilir. FLIC ile değerlendirildiğinde çalışmaya katılan bireylerin fonksiyonel durumları ve yaşam kaliteleri iyi düzeydedir. Hematolojik kanserli yaşlı bireylerin yaşadığı semptomları ve bu semptomların fonksiyonel durumlarını etkileme düzeyini değerlendirerek danışmanlık yapılması önerilmektedir.

Anahtar Kelimeler: Kanser, Kemoterapi, Semptom Değerlendirmesi, Geriatri Hemşireliği

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INTRODUCTION

The Ministry of Health 2013 Cancer Statistics Report (1) indicates that the cancer incidence in Turkey is higher than that worldwide and the incidence rates for women and men are lower than those in European Union countries and America. In addition, incidence rates for most cancer types are rising with increasing age (2,3).Age is a key factor in cancer. Most new cancer cases and cancer-related deaths are observed at advanced ages (4).

Drugs used in chemotherapy, a key cancer treatment method, cause side effects such as pain, fatigue, nausea, vomiting, mood changes, loss of appetite, shortness of breath, changes in skin and nails canker sores and numbness in hands (3,5,6,7). In addition to physical symptoms, other problems such as personality disorders, along with emotional, mental and behavioural changes, can be observed in patients with cancer (7). Functional, physical and psychological problems increase with increasing age. Although young patients with cancer reach maximum levels of physical and psychological function after primary treatment, elderly patients experience complications that make recovery difficult. (3).

The symptoms experienced by elderly patients with cancer may adversely affect their functional status and quality of life. For elderly adults, the functional status and quality of life are important to maintain the energy needed to perform daily activities independently, performing daily roles and maintaining health and well-being (2,8,9). Therefore, preventing chemotherapy-related complications, identifying symptoms early and symptom control are of vital importance in nursing care (10).

Evaluation of the functional status enables measurement of patients' self-care ability and level they can fulfil social roles in daily living, and provides solid ground for treatment and follow-up. With functional status assessment changes can be made in medication and those who need physiological support can be referred early. In addition, functional evaluation helps individuals to cope with physical, psychological and social problems, be more productive in society and maintain a good quality of life (8).

This study aimed to examine the functional status and symptoms of elderly patients with haematological cancer receiving chemotherapy. The findings are intended to guide healthcare professionals providing care to elderly patients with haematological cancer and contribute to their practices.

MATERIALS AND METHOD

This descriptive study was conducted to examine functional status and symptoms of elderly patients with haematological cancer. Participants were 69 individuals aged 65 years and over with haematological cancer who were receiving chemotherapy treatment at an outpatient unit in a Turkish university Oncology Hospital between October 2013 and April 2015. The power of the study was 0.90 and the effect size was 1.08. The patients underwent at least two cycles of chemotherapy and the patients were still receiving chemotherapy. The duration between chemotherapy cycles and evaluation ranged from 14 to 28 days. The patients were aware of their cancer diagnosis, were able to verbally communicate, and volunteered to participate in the study.

Ethical committee approval to conduct the study was received from the Erciyes University Clinical Trials Ethics Committee. Institutional permission was obtained from the unit in which the study would be conducted and written permission was received from all participants using an informed consent form.

Data were collected using a patient information form, the Edmonton Symptom Assessment Scale (ESAS), and the Functional Living Index–Cancer (FLIC). The patient information form was prepared by the present researchers based on related literature

(7,11,12). The ESAS was developed by Bruera et al. (13) to evaluate nine frequent symptoms in patients with cancer, including pain, fatigue, nausea, sadness, anxiety, insomnia, loss of appetite, feeling good, shortness of breath and other problems. A Turkish validity and reliability study of the scale was conducted by Yeşilbalkan et al (5). Cronbach's alpha was found to be 0.77 after treatment. The severity of each symptom is rated on a scale from 0–10. Higher scores indicate increased severity of the symptoms.

The FLIC was developed by Schipper et al. (14) in 1984 to evaluate the functional status and quality of life in patients with cancer. The Turkish validity and reliability study of the scale was conducted by Bektaş and Akdemir (12), with a Cronbach's alpha value of 0.79. This 7-point Likert scale includes 22 questions on five subscales: physical functions (nine items), psychological functions (six items), general well-being (three items), social functions (two items) and gastrointestinal symptoms (two items). The highest possible score is 154 and the lowest score is 22. High scores indicate that the quality of life is good when the scale scores are interpreted.

SPSS 22 was used for statistical analysis and $p < 0.05$ was accepted as statistically significant. The tests used were the Shapiro-Wilk test, the Mann Whitney U test, the Kruskal Wallis analysis of variance test, and the Spearman's correlation analysis.

RESULTS

In total (n=69), 40 (58.0%) participants were men. Participants' average age was 71.76 ± 5.05 years, the average diagnosis duration was 9.14 ± 11.59 months and the average number of chemotherapy cycles was 3.51 ± 1.85 (Table 1).

Table 1. Descriptive Characteristics of Elderly Patients with Haematological Cancer Receiving Chemotherapy

Descriptive Characteristics	n= 69	%	Descriptive Characteristics	n= 69	%
Gender			**Marital status**		
Female	29	42.0	Married	57	82.6
Male	40	58.0	Single	12	17.4
Educational Status			**Presence of other diseases**		
Literate	27	39.1	Existence	50	72.5
Primary school	28	40.6	Non-existence	19	27.5
High school	10	14.5	**Health Insurance**		
College	4	5.8	State retirement fund	16	23.2
Income Status			Social insurance institution	38	55.1
Income lower than expenses	22	31.9	Social security organization for artisans and the self-employed	13	18.8
Income and expenses are balanced	41	59.4	Health card for uninsured people in Turkey	2	2.9
Income higher than expenses	6	8.7	**Number of Cycles** (Mean ± SD)	3.51±1.85	
Age (Mean±SD)	71.76±5.05		**Diagnosis period (months)** (Mean ± SD)	9.14±11.59	

Table 2. Distribution of FLIC Scores Based on Descriptive Characteristics of Elderly Patients With Haematological Cancer

FLIC		Physical functions		Psychological functions		General well-being		Social functions		Gastrointestinal symptoms (nausea)		FLIC total	
		Mean ± SD/Median (Min-Max)											
Gender [a]	Female	39.5±6.02	39.0(25–2)	28.96±3.87	30.0(18–36)	13.34±3.87	14.0(5–21)	8.31±5.26	8.0 (2–14)	5.79±4.83	2.0(2–14)	96.06±8.90	97.0(76–116)
	Male	34.70±7.20	35.0(21–47)	30.05±4.73	30.0(22–38)	14.25±2.32	15.0(9–21)	9.17±4.15	1.0(2–15)	3.35±3.13	2.0(2–14)	91.52±10.08	91.0(75–113
p		0.004		0.53		0.21		0.65		0.057		0.06	
Age, years [a]	65–74	36.08±7.35	36.0(21–52)	29.87±5.36	31.0(18–38)	13.97±2.69	15.0(5–21)	9.69±4.50	10.0(2–14)	4.36±4.26	2.0(2–14)	94.0±9.58	94.0(76–116)
	75+	38.50±6.37	38.0(25–51)	28.90±5.13	28.0(21–36)	13.60±3.93	13.0(9–21)	6.65±4.34	8.0(2–14)	4.40±3.73	2.0(2–13)	92.05±10.43	92.0(75–107)
p		0.19		0.44		0.17		0.01		0.46		0.60	
Diagnosis duration [a]	0–6 months	35.48±7.41	36.0(21–51)	29.60±5.42	31.0(18–36)	14.18±3.17	15.0(5–21)	9.95±4.29	10.0(2–14)	3.25±3.0	2.0(2–14)	92.48±9.84	93.0(75–116)
	7+ months	38.23±4.95	38.0(28–47)	30.92±5.57	33.0(21–38)	13.69±3.42	14.0(9–21)	5.38±4.29	2.0(2–14)	7.30±5.36	6.0(2–14)	95.53±7.30	97.0(77–104)
p		0.05		0.85		0.20		0.08		0.01		0.31	
Educational level [b]	Literate	39.44±6.86	39.0(24–52)	29.22±6.06	30.0(18–36)	14.55±3.57	15.0(9–21)	8.03±5.07	8.0(2–14)	6.22±5.07	2.0(2–14)	97.48±9.67	97.0(76–116)
	Primary school	36.75±6.67	37.0(25–48)	29.78±4.95	29.0(22–38)	13.42±2.53	14.0(9–19)	8.50±4.80	8.5(2–14)	3.07±2.24	2.0(2–10)	91.53±10.10	92.5(75–104)
	High school	32.40±5.89	33.0(21–41)	30.40±5.14	31.0(22–36)	13.80±2.09	14.0(9–17)	10.20±2.61	10.0(6–14)	4.00±4.32	2.0(2–14)	90.80±7.11	89.0(82–104)
	College	30.00±6.97	29.5(22–39)	28.75±2.75	28.0(26–32)	12.50±5.0	15.0(5–15)	12.75±1.50	13.0(11–14)	2.00±0.0	2.0(2–2)	86.00±4.08	84.5(83–92)
p		0.01		0.93		0.55		0.24		0.08		0.04	
Income status[b]	Income lower than expenses	36.68±6.05	38.5(27–52)	30.00±5.63	31.0(21–36)	13.72±3.25	15.0(9–21)	8.22±4.64	8.0(2.14)	7.04±4.99	7.0(2–14)	97.68±10.04	98.5(75–113)
	Income and expenses are balanced	36.51±7.38	36.0(21–51)	29.07±5.29	28.0(18–38)	13.75±3.01	14.0(5–21)	9.21±4.63	10.0(2–14)	3.29±3.06	2.082–14)	91.85±8.44	92.0(75–107)
	Income higher than expenses	31.66±7.25	29.0(24–43)	31.66±3.61	32.5(27–36)	15.16±3.12	15.0(12–21)	8.16±5.15	9.5(2–14)	2.00±0.00	2.0(2–2)	88.66±13.58	83.0(80–116)
p		0.10		– 0.51		0.70		0.58		0.002		0.01	
Marital status [a]	Married	36.49±6.94	37.0(21–51)	30.28±4.99	31.0(21–38)	13.94±3.20	15.0(5–21)	8.98±4.70	10.0(2–14)	4.25±3.94	2.0(2–14)	93.94±10.2	94.0(75–116)
	Single	38.16±8.13	38.0(25–52)	26.33±5ç58	26.5(18–36)	13.50±2.46	14.5(9–17)	8.00±4.41	8.5(2–14)	5.00±4.86	2.0(2–14)	91.00±8.62	91.5(76–91)
p		0.51		0.02		0.68		0.47		0.85		0.30	

[a] Mann Whitney U test was performed, [b] Kruskal Wallis variance of analysis was performed

The highest ESAS mean score was for fatigue (5.82 ± 3.61), followed by sadness (3.98 ± 3.67), constipation (3.98 ± 3.88), hair loss (3.94 ± 4.13), weight loss (3.76 ± 3.90), feeling good (3.66 ± 3.32), loss of appetite (3.28 ± 3.90), insomnia (3.26 ± 3.44), anxiety (3.08 ± 3.63), numbness in hands (3.07 ± 3.43), pain (3.02 ± 3.58), fever (2.81 ± 3.51), shortness of breath (2.68 ± 3.60), cankers (2.34 ± 3.71), nausea (1.91 ± 3.11), changes of skin and nails (1.33 ± 2.86), sweating (0.28 ± 1.68), and dizziness (0.04 ± 0.36).

The total mean FLIC score was 93.43 ± 9.80, with the mean subscale scores being: 36.78 ± 7.12 for physical functions, 29.52 ± 5.27 for psychological functions, 13.86 ± 3.08 for general well-being, 8.81 ± 4.63 for social functions, and 4.37 ± 4.09 for gastrointestinal symptoms (nausea).

Pain, fatigue, sadness, anxiety, loss of appetite, cankers, hair loss, fever, and constipation symptoms were higher in women than in men ($p < 0.05$). The weight loss of those in the group aged 75 years and over was higher than in the group aged 65–74 years ($p < 0.05$). Symptoms of feeling good, sadness, fever, and insomnia were more common in patients whose diagnosis duration was 7 months or longer ($p < 0.05$), changes of nails and skin were more common in those who received eight or more cycles of chemotherapy compared with those who received fewer chemotherapy cycles ($p < 0.05$), and participants who had additional diseases suffered from pain and fatigue symptoms significantly more than those without other diseases ($p < 0.05$).

Physical functions of the women were significantly higher than men. Social functions of those aged 65–74 years were significantly higher than 75 and older. Social functions of those having diagnosis period of 0–6 months were significantly higher than 7 months or longer. Gastrointestinal symptoms of those having diagnosis time of 7 months or longer were significantly higher than 0-6 months. Physical functions and overall quality of life of those who were literate were significantly higher than primary school, high school, college. GIS symptoms and overall quality of life of those with income lower than expenses were significantly higher than income and expenses are balanced, income higher than expenses. Psychological functions of married ones were significantly higher than single ($p < 0.05$) (Table 2). There was no significant difference between chemotherapy protocols and the mean FLIC total score (p=0.431), chemotherapy cycles and the duration of evaluation (p: 0.374).

Weak positive correlations were found between FLIC total score and nausea (r_s: 0.32).

DISCUSSION

As the rate of elderly adults increases in the rapidly growing population, the incidence rate of cancer also increases and more than half of the new cancer cases and cancer-related deaths are observed in elderly adults (2,3,4). However, studies on cancer epidemiology in elderly patients are scarce and data are mostly presented as subgroup analyses (15,16).

In this study, the most common symptom in elderly patients with haematological cancer was fatigue. This is consistent with previous studies (3,17). Fatigue has been reported to be the most distressing and most commonly experienced cancer symptom by elderly patients (9). Fatigue is an important symptom as it affects the energy required for elderly adults to perform their daily activities independently and has negative effects on the functional status and quality of life (2,9). The study (11) by Hindistan et al. involving patients with haematological cancer (most aged under 60 years) found that the most common symptom was fatigue, which is similar to the present study involving patients aged 65 years and over. In addition, hair and weight loss symptoms were similarly ranked in the present and the previous studies. In the present study, the most important symptoms after fatigue were sadness and constipation. Deceleration of metabolism and less physical activity due to age may be why constipation was considered a priority symptom.

Another study conducted among general patients with cancer (mostly individuals with gastrointestinal system, respiratory system and gynaecologic cancers)

symptoms of fatigue, nausea, loss of appetite, feeling good, changes in skin and nails, cankers and numbness in hands were reported to increase after treatment. In the same study, mean scores for fatigue, nausea, feeling good and cankers after treatment were higher in patients younger than 60 years, and mean scores for fatigue, sadness, anxiety, loss of appetite, feeling good, cankers and numbness in the hands after treatment were higher in those older than 60 years compared with the mean scores obtained before treatment (7). In the present study, sadness was another common symptom, and, although nausea was less common, the score for GIS symptoms was lower.

Evaluation of FLIC total and subscale mean scores in the present study showed that participants had good functional status and quality of life except for GIS symptoms. In a study by Aydın Bektaş and Akdemir (8), the sample group comprising patients with breast, lung and colon or rectum cancer (mostly aged 56–65 years), and the total and subscale mean scores obtained on the FLIC (except for GIS symptoms) were similar to those obtained in the present study. The score for GIS symptoms was lower in the present study.

In another study involving individuals with breast, prostate and lung cancers and malignant melanoma (average age of 46 years), FLIC mean scores were 92.3 ± 7.2 for the total scale, 38.0 ± 7.1 for physical functions, 13.3 ± 3.2 for general well-being, 11.0 ± 2.0 for social functions, and 5.5 ± 2.9 for gastrointestinal symptoms (18).

In the present study, more symptoms were experienced by those who were female, aged 75 years and above, had a diagnosis duration of 7 months or longer, received eight or more cycles of chemotherapy, and had other diseases. This may be explained by their advanced age, long treatment period, and additional diseases. The results of another study (mostly including patients with breast and haematological cancer aged 60 years and over) revealed that physical symptoms increased as the number of cycles increased (6).

In the present study, physical functions of women were better despite experiencing more symptoms. This may be explained by women having more roles in the family and maintaining more active life.

In the study by Aydın et al. (8), in which the sample comprised patients with breast, lung and colon or rectum cancer mostly aged 56–65 years, the functional status of women with a breast cancer diagnosis was low. This was inconsistent with the present study.

In the present study, physical functions of literate participants were better that those who were primary school, high school, college. This may be explained by the fact that most literate participants were women, and women had better physical functions than men. We also found that psychological functions of married participants were better that those who were single. The happiness levels of married individuals has been related to problem solving ability; when individuals have effective problem solving abilities, their psychological adaption levels increased and they experienced less trait and state anxiety, stress, depression and hopelessness (19). Another study also found that physical, mental, social and environmental life quality of individuals living with their spouses were higher than those who were single (6).

In the present study, the social functions of those aged 65–74 years and whose diagnosis duration was 6 months or shorter were higher than other age/diagnosis duration groups. Individuals may transfer their roles to other family members as a result of their disease.

Considering that most participants lived with their spouses, family members assisted their care, and had diagnosis duration of 6 months or less, the social support provided by their families may explain their better social functions. In another study, the diagnosis period was found not to affect the functional status (8). In the present study, those whose diagnosis duration was 7 months or more and whose income was lower than their expenses had better GIS symptoms, and overall quality of life was better in those who were literate and whose income was lower than their expenses. This situation may be

because patients who had an illness for longer get to know and adapt to their illness, and can learn to deal with the symptoms better. In addition, having lower income and educational level and being older may decrease expectations of life and affect life satisfaction. A previous study stated that lower educational and economic status had adverse effects on the quality of life (20). However, another study found that the educational status did not affect the quality of life, but those who had a higher level of income had a better quality of life (6).

CONCLUSION

According to the results of this study, gender, presence of conditions in addition to cancer, diagnosis duration, and the number of treatment cycles received affected the patients' symptoms and functional life, and thus their quality of life. The most common symptom experienced was fatigue, possibly because patients were in the middle of the chemotherapy process and were receiving aggressive treatment. When assessed with FLIC, overall participants' functional status and quality of life were good. Therefore, it is recommended that counseling by evaluating symptoms of elderly patients with haematological cancer, and the effect these symptoms have on their functional status.

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REFERENCES

1. Turkey Cancer Statistics. T.R. Ministry of Health, Public Health Agency of Turkey, Ankara, 2016. [Internet] Available from: http://kanser.gov.tr/Dosya/ca_istatistik/ANA_rapor_2013v01_2.pdf Access: 22.02.2016. (in Turkish).
2. Wedding U, Pientkab L, Hoffkena K. Quality-of-life in elderly patients with cancer: a short review. Eur J Cancer 2007;43(15): 2203-10. (PMID: 17662595).
3. Eyigor S, Eyigor C, Uslu R. Assessment of pain, fatigue, sleep and quality of life (QoL) in elderly hospitalized cancer patients. Archives of Gerontology and Geriatrics 2010;51(3): 57-61. (PMID: 20044154).
4. Canadian Cancer Society: Canadian cancer statistics 2016. p:31. [Internet] Available from: http://www.cancer.ca/~/media/cancer.ca/CW/cancer%20information/cancer%20101/Canadian%20cancer%20statistics/Canadian-Cancer-Statistics-2016-EN.pdf?la=en Access: 25.12.2016.
5. Yeşilbakan UÖ, Özkütük N, Karadakovan A, Turgut T, Kazgan B. Validity and reliability of the Edmonton Symptom Assessment Scale in Turkish cancer. Turkish Journal of Cancer 2008;38:62–67.
6. Yeşilbalkan UÖ, Akyol DA, Çetinkaya Y, Altın T, Ünlü D. Examination of the effect of chemotherapy treatment on treatment-related symptoms and quality of life in patients. Ege University Journal of Nursing School 2005;21(1):13-31. (in Turkish).
7. Kurt S, Unsar S. Assessment of symptom control in patients with cancer in Northwestern Turkey. Eur J Oncol Nurs 2011;15(2):137-44. (PMID: 20832359).
8. Bektas HA, Akdemir N(a). Examination of functional status of individuals with cancer. Turkey Clinics J Med Sci 2006;26(5):488-499. (in Turkish).
9. Esbensen B A, Thomé B, Thomsen T. Dependency in elderly people newly diagnosed with cancer: a mixed-method study. Eur J Oncol Nurs 2012;16: 137-144. (PMID: 21658999).
10. Kara B, Fesçi H. Self-care and quality of life in cancer. Hematology-Oncology 2004;6(4):124-29. (in Turkish).
11. Hindistan S, Çilingir D, Nural N, Gürsoy AA. Practices of patients with hematologic cancer towards chemotherapy-induced symptoms. Gümüşhane University Journal of Health Sciences 2012;1(3): 153-164. (in Turkish).

12. Bektaş AH, Akdemir N(b). Validity and reliability of functional life scale in individuals with cancer. MN Internal Medicine Sciences 2006;1(5-6):371-80. (in Turkish).

13. Bruera, E, Kuehn N, Miller MJ, Selmser P, Macmillan K. Edmonton symptom assessment system (esas): a simple method for the assessment of palliative care patients. J Palliat Care 1991;7(2):6-9. (PMID: 1714502).

14. Schipper H, Clinch J, McMurray A, Levitt M. Measuring the quality of life of cancer patients: the functional living ındex-cancer: development and validation. J Clin Oncol 1984;2:472-83. (PMID: 6374052).

15. Arslan Ç, Kılıçkap S, Dede DŞ et al. Distribution of cancer prevalence in population aged 65 years and over: results of cancer registration system of Hacettepe University hospitals. Turkish Journal of Geriatrics 2011;14(3):187-192. (in Turkish).

16. Türköz FP, Tokluoğlu S, Durnalı AG et al. Cancer evaluation in geriatric population: a single ınstitution experience. International Journal of Hematology and Oncology 2013;23(1):28-33.

17. Anderson KO, Getto CJ, Mendoza TR et al. Fatigue and sleep disturbance in patients with cancer, patients with clinical depression, and community-dwelling adults. J Pain Symptom Manage 2003;25(4):307-318. (PMID: 12691682).

18. Dedeli Ö, Fadıloğlu Ç, Uslu R. Examination of functional status and perceived social support of individuals with cancer. Turkish Journal of Oncology 2008;23(3):132-139. (in Turkish).

19. Canbulat N, Çankaya ZC. Prediction of subjective well-being of married individuals. Ege Education Journal 2014;2(15):556-576. (in Turkish).

20. Ovayolu O, Ovayolu N, Kaplan E, Pehlivan M and Karadag G. Symptoms and quality of life: before and after stem cell transplantation in cancer. Pak J Med Sci 2013;29(3):803–808. (PMID: 24353632).