Jinekolojik Onkoloji Hastalarında Yaşam Kalitesi, Psikososyal Stres: Üçüncü Basamak Bir Merkez Deneyimi

Quality of Life, Psychosocial Distress in Gynecologic Oncology Patients: A Tertiary Center Experience

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ÖZET

GİRİŞ ve AMAÇ: Jinekolojik kanseri olan hastaların depresyon, anksiyete ve yaşam kalitelerinin değerlendirilmesi amaçlanmıştır.

YÖNTEM ve GEREÇLER: Bu kesitsel çalışma Nisan-Temmuz 2021 tarihleri arasında jinekolojik onkoloji polikliniğine başvuran hastalarda yapılmıştır. Avrupa Kanser Araştırma ve Tedavi Organizasyonu Yaşam Kalitesi Ölçeğin (EORTC QLQ-C30) ve Hastane Anksiyete ve Depresyon Ölçeğinin (HADS) kullanılarak kullanılmıştır.

BULGULAR: 372 hastanın 40'ı rahim ağzı kanseri, 32'si yumurtalık kanseri, 53'ü endometriyal kanser ve 247'si servikal intraepitelyal neoplazi idi. Duygusal işlev (72.06±25.93) en çok etkilenen alan olurken, sosyal işlev (86.33 ± 22.84) en az etkilenen alan olmuştur. Tıbbi bir sağlık sorunu bildiren, örgün eğitim almamış, işsiz hastalar, ve aylık aile geliri yoksulluk sınırının altında olan hastaları n yaşam kalitesi önemli ölçüde daha düşüktü. Endometriyal kanseri olan hastalar daha iyi bir QoL ile ilişkilendirilirken, over kanseri olan hastaları daha kötü QoL'ye sahipti. Radyasyon ve kemoterapi alan hastalarda fiziksel ve sosyal işlevsellik önemli ölçüde zayıftı (p<0,05).

TARTIŞMA ve SONUÇ: Araştırma sonucuna göre, bazı sosyo-demografik ve klinik özelliklerde QoL ile duygusal stres arasında anlamlı bir ilişki saptanmıştır ve QoL'yi iyileştirmeye yönelik müdahalelerde dikkate alınmalıdır.

Anahtar Kelimeler: kanser, COVID-19, EORTC QLQ-C30, HADS, yaşam kalitesi

ABSTRACT

INTRODUCTION: To evaluate the depression, anxiety, and quality of life in gynecologic oncology patients.

METHODS: This cross-sectional study was conducted on patients attending gynecologic oncology outpatient clinic from April to July 2021. A total of 372 patients were interviewed using the European Organization for Research and Treatment of Cancer Quality of Life Core Questionnaire (EORTC QLQ-C30) and the Hospital Anxiety and Depression Scale (HADS).

RESULTS: Of 372 patients, 40 were cervical cancer, 32 were ovarian cancer, 53 were endometrial cancer, and 247 were cervical intraepithelial neoplasia. Emotional function (72.06±25.93) was the most affected domain, whereas social function (86.33 ± 22.84) was least affected. Patients who reported a medical health problem, received no formal education, unemployed, and having a montly family income below poverty line had significantly lower QoL. Endometrial cancer was associated with a better QoL, while ovarian cancer patients had worse QoL. Receiving radiation and chemotherapy had significantly poor physical and social functioning (p<0,05).

DISCUSSION AND CONCLUSION: There was a significant association between QoL and emotional distress on some socio-demographic and clinical characteristics and should be taken into consideration in interventions to improve QoL.

Keywords: cancer, COVID-19, EORTC QLQ-C30, HADS, quality of lifecomplication

INTRODUCTION

Worldwide, an estimated cancer incidence was 19.3 million in 2020. In 2040, with the increased global population, the global cancer burden is expected to increase by 47% to 28.4 million cases, the majority of which are gynecological cancers (1).

Human papillomaviruses (HPV) are viruses that can infect the skin or mucous membranes and are associated with precursor lesions for cervical cancer (2). Cervical cancer is classified as the third most common type of cancer among women worldwide (3). Approximately 79 million people are infected with HPV in the United States, and nearly 14 million are newly infected every year (3).

Advances in the early detection and treatment of precancerous lesions increase the number of cancer survivors. While most of the studies have focused on the treatment of gynecological malignancies and outcomes, these developments have led to an increase in the importance of studies evaluating the quality of life (4-7).

The quality of life (QoL) includes the assessment of physical, functional, social, and emotional well-being, which is affected by both the disease and the treatment burden (8,9). Therefore, the QoL in patients with gynecological precancerous and cancerous lesions is important in designing interventions to improve patients' outcomes, directing interventions related to physical, psychosocial, and economic impact, and improving patient-clinician communication (7,10).

The aim of the study was thus to examine the depression, anxiety, and the QoL in patients diagnosed with gynecologic cancer and cervical intraepithelial neoplasia who attended our clinic using the European Organization for Research and Treatment of Cancer Quality-of-Life Questionnaire C30 (EORTC QLQ C-30) and the Hospital Anxiety and Depression Scale (HADS).

METHODS

Study design and patient eligibility criteria

This cross-sectional study was conducted on patients diagnosed with gynecological cancer and cervical intraepithelial neoplasia who were admitted to the gynecologic oncology outpatient clinic of our hospital between April and July 2021. Our institution is one of the largest tertiary referral health facility in the country, which performs approximately 800 major surgical operations per year. The database management is in accordance with privacy legislation and the presented study is in accordance with the ethical principle of the Declaration of Helsinki. Ethical approval for this study was obtained by the Research Ethics Committee of Zeynep Kamil Women's and Children's Disease Training and Research Hospital (Approval number: 21/212). Written and verbal consent was obtained from all study participants.

Inclusion criteria were any patients aged 18 and over, who agreed to participate, were diagnosed with cervical intraepithelial neoplasia, had gynecologic malignant diseases, and were under oncologic follow-up. Exclusion criteria were any patients who refused to participate in the study, did not complete the questionnaire, had a history of psychiatric disorder, and those under palliative care.

Patients admitted to the gynecology outpatient clinic were invited to participate in the study. Those who accepted to participate were informed regarding the purpose of the study and were assured that their personal information would remain confidential.

We used two validated widely used well-being and QoL measures and some socio-economic questions in the study. In the first part of the questionnaire, there were socio-economic and demographic questions to obtain information about age, education level, monthly income level, occupation, marital status, number of children, received treatments, and comorbidities such as hypertension, diabetes mellitus, thyroid diseases, cardiovascular diseases, asthma, and chronic obstructive pulmonary disease. In the second and third parts of the questionnaire, the HADS and the EORTC QLQ-C30 were used as scales.

The Hospital Anxiety and Depression Scale (HADS)

The Hospital Anxiety and Depression Scale is a measure used to screen for the entity of depression and anxiety. The HADS was developed by Dr. Phillip Snaith and Anthony Zigmond (1983) and Turkish validity and reliability study was carried out by Aydemir (1997) (11,12). Scores on each subscale of HADS were summed to produce an anxiety score

(HADS-A) and a depression score (HADS-D). Each item was graded on a 4-point scale for a total score ranging from 0-21 for the subscale. A higher score indicates higher distress. 0-7 points were evaluated as normal, 8-10 points borderline, and ≥11 points as abnormal.

EORTC QLQ-C30 quality of life scale

EORTC QLQ-C30 version 3.0 (1993), a 30-item global scale that includes five functional scales- physical, role, cognitive, emotional, and social, and three symptom scales- fatigue, pain, nausea and vomiting, and six single items- dyspnea, insomnia, appetite loss, constipation, diarrhea, and financial difficulties. It is a health and QoL scale adapted to Turkish by Cankurtaran et al. (2008) for validity and reliability (13,14). This questionnaire was developed to evaluate the QoL of cancer patients, translated into more than 100 languages, and used in an average of 5,000 studies worldwide each year. All scales on the EORTC QLQ-C30 ranged in score from 0 to 100 according to the EORTC QLQ scoring manual (15). Higher scores in global health score (GHS) and functioning scales represent better levels of QoL and functioning, while high scores for symptom scales indicate a worse level of symptoms.

Statistical analysis

All statistical analyses were performed using the Statistical Package for the Social Science (IBM SPSS, Version 25.0. Armonk, NY: IBM Corp.). Demographic variables were presented with frequency (n) and percentage (%) values. The t test (for two groups comparison) and one-way ANOVA (for three and above group comparison) were employed. Tukey post-hoc test was performed for comparison between categorical demographic variables. A P value ≤0.05 was considered to indicate statistical significance.

RESULTS

A total of 372 patients with a mean age of 41.0±11.2 years were included in the study. Of 372 patients, 40 (10.8%) were cervical cancer, 32 (8.6%) were ovarian cancer, 53 (14.2%) were endometrial cancer, and 247 (66.7%) were cervical intraepithelial neoplasia. Twenty-five (6.7%) of 372 gynecologic oncology patients had received chemotherapy, and nineteen (5.1%) had radiation. Among all patients, 174 (46.8%) underwent gynecologic oncology surgical procedures. Overall, 40.1% of the participants were primary school

graduates, 58.1% were unemployed, 62.9% were married, 62.6% had two or fewer children, 55.4% had comorbidities, and 34.7% had a monthly income below 2000 Turkish Liras. The baseline characteristics of the study groups are presented in Table 1.

Table 1 Descriptive Characteristics of the Participants

	n	%
Education Status		
No formal education	12	3.2
Primary	149	40.1
Secondary	96	25.8
University	115	30.9
Marital status		
Single	138	37.1
Married	234	62.9
Number of children		
0	103	27.7
1	65	17.5
2	102	27.4
≥3	102	27.4
Comorbidities		
No	166	44.6
Yes	206	55.4
Occupation		
Unemployed	216	58.1
Governmental employee	25	6.7
Laborer	38	10.2
Self-employed	93	25.0
Montly income		
≤2000 TL	129	34.7
2001-3000 TL	114	30.6
3001-4000 TL	77	20.7
≥4001 TL	52	14.0
Disease Type		
Cervical cancer	40	10.8
Ovarian cancer	32	8.6
Endometrial cancer	53	14.2
Premalignant cervical lesions	247	66.4
Anxiety		
Normal	90	24.2
Borderline	122	32.8
Abnormal	160	43.0
Depression		
Normal	79	21.2
Borderline	106	28.5
Abnormal	187	50.3
Surgical treatment		
No	198	53.2
Yes	174	46.8
Chemotherapy		
No	347	93.3
Yes	25	6.7
Radiotherapy		
No	353	94.9
Yes	19	5.1

Abbreviations: TL, Turkish Liras.
Values are presented as number (%).

The mean Global Health Status (GHS) score was 63.6±24.6 and of the functional scales, the emotional function score was 72.0±25.9, whereas social function was 86.3 ± 22.8. The lowest score on the symptom scale was for fatigue (65.4±26.3), whereas nausea-vomiting (91.9±16.1) had the highest score. Mean HADS Anxiety Score (HADS-A) was 9.7±3.2 (range: 2.0–20) and the mean HADS Depression Score (HADS-D) was 10.3±3.2 (range: 3.0–19.0) (Table 2). There was no statistically significant relationship between the analysis of HADS scores by socio-demographic variables, treatment modalities, cervical intraepithelial neoplasia, and cancer types (p>0.05).

Table 2. EORTC- QLQ C-30 and HADS Scores of the Scales Applied to Participants

	Mean±SD	Median (Minimum-Maximum)
EORTC QLQ C-30		
Global_Health Status (GHS)	63.64±24.61	66.66 (0-100)
Functional Scales	78.33±17.46	82.22 (17.78-100)
Physical Functioning (PF)	75.82±19.57	80 (0-100)
Role Functioning (RF)	86.33±22.84	100 (0-100)
Emotional Functioning (EF)	72.06±25.93	75 (0-100)
Cognitive Functioning (CF)	75.08±22.79	83.33 (0-100)
Social Functioning (SF)	86.33±23.20	100 (0-100)
Symptom Scales	78.66±16.75	82.05 (25.64-100)
Fatigue (FA)	65.47±26.39	66.67 (0-100)
Nausea-Vomiting (NV)	91.98±16.11	100 (0-100)
Pain (PA)	76.29±25.91	83.33 (0-100)
Dyspnoea (DY)	84.76±24.12	100 (0-100)
Insomnia-Sleep (SL)	66.30±31.24	66.67 (0-100)
Appetite Loss (AP)	83.15±25.01	100 (0-100)
Constipation (CO)	81.63±27.58	100 (0-100)
Diarrhoea (DI)	90.32±20.37	100 (0-100)
Financial Difficulties (FI)	83.42±28.38	100 (0-100)
HADS		
Anxiety	9.75±3.21	10 (2-20)
Depression	10.35±3.25	11 (3-19)

Abbreviations:EORTC QLQ C-30, European Organization for Research and Treatment of Cancer Quality-of-Life Questionnaire C30; HADS, Hospital Anxiety and Depression Scale;SD, Standard Deviation.
Values are presented as Mean±±SD or median (range).

Patients who received no formal education had significantly lower scores for GHS, and functional health scores compared to those who graduated from university (p<0,001). As literacy increases, there is a statistically significant increment in GHS, functional, and symptom health scores (all p<0,001). Significantly higher GHS (p=0.015) and functional scale scores (p=0.037) were observed in those with two or fewer children than in those with more than two children. Patients who reported a medical health problem had significantly lower scores on all functional scale domains except role function (p=0.251) compared to healthy subjects (p=0.011). The unemployed participants scored lower on the GHS (p=0.031) and functional scale (p=0.022) than those with a job. The participants who had a monthly income below 2000 Turkish Liras exhibited lower scores for GHS (p=0.003), functional scale (p=0.002), and symptom scale (0.001) (Table 3 and 4).

The current study indicated that the EORTC-Q30 scale domains varied significantly depending on the type of gynecologic disease. Patients diagnosed with cervical precancerous lesions had a higher score across all scales compared to the cancerous groups except for role functioning. Endometrial cancer was associated with a better score in GHS among cancer

patients, while ovarian cancer patients had significantly worse scores in GHS (p≤0.001) and functional scale [social function (p<0.001)].

Patients who underwent surgery had significantly scored lower on GHS, all functional and symptom health scale domains (all p<0,05).

Functional, and symptom scale domains were significantly lower in those patients who had received chemotherapy. Patients receiving radiation had significantly lower scores for functional scale domains.

Table 3. EORTC QLQ-C30 Functional Scores by Socio-demographic and Clinical Characteristics of Participants (n=372) between April 2021-July 2021

	RF	EF	CF	SF	PF	FS	GHS
Education Status							
No formal school	70.83±31.88	62.5±31.28	61.57±30.92	66.66±32.56	57.78±27.61	62.22±25.81	47.91±32.71
Primary	85.23±23.13	72.25±25.52	74.94±22.07	84.78±22.50	70.07±18.48	76.00±15.79	59.00±25.36
Secondary	87.49±23.19	71.52±27.51	75.34±23.73	88.54±24.34	78.06±20.06	79.62±18.92	68.83±21.33
University	88.40±20.61	73.26±24.61	76.47±21.79	88.55±21.10	83.3±16	81.95±16.00	66.95±23.74
F	2.382	0.640	1.561	3.820	15.302	6.382	5.728
P	0.069	0.589	0.198	**0.010***	**<0.001***	**<0.001***	**0.001***
Number of children							
0	87.70±20.34	69.66±25.58	73.40±22.67	86.56±22.87	81.04±17.05	79.61±16.56	66.02±23.82
1	89.99±19.72	73.72±27.13	76.83±23.29	92.56±14.74	79.18±16.89	81.47±15.50	65.89±24.33
2	84.48±25.50	75.49±24.51	77.83±20.98	84.97±25.74	76.21±19.42	79.13±18.01	66.50±23.45
≥3	84.48±24.17	70.01±26.79	72.93±24.24	83.49±24.76	68.04±21.42	74.24±18.43	56.94±25.77
F	1.132	1.19	1.113	2.214	9.013	2.858	3.552
P	0.336	0.313	0.344	0.086	**<0.001***	**0.037***	**0.015***
Comorbidities							
No	87.85±22.50	75.35±25.44	78.01±23.23	89.16±21.07	78.23±20.53	80.88±18.08	66.31±24.62
Yes	85.11±23.09	69.42±26.07	72.73±22.20	84.06±24.59	73.88±18.59	76.28±16.69	61.49±24.45
t	1.15	2.205	2.232	2.151	2.141	2.548	1.887
p	0.251	**0.028***	**0.026***	**0.032***	**0.033***	**0.011***	0.060
Employment status							
Unemployed	84.56±23.26	71.72±25.66	74.48±23.02	84.56±23.81	72.69±19.5	76.57±17.45	61.30±25.09
Employed	88.78±22.09	72.54±26.37	75.92±22.50	88.78±22.17	80.17±18.89	80.77±17.21	66.88±23.63
t	-1.761	-0.301	-0.601	-1.753	-3.702	-2.300	-2.167
p	0.079	0.763	0.548	0.080	**<0.001***	**0.022***	**0.031***
Montly income							
<2000 TL	82.29±25.06	68.41±28.82	71.75±25.34	83.46±24.25	70.39±21.87	74.26±19.04	58.46±26.41
>2000 TL	88.48±21.31	74.00±24.09	76.86±21.15	87.86±22.52	78.71±17.61	80.49±16.18	66.39±23.19
t	-2.38	-1.883	-1.958	-1.745	-3.728	-3.159	-2.989
p	**0.018***	0.061	0.051	0.082	**<0.001***	**0.002***	**0.003***
Diseases							
Cervical cancer	88.33±18.94	71.87±22.69	74.31±19.92	84.17±23.55	73.83±13.28	77.33±12.63	55.42±26.12
Ovarian cancer	78.12±30.95	66.67±28.78	69.09±27.21	71.35±29.40	65±24.3	69.23±23.67	53.12±27.17
Endometrial cancer	83.02±28.58	71.69±28.32	75.68±23.78	82.39±27.62	69.06±22.46	75.34±19.48	60.85±24.33
Premalignant cervical lesions	87.78±20.56	72.87±25.57	75.86±22.41	89.47±20.25	79±18.24	80.31±16.33	66.94±23.44
F	2.206	0.545	0.859	6.895	8.126	4.653	5.319
p	0.087	0.652	0.462	**<0.001***	**<0.001***	**0.003***	**0.001***
Surgical treatment							
No	88.97±19.73	75.59±23.99	78.23±21.19	93.09±15.75	80.24±17.71	82.31±15.11	69.95±23.71
Yes	83.33±25.65	68.05±27.50	71.52±24.04	78.64±27.56	70.8±20.41	73.80±18.83	56.46±23.69
t	2.352	2.822	2.859	6.098	4.772	4.761	5.474
p	**0.019***	**0.005***	**0.004***	**<0.001***	**<0.001***	**<0.001***	**<0.001***
Chemotherapy							
No	87.08±21.96	72.24±25.69	75.32±22.47	87.56±21.64	77.08±18.28	79.11±16.58	64.02±24.72
Yes	76±31.58	69.67±29.55	71.78±27.12	69.33±35.25	58.4±27.64	67.55±24.84	58.33±22.82
t	1.725	0.478	0.752	2.551	3.327	2.289	1.117
p	0.097	0.633	0.453	**0.017***	**<0.001***	**0.031***	0.265
Radiotherapy							
No	87.29±21.65	72.19±26.05	75.26±22.82	87.35±21.77	76.45±19.1	78.87±17.11	63.86±24.39
Yes	68.42±35.09	69.73±24.09	71.93±22.64	67.54±37.87	64.21±24.77	68.30±21.06	59.65±28.90
t	2.321	0.401	0.62	2.259	2.678	2.591	0.726
p	**0.032***	0.688	0.536	**0.036***	**0.008***	**0.010***	0.469

Abbreviations: EORTC QLQ C-30, European Organization for Research and Treatment of Cancer Quality-of-Life Questionnaire C30; RF, Role Functioning; EF, Emotional Functioning; CF, Cognitive Functioning; SF, Social Functioning; PF, Physical Functioning; FS, Functional Scales; GHS, Global Health Status; TL, Turkish Liras.t test (for two groups comparison) and one way ANOVA (for three and above group comparison) were employed, significant at p-value less than 0.05.*

Table 4. EORTC QLQ-C30 Symptom Scores by Socio-demographic and Clinical Characteristics of Participants (n=372) between April 2021-July 2021

	Fatigue	Nausea-vomiting	Pain	Dyspnoea	Insomnia	Appetite_loss	Constipation	Diarrhoea	Financial Difficulties
Education status									
No formal school	49.07±31.23	86.11±15.62	54.17±33.43	72.22±31.25	52.78±33.21	69.44±33.20	58.33±47.41	75.00±37.94	72.22±31.25
Primary	62.19±26.81	90.16±17.44	70.58±24.76	83.89±23.76	65.32±31.92	80.31±26.28	80.98±26.92	87.92±21.99	80.09±29.49
Secondary	66.32±26.66	92.88±17.05	77.26±27.69	82.64±27.35	65.62±33.31	85.07±23.13	81.59±26.43	92.71±18.86	86.46±29.25
University	70.72±24.01	94.20±13.07	85.22±21.60	88.99±20.09	69.57±28.12	86.67±23.28	84.93±25.84	93.04±15.61	86.38±25.32
F	3.954	2.012	10.699	2.601	1.234	2.826	3.498	4.179	2.108
P	**0.009***	0.112	**<0.001***	0.052	0.297	**0.039***	**0.016***	**0.006***	0.099
Number of children									
0	67.64±25.66	89.97±20.52	79.29±25.83	85.11±25.45	65.05±30.39	83.49±25.08	84.47±25.05	90.61±19.48	85.11±27.51
1	67.01±26.49	93.85±14.60	80.77±20.67	86.15±20.32	63.08±32.34	86.67±21.89	88.20±22.38	93.33±17.87	88.20±23.15
2	66.88±24.02	94.77±10.99	78.43±25.75	85.62±24.15	70.91±30.28	84.97±22.79	80.07±28.63	91.83±17.19	81.69±30.98
≥3	60.89±29.03	90.03±15.95	68.30±27.70	82.68±25.14	65.03±32.29	78.76±28.45	76.14±30.89	86.60±24.93	80.39±29.42
F	1.43	2.368	4.708	0.374	1.084	1.671	3.1	1.812	1.252
P	0.234	0.070	**0.003***	0.772	0.356	0.173	0.027	0.145	0.291
Employment status									
Unemployed	64.35±26.66	90.97±15.89	72.92±26.48	83.95±22.49	66.20±30.58	81.64±25.05	79.63±28.51	90.12±19.95	81.79±29.42
Employed	67.02±26.03	93.37±16.36	80.98±24.42	85.89±26.24	66.45±32.24	85.26±24.89	84.40±26.07	90.59±21.01	85.68±26.80
t	-0.963	-1.422	-2.994	-0.767	-0.076	-1.379	-1.65	-0.221	-1.327
p	0.336	0.156	**0.003***	0.443	0.940	0.169	0.100	0.825	0.185
Montly income									
≤2000 TL	59.95±29.05	89.53±17.31	69.89±28.79	82.17±23.95	62.02±32.21	79.59±27.10	78.04±29.90	86.05±24.89	79.33±32.06
>2000 TL	68.40±24.43	93.28±15.32	79.69±23.60	86.15±24.15	68.59±30.54	85.05±23.68	83.54±26.13	92.59±17.14	85.59±26.03
t	-2.819	-2.064	-3.319	-1.515	-1.938	-2.012	-1.763	-2.669	-1.911
p	**0.005***	**0.040***	**0.001***	0.131	0.053	**0.045***	0.079	**0.008***	0.057
Diseases									
Cervical cancer	62.78±23.27	92.5±13.58	71.25±23.56	83.33±21.35	55.83±31.48	81.67±27.16	78.33±23.33	85.83±24.91	73.33±32.20
Ovarian cancer	52.43±30.16	85.94±21.63	60.42±31.03	84.37±18.90	55.21±31.23	76.04±28.38	78.12±27.58	89.58±23.09	72.92±32.17
Endometrial cancer	59.54±28.83	88.36±16.85	67.29±33.33	76.73±31.75	66.67±32.69	74.21±30.41	85.53±24.90	85.53±25.74	79.24±34.11
Premalignant cervical lesions	68.87±25.14	93.45±15.28	81.11±22.15	86.77±22.99	69.36±30.38	86.23±22.28	81.78±28.77	92.17±17.57	87.31±24.99
F	5.169	3.145	10.185	2.615	3.715	4.54	0.717	2.34	5.251

p	0.002*	0.025*	<0.001*	0.051	0.012*	0.004*	0.542	0.073	0.001*
Surgical treatment									
No	72.33±23.85	94.69±13.38	83.92±18.65	87.88±22.50	70.71±29.58	89.06±20.10	85.86±24.72	93.09±17.85	89.56±23.34
Yes	57.66±27.04	88.89±18.30	67.62±30.02	81.23±25.44	61.30±32.40	76.44±28.23	76.82±29.86	87.16±22.55	76.44±31.86
t	5.516	3.453	6.187	2.655	2.926	4.905	3.154	2.786	4.48
p	<0.001*	0.001*	<0.001*	0.008*	0.004*	<0.001*	0.002*	0.006*	<0.001*
Chemotherapy									
No	66.35±25.65	92.36±15.88	77.28±25.19	85.39±23.73	66.57±30.88	84.15±24.08	82.52±26.49	91.26±18.89	84.05±27.91
Yes	53.33±33.49	86.67±18.63	62.67±32.01	76.00±28.09	62.67±36.41	69.33±33.22	69.33±38.39	77.33±32.94	74.67±33.71
t	1.903	1.49	2.748	1.888	0.603	2.189	1.688	2.089	1.6
p	0.068	0.148	0.006*	0.060	0.547	0.038*	0.103	0.047*	0.110
Radiotherapy									
No	66.04±26.18	92.02±16.09	77.10±25.23	85.08±23.79	66.29±31.38	83.38±24.89	81.77±27.84	90.84±19.49	83.95±28.09
Yes	54.97±28.80	91.23±17.00	61.40±33.82	78.95±29.84	66.67±29.39	78.94±27.69	78.95±22.79	80.70±32.04	73.68±32.54
t	1.785	0.209	1.994	1.08	-0.051	0.752	0.435	1.366	1.538
p	0.075	0.835	0.061	0.281	0.959	0.453	0.664	0.188	0.125

Abbreviations: EORTC QLQ C-30, European Organization for Research and Treatment of Cancer Quality-of-Life Questionnaire C30; RF, Role Functioning; EF, Emotional Functioning; CF, Cognitive Functioning; SF, Social Functioning; PF, Physical Functioning; FS, Functional Scales; GHS, Global Health Status; TL, Turkish Liras.t test (for two groups comparison) and one way ANOVA (for three and above group comparison) were employed,* significant at p-value less than 0.05.

DISCUSSION

In this study, we evaluated anxiety, depressive symptoms, and QoL in patients diagnosed with cervical intraepithelial neoplasia and gynecologic cancer using validated questionnaires. We found that ovarian cancer patients had the worse QoL, but we also noted that receiving chemotherapy and radiotherapy was associated with poor physical and social functioning. In addition, we observed that QoL, functional, and symptom scores were associated not only with the type of disease but also with socio-demographic and clinical characteristics.

Patients scored the lowest on emotional functioning, which is consistent with several studies in the literature that indicated that being diagnosed with cancer or cervical intraepithelial neoplasia primarily affects the emotional functioning of individual lives. Previous studiesin this field showed that anxiety and depression were increased in cancer patients, which negatively affect the QoL, and that most of the cancer patients lived in fear of the recurrence or spread of the disease (16-20).

We found that the social score was the least affected score, which can be attributed to high family support in our culture consistent with the Shirali et al. finding (21). This could be explained by the extensive support provided by Turkish families, relatives, and friends, making a substantial contribution to improving social well-being. Modern approach to cancer care includes the social aspects of the patient. Along with treating the disease, these factors need to be considered. This will enable us to achieve better QoL.

The presence of increased anxiety and depression symptoms in patients diagnosed with cervical intraepithelial neoplasia may be explained by the possibility of developing cancer, worrying about future fertility, psycho-social problems caused by genital warts, concerns about the transmission of HPV, concerns about stigma, relationship issues,

and deterioration in sexual life (22). Additionally, the increased anxiety and depression symptoms in patients diagnosed with gynecological cancer was the possibility of recurrence or spread of the tumor, and uncertainty about the future (17). We think that in order to reduce emotional distress in these patients, it is important to establish effective doctor-patient communication at the time of diagnosis, give adequate information about their disease, emphasize the importance of healthy sexual life, nutrition, and lifestyle habits, and provide psycho-oncological support.

Gynecologic oncology patients who were unemployed, had lower monthly family income, and had lower educational levels were at risk for worse health outcomes (23,24). These patients with lower economic status and literacy may be unaware of HPV or gynecologic cancers. They have less knowledge of the disease and its consequences (25,26), have fewer health-seeking behaviors, are less likely to utilize healthcare services, and have follow-up care with healthcare providers (27,28). So, these individuals may usually come to the hospital with advanced stages of cancer, which results in poor health outcomes, and consequently a low QoL. Therefore, these problems should be given due attention by the concerned authority to improve the QoL.

A recent study by Masià et al. (2016) on the relationship between socio-economic status and QoL in breast cancer patients demonstrated that currently working was associated with a better QoL (29). A plausible explanation for our study result is that educated women are more likely to have a job, have a higher income, have higher health literacy, are more likely to display health-seeking behavior, have greater utilization of health services, and consequently have healthier lives and a better QoL. For this reason, the employment and empowerment of women in societies is of great importance and ensuring that women return to work after cancer treatment and continue to work under appropriate conditions will improve their QoL by improving their emotional and socio-economic functions.

As clinical studies focus primarily on cancer-specific outcomes, patients with comorbidities are often excluded from trials due to higher postoperative complication rates, increased adverse drug-drug interactions owing to polypharmacy, experience greater toxicity levels on account of poor tolerance to chemotherapeutic (30,31). Therefore, there are limited data available on the management of cancer in patients with comorbidities. This study showed that oncology patients with comorbidities have impaired functionality. With the aging population, the number of cancer patients with comorbidities is increasing (32), and clinical trials on patients with comorbidities will pave the way for interventions that can meet the needs of this vulnerable population. Also, the provision of a multidisciplinary approach may be beneficial to meet the increasing care needs.

The current study found that women diagnosed with ovarian cancer had the lowest QoL scores among cancer patients, in agreement with the findings of Miller et al. (24). Possible reasons for this can be explained by being diagnosed with cancer, the burden of surgical treatment, the negative effects of long-term disease, the toxic effects of chemotherapy and radiotherapy, as well as the factors affecting social and physical functioning due to changes in physical appearance or body self-images, such as surgical scarring formation, lower extremity lymphedema, and stoma.

We are aware that our research may have several limitations that need to be considered. First, the number of participants was quite low due to the COVID-19 pandemic restrictions. Second, the cross-sectional design chosen for our research represents data from a single center that includes various types of gynecological cancer and different stages of the disease. It is worth noting that a study focusing on specific types of cancer with a comparison group and a longitudinal design will allow clinicians to sufficiently examine the QoL of patients. Another limitation is that we were unable to investigate the relationship between sexual function since the questionnaire did not include the sexual function assessment. Notwithstanding these limitations, this study has several strengths in that it presents the data of one of the institutions with a high patient volume in the country and uses validated, well-known questionnaires filled in through face-to-face interviews. We are confident that our research provides valuable insight with regard to QoL, the mental well-being of patients diagnosed

with gynecologic cancer, and cervical intraepithelial neoplasia and will serve as a basis for future studies. There is a need for multicenter, longitudinal studies with larger sample sizes, using multi-sub-dimensional comprehensive questionnaires representing patients of all ages, including those with concomitant chronic diseases. Policymakers can translate these scientific studies into effective health policies needed to improve the QoL of this vulnerable group. In addition, treatment preferences may guide the development of patient-centered interventions to improve the QoL of patients following the time of diagnosis and post-treatment period.

The study suggested that ovarian cancer patients suffered from relatively poor QoL and it is worth noting that receiving chemotherapy and radiotherapy may link with poor physical and social functions. There were high levels of anxiety and depression among gynecological oncology patients.

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