

# Evaluation of Sexual Dysfunction in Patients with Hematological Malignancies

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## ABSTRACT

**Objective:** Physiological and/or psychological problems that affect the quality of life of the patients occur depending on the diagnosis and treatment of hematological malignancies. Cancer treatment causes sexual problems such as infertility, vaginal dryness, and erectile dysfunction in the patients. Erectile dysfunction and loss of sexual desire are the most common sexual problems of men, while dyspareunia and loss of sexual desire are the most common sexual problems of women. This descriptive study was carried out to evaluate sexual problems and affecting factors in the patients with hematological cancer. **Methods:** Between July 1, 2011, and July 31, 2011, 45 sexually active patients who volunteered to participate in the study and whose written consents were obtained were included in the study. The data of the study were collected using the descriptive characteristics form prepared by the researchers based on the relevant literature and the

Arizona Sexual Experiences Scale (ASEX). The scale scores range from 5 to 30 and a score of >11 above indicates sexual dysfunction. **Results:** Sexual dysfunction was observed in 62.2% of the patients. About 80.0% of women and 57.1% of men had sexual dysfunction. Sexual dysfunction was observed to be highest between the ages of 52–71 (81.2%) years. The mean total ASEX score was  $15.90 \pm 4.25$  in women and  $13.34 \pm 5.37$  in men. The ability to reach orgasm subscale score was found to differ by gender in the ASEX scale ( $P < 0.05$ ). **Conclusions:** The prevalence of sexual dysfunction is high in the patients with hematological malignancies. It is recommended to evaluate these patients in terms of the presence of sexual dysfunction, as in the patients with other chronic diseases.

**Key words:** Cancer treatment, hematological malignancy, sexual dysfunction

## Introduction

Cancer ranks second among the diseases that cause mortality in our country and in the world.<sup>[1]</sup> According to the Hematological Malignancy Research Network (2010–2016) data, hematological neoplasms are observed at the rate of 67.9 per hundred thousand, and the 5-year survival rate is 70.5%. The cases are listed as non-Hodgkin lymphoma (18.4), leukemia (15.7), plasma cell neoplasms (7.4), and Hodgkin lymphoma (2.7).<sup>[2]</sup> According to the GLOBOCAN 2018

data, the incidence of cancer is 18 million in the world and 210.537 in our country.<sup>[2,3]</sup> Non-Hodgkin lymphoma (2.8%) is the most common hematological cancer in the world, while leukemia (2.9%) is the most common hematological cancer in our country. According to the 2018 incidence data, 15.658 cases had hematological malignancies and 6.029 of them were leukemia cases.<sup>[4]</sup>

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Cancer affects the life and quality of life of individuals in many different ways depending on the localization, stage, treatment method applied, age, and gender.<sup>[5]</sup> Radiotherapy, chemotherapy, immunotherapy, and surgical methods are now generally used in the treatment of cancer. Various symptoms, which may become life-threatening, such as nausea–vomiting, dyspnea, fatigue, pain, and skin changes develop due to these treatments.<sup>[6]</sup> In addition to these symptoms, the change in sex hormones, which may occur depending on the cancer itself or treatment method applied, can lead to the development of sexual problems.<sup>[7]</sup> The prevalence of sexual dysfunction generally varies between 40% and 100% in cancer patients.<sup>[8]</sup> While infertility, vaginal dryness, loss of sexual desire, dyspareunia, decreased ability to reach orgasm, and decreased genital sensitivity are the most common sexual problems in women, erectile dysfunction, anejaculation, retrograde ejaculation, and lack of orgasm are the most common sexual problems in men.<sup>[7]</sup>

Radiotherapy, chemotherapy, immunotherapy, and surgical methods are frequently used in the treatment of hematological cancers, as in other types of cancer. Apart from these methods, different treatment methods such as stem-cell transplantation (SCT) and chimeric antigen receptor T-cell therapy are applied in the treatment of hematological cancer types.<sup>[9]</sup> Treatment varies depending on the prognosis of the disease, presence of risk factors, and cancer subtypes in hematological cancers. Other organ systems such as the cardiovascular system and endocrine system are affected, and even secondary cancers may occur as a result of prolonged treatment.<sup>[10]</sup> Sexual problems arising due to treatment in cancer patients are also seen in these patients. In general, hematological cancer has been shown to have a negative effect on the sexual life of the patients at the rate of 23%–29%.<sup>[11]</sup>

The first theoretical information on sexuality is based on the information obtained by Freud from his patients undergoing psychoanalysis.<sup>[12]</sup> Later, in 1943, Abraham Maslow introduced the “Hierarchy of Needs” theory and stated that the motives or needs that motivate people in life had a system in themselves, and these motives could be gathered in five main groups. These groups consist of physiological needs, safety needs, love and belonging needs, esteem needs, and self-actualization needs at the top of the pyramid. Physiological needs at the bottom include basic human needs such as hunger, thirst, oxygen, sleep, and sexuality. Humans do not address high-level needs without meeting basic physiological needs.<sup>[13]</sup> Kinsey’s study on the sexual behavior of people in 1948 made sexuality a questionable and researchable subject.<sup>[14]</sup>

Sexuality is expressed as the physical, mental, and emotional gender of the individual, the functions of

his/her genital organs, and the state of perceiving and displaying sexuality. According to the World Health Organization (WHO), sexual health is a whole of somatic, intellectual, mental, emotional, and social aspects of the individual. When there is a problem related to these aspects, sexual problems arise.<sup>[15]</sup> Today, three different classification systems are used in the classification of sexual problems and disorders. These are the Diagnostic and Statistical Manual of Mental Disorders (DSM) developed by the American Psychiatric Association, the International Statistical Classification of Diseases (ICD) developed by the WHO, and the Multiaxial Diagnostic System developed by Schover *et al.*<sup>[16]</sup>

Sexuality varies depending on the age, gender, mood, educational status, and socioeconomic status in healthy people.<sup>[17]</sup> The diseases of the individual and treatment methods applied (drugs, surgeries, etc.) also affect the sexual life of the individual.<sup>[18]</sup> Health professionals are responsible for identifying physical and psychological problems caused by the diagnosis and treatment of cancer as well as other diseases and helping individuals with problems.<sup>[15]</sup> Although it is accepted that sexual dysfunction occurring in the patients with hematological malignancies can significantly impair the quality of life of the individuals, this problem is not clinically addressed and neglected.<sup>[19]</sup>

## Methods

### Research design

This study was conducted to evaluate sexual dysfunction in the patients with hematological malignancies.

### Participants and setting

The participants were chosen through purposive sampling. The inclusion criteria included the ability to read Turkish, aged 18 or older, sexually active, married, literate, diagnosed with hematological cancer, and whose treatment continues. Patients undergoing hematopoietic SCT (HSCT) are prohibited by the doctor for the first 3 months after transplantation. Therefore, patients who underwent HSCT were included in the study, with the condition that they should be at least 3 months past the transplant. Patients with comorbid disease were not included in the study since concomitant diseases (diabetes, hypertension, etc.) can affect sexual functions. The participants were drawn from the hematology outpatient clinic in Bursa Uludag University Hospital.

### Data collection

The data of the study were collected using the Arizona Sexual Experiences Scale (ASEX) and a questionnaire form prepared by the researchers based on the relevant literature

and including questions about the sexual experiences and problems of the patients as well as their descriptive characteristics.<sup>[20]</sup> Arizona Sexual Satisfaction Scale was developed in 2000 by McGahuey *et al.*<sup>[21]</sup> The Turkish validity and reliability study of the ASEX was carried out by Soykan. The Cronbach's  $\alpha$  values of the scale were determined as 0.89–0.90 in the study of Soykan. The scale, which has separate forms for men and women, is filled by patients, and there is no need for special training for its interpretation. The scores of this 5-item, 6-likert scale range from 5 to 30, with the higher scores indicating more sexual dysfunction. The scale consists of questions that quantifies sex drive, psychological and physiological arousal, vaginal lubrication/penile erection, ability to reach orgasm, and satisfaction from orgasm in men and women. The cutoff point of the scale was determined as  $>11$ , and the subscales of the scale were associated with the DSM-IV and ICD-10 diagnostic criteria for sexual dysfunction.<sup>[22]</sup>

Forty-five of cancer patients gave informed consent and agreed to answer the questionnaire. They were contacted for participation between July 1, 2011, and July 31, 2011.

### Ethical approval

The study was approved by the institution where the study would be conducted, and written informed consent was obtained from the patients during the study.

### Statistical analysis

IBM Statistical Package for Social Sciences (SPSS Statistics) V22.0 program was used in the analysis of the study data. Descriptive statistical methods (mean, percentage), Mann–Whitney U-test, and Kruskal–Wallis test were used in the statistical analysis of the study data.  $P < 0.05$  was considered statistically significant.

## Results

About 37.8% of the patients were in the 36–51 age group, 77.8% were male, and 40% had a duration of marriage ranging from 16 to 35 years. Nearly 51.1% were primary school graduates. About 44.4% were diagnosed with chronic leukemia and 15.6% underwent HSCT. Those undergoing HSCT were the patients who had autologous stem-cell transplantation and completed the first 3 months of follow-up. About 39.0% of the patients were receiving tyrosine kinase inhibitor therapy, 12.2% were receiving CHOP (cyclophosphamide, doxorubicin (Adriamycin), vincristine (Oncovin), prednisolone, which is a steroid) chemotherapy, and 12.2% were receiving Vincristine, doxorubicin, and dexamethasone chemotherapy. About 46.7% of the patients stated that they had problems with sexual intercourse [Table 1].

Nearly 44% of the patients having problems with sexual intercourse stated that they had a decreased frequency of

sexual intercourse, 36% stated that they had a lack of sexual desire, 20% stated that they had painful intercourse, and 20% stated that they had all these complaints. When the causes of sexual problems were questioned, 31.3% stated that they were due to malaise and fatigue, 25.0% stated that they were due to disease and drug treatment, 18.8% stated that they were due to age, 18.8% stated that they were due to psychological causes, and 6.3% stated that they were due to the protective approach of their spouses to them.

Sexual dysfunction was observed in 62.2% of the patients. Almost 80.0% of women and 57.1% of men had sexual dysfunction. Sexual dysfunction was observed to be highest between the ages of 52 and 71 years (81.2%). Eighty percent of the secondary school graduates had sexual dysfunction. Sexual dysfunction was observed to be highest in those with a marriage duration of 36–55 years (73.3%). Sexual dysfunction was observed at the rate of 60.0% in the patients with acute leukemia, 60 (55.0)% in the patients with chronic leukemia, and 73.3% in the patients with lymphoma. Sexual dysfunction was observed in 71.4% of the patients undergoing stem-cell transplantation. Sexual dysfunction was observed to be highest in those receiving VAD therapy among chemotherapy protocols (100.0%). Almost 95.2% of the patients stated that they had problems with sexual intercourse and they were found to have sexual dysfunction [Table 1].

The mean total ASEX score was  $15.90 \pm 4.25$  in women and  $13.34 \pm 5.37$  in men. There was no statistically significant difference between men and women in terms of sex drive, arousal, vaginal lubrication/penile erection, ability to reach orgasm, and satisfaction from orgasm subscale scores and total scores ( $P < 0.05$ ). However, the ability to reach orgasm subscale score was found to differ by gender in the ASEX scale ( $P < 0.05$ ) [Table 2].

There was no significant relationship between the gender, age, educational status, duration of the marriage, diagnosis, SCT, and treatment protocol of the patients and sexual dysfunction ( $P > 0.05$ ). However, there was a significant relationship between the statement of having problems with sexual intercourse and sexual dysfunction ( $P < 0.05$ ) [Table 3].

## Discussion

Sexual problems may arise due to cultural, psychological, and organic factors.<sup>[23]</sup> In particular, the diagnosis of cancer and treatment or surgical intervention may lead to the feeling of inadequacy, anticipation of pain and harm, change in body image, depression, and fear of being abandoned due to infertility. As a result of these thoughts, the individual may be reluctant to have sexual intercourse.<sup>[8]</sup> Besides, sexuality is accepted as a private subject in our society and difficulties

Table 1: Descriptive characteristics and sexual dysfunction (n=45)

Item	Descriptive characteristics, n (%)	Without sexual dysfunction <11, n (%)	With sexual dysfunction ≥11, n (%)
Gender			
Female	10 (22.2)	2 (20.0)	8 (80.0)
Male	35 (77.8)	15 (42.9)	20 (57.1)
Age (years)			
20-35	12 (26.7)	5 (41.7)	7 (58.3)
36-51	17 (37.8)	9 (52.9)	8 (47.1)
52-71	16 (35.6)	3 (18.8)	13 (81.2)
Educational status			
Primary school	23 (51.1)	8 (34.8)	15 (65.2)
Secondary school	5 (11.1)	1 (20.0)	4 (80.0)
High school	9 (20.0)	5 (55.6)	4 (44.4)
University	8 (17.8)	3 (37.5)	5 (62.5)
Duration of marriage (year)			
1-15	12 (26.7)	4 (33.3)	8 (66.7)
16-35	18 (40.0)	9 (50.0)	9 (50.0)
36-55	15 (33.3)	4 (26.7)	11 (73.3)
Diagnosis			
Acute leukemia	10 (22.2)	4 (40.0)	6 (60.0)
Chronic leukemia	20 (44.4)	9 (45.0)	11 (55.0)
Lymphoma	15 (33.3)	4 (26.7)	11 (73.3)
SCT			
Yes	7 (15.6)	2 (28.6)	5 (71.4)
No	38 (84.4)	15 (39.5)	23 (60.5)
Treatment			
Tyrosine kinase	16 (39.0)	7 (43.8)	9 (56.2)
CHOP	5 (12.2)	2 (40.0)	3 (60.0)
DHAP	1 (2.4)	1 (100.0)	0 (0.0)
VAD	5 (12.2)	0 (0.0)	5 (100.0)
Other	14 (34.1)	7 (50.0)	7 (50.0)
Statement of having problems with sexual intercourse			
Yes	21 (46.7)	1 (4.8)	20 (95.2)
No	24 (53.3)	16 (66.7)	8 (33.3)

<sup>22</sup>The cutoff point of the scale was determined as ≥11. SCT: Stem-cell transplantation, CHOP: Cyclophosphamide, doxorubicin (Adriamycin), vincristine (Oncovin), prednisolone, which is a steroid, DHAP: Dexamethasone, which is a steroid, high dose Ara C, cytarabine, cisplatin, VAD: Vincristine, doxorubicin, and dexamethasone

Table 2: Arizona Sexual Experiences Scale scores of male and female patients

ASEX	Female (n=10)		Male (n=35)		Statistical analysis
	Mean ±SD	Mean rank	Mean ±SD	Mean rank	
ASEX-sex drive	3.0±0.4	25.85	3.0±0.2	22.19	Z=-0.793, P=0.428
ASEX-arousal	3.5±0.3	27.65	2.0±0.2	21.67	Z=-1.314, P=0.189
ASEX-vaginal lubrication/penile erection	3.0±0.2	27.50	2.0±0.2	21.71	Z=-1.262, P=0.207
ASEX-ability to reach orgasm	3.5±0.2	30.25	2.0±0.2	20.93	Z=-2.038, P=0.042*
ASEX-satisfaction from orgasm	3.0±0.2	27.90	3.0±0.2	21.60	Z=-1.449, P=0.147
Total ASEX	15.90±4.25	28.85	13.34±5.37	21.33	Z=-1.600, P=0.109

\*P<0.05 was considered statistically significant. Z: Mann-Whitney U-test, KW: Kruskal-Wallis test. ASEX: Arizona Sexual Experiences Scale, SD: Standard deviation

are experienced in expressing sexual problems due to the effect of the sociocultural structure.<sup>[24]</sup> It is stated in the literature that the patients with hematological malignancies experience sexual problems depending on the treatment.<sup>[19]</sup>

In our study, 64.5% of the patients stated that they had

sexual problems, 44% of the patients having problems with sexual intercourse stated that they had a decreased frequency of sexual intercourse, 36% stated that they had lack of sexual desire, 20% stated that they had painful intercourse, and 20% stated that they had all

**Table 3: Relationship between descriptive characteristics of the patients and sexual dysfunction**

Descriptive characteristics	Mean±SD	Mean rank	Statistical analysis
Gender			
Female	15.90±4.25	28.85	Z= -1.600 P=0.109
Male	13.34±5.37	21.33	
Age (year)			
20-35	12.33±4.81	19.08	KW=5.299 P=0.071
36-51	12.70±4.93	20.09	
52-71	16.37±5.17	29.03	
Educational status			
Primary school	14.69±5.69	24.76	KW=1.969 P=0.579
Secondary school	14.80±3.49	26.00	
High school	12.00±4.76	18.28	
University	13.25±5.33	21.38	
Duration of marriage (year)			
1-15	13.00±4.55	20.96	KW=2.274 P=0.321
16-35	13.22±5.77	20.89	
36-55	15.46±4.98	27.17	
Diagnosis			
Acute leukemia	14.30±4.59	24.60	KW=1.325 P=0.515
Chronic leukemia	13.00±5.73	20.50	
Lymphoma	14.86±5.01	25.27	
SCT			
Yes	13.71±5.34	22.29	Z= -0.157 P=0.875
No	13.94±5.26	23.13	
Treatment			
Tyrosine kinase	13.75±6.01	22.28	KW=4.369 P=0.358
CHOP	13.80±4.43	23.30	
DHAP	7.00±0.00	4.00	
VAD	17.20±3.42	31.60	
Other	13.55±4.99	22.22	
Problems with sexual intercourse			
Yes	17.76±3.89	32.69	Z= -4.640 P=0.000*
No	10.54±3.67	14.52	

\*P<0.05 was considered statistically significant. Z: Mann-Whitney U-test, KW: Kruskal-Wallis test. SCT: Stem-cell transplantation, CHOP: Cyclophosphamide, doxorubicin (Adriamycin), vincristine (Oncovin), prednisolone, which is a steroid, DHAP: Dexamethasone, which is a steroid, high dose Ara C, cytarabine, cisplatin, VAD: Vincristine, doxorubicin, and dexamethasone, SD: Standard deviation

these complaints. Cancer treatment causes painful sexual intercourse in women, as it can lead to a decrease in vaginal lubrication, change in vaginal epithelium, and development of vaginal atrophy, while it causes a lack of sexual desire due to erectile problems in men. Cancer patients are seen to experience sexual dysfunction at the rate of 40%–100% in the literature.<sup>[8]</sup> Greaves *et al.* found that the prevalence of a negative effect of cancer on the sexual life of the patients was between 23% and 29% in their study of patients with hematological malignancies.<sup>[11]</sup> Our study results support the literature in terms of hematological cancer patients experiencing sexual problems.

When the causes of sexual problems were questioned in our study, 31.3% stated that they were due to malaise and fatigue, 25% stated that they were due to disease and drug

treatment, 18.8% stated that they were due to age, 18.8% stated that they were due to psychological causes, and 6.3% stated that they were due to the protective approach of their spouses to them. Malaise and fatigue can be observed due to the decrease in hemoglobin and oxygen concentration after chemotherapy.<sup>[25]</sup> Farthmann *et al.* stated that 55.6% of the patients had a lack of sexual desire after receiving chemotherapy, and this was due to fatigue and loss of libido in their study of patients with breast cancer.<sup>[26]</sup> Our study results support the literature.

In our study, sexual dysfunction was observed in 62.2% of the patients. More specifically, it was observed at the rate of 60.0% in the patients with acute leukemia, 55% in the patients with chronic leukemia, and 73.3% in the patients with lymphoma. Greaves *et al.* found that sexual satisfaction was at the rate of 22% in the patients with Hodgkin lymphoma, 34% in the patients with non-Hodgkin lymphoma, and 24% in the patients with acute leukemia in their study of patients with hematological malignancies.<sup>[11]</sup> Our study results are similar to those of Greaves *et al.* in terms of the presence of sexual dysfunction.

In our study, sexual dysfunction was observed in 80% of women and 57.1% of men. However, it was found that sexual dysfunction did not differ by gender. Greaves *et al.* found that the presence of sexual dysfunction in the lymphoma group showed a significant difference by age and gender in their study of patients with hematological malignancies.<sup>[11]</sup> Our study results differ from those of Greaves *et al.* This is thought to be due to the low number of women in our study.

In our study, sexual dysfunction was observed to be highest between the ages of 52 and 71 (81.2%) years, and it was found that the age did not affect the presence of sexual dysfunction. Greaves *et al.* found in their study that the age had an effect on the presence of sexual dysfunction. Our study results differ from those of Greaves *et al.* This is thought to be due to the fact that the mean age of the patients in our study was higher than that of the study by Greaves *et al.*<sup>[11]</sup>

In our study, 80% of the secondary school graduates had sexual dysfunction. Ege *et al.* found that the low educational status of the individuals and their spouses was associated with sexual function in their study of healthy women. High educational status of spouses is thought to be important with regard to sharing problems that arise and getting professional support.<sup>[27]</sup> Our study results are similar to those of Ege *et al.* in terms of educational status affecting the presence of sexual dysfunction.

In our study, although the presence of sexual dysfunction did not differ significantly depending on the duration of marriage, sexual dysfunction was observed

to be highest in those with a marriage duration of 36-55 years (73.3%).

Alehashemi *et al.* found a relationship between the duration of marriage and sexual dysfunction in their study of female patients diagnosed with multiple sclerosis (MS). This was associated with MS being a chronic and degenerative disease and irreversible damage caused by the disease.<sup>[28]</sup> The difference in the study results is thought to be due to the fact that the patients in our study resumed sexual activity sometime after cancer treatment and that most of the negative effects arising during treatment disappeared after treatment.

In our study, sexual dysfunction was observed in 71.4% of the patients who completed 3 months after HSCT. The patients undergoing HSCT may develop a decrease in libido, vaginal dryness, erectile dysfunction, ejaculation disorder, early menopause, irregular sexual hormones, dyspareunia, and infertility.<sup>[29]</sup> The type of preparation regimen of sexual problems that occur in the patients undergoing HSCT is thought to be associated with the development of cardiovascular complications and psychosocial problems.<sup>[30]</sup> Poor body image, anxiety, decreased self-esteem, fear of relapse/recurrence, concurrent life stress, and concerns about infertility also disrupt sexual cycle in HSCT.<sup>[30]</sup> In addition, the patients undergoing HSCT experience sexual problems due to high-dose corticosteroids and immunosuppressive agents in the treatment of graft versus host disease. Fear of initiating sexual activity and reducing sex drive also contribute to decreased sexual satisfaction in follow-ups after allogeneic stem-cell transplantation.<sup>[29]</sup> Although sexual problems usually occur in the first 2 years after HSCT, they may occur even in 5–10 years after HSCT in some cases followed up in remission.<sup>[30]</sup> Xue *et al.* observed at least one sexual dysfunction problem in 54% of women and 44% of men in their study of patients undergoing HSCT.<sup>[31]</sup> Our study results support the literature.

In our study, sexual dysfunction was observed to be highest in those receiving VAD therapy among chemotherapy protocols 100.0%, and no significant relationship was observed between the treatment protocol and sexual dysfunction. Depending on chemotherapy, women experience decreased sexual interest and vaginal lubrication, inability to reach orgasm, dyspareunia, and decreased sexual attraction. On the other hand, men experience decreased erection and ejaculation ability during orgasm.<sup>[29]</sup> Since the Philadelphia chromosome is detected in chronic myeloid leukemia (CML), the tyrosine kinase inhibitor is used in the treatment of the disease. Sexual dysfunction is one of the side effects of tyrosine kinase inhibitors.<sup>[32]</sup> Tekinalp and Ali found in their study that there was no significant relationship between erectile dysfunction

and the drugs used in male patients diagnosed with CML and using tyrosine kinase inhibitors, but they reported moderate erectile dysfunction at the rate of 45.8%.<sup>[33]</sup> Our study results similar from those of Tekinalp and Ali.

In our study, 95.2% of the patients stated that they had problems with sexual intercourse and they were found to have sexual dysfunction. Christiansen *et al.* reported in their study of patients diagnosed with renal cancer that 61.4% of the patients stated that they were concerned about their sexual life after surgery prior to undergoing nephrectomy. In the same study, different degrees of erectile dysfunction were observed in only 54.7% of men after surgery.<sup>[34]</sup> Our study results are similar to those Christiansen of *et al.* in terms of detecting the presence of sexual dysfunction in most of the individuals stating that they had problems with sexual intercourse. Almost 83.4% of the nurses thought that their patients experienced sexual problems, and 76.7% of them stated that the patients were not provided with sexual counseling in the study by Pinar on the thoughts of nurses about sexual dysfunction in the patients receiving cancer treatment.<sup>[15]</sup> Considering the data on sexual dysfunction in our study, relevant literature, and thoughts of nurses in the study of Pinar, it is thought that counseling should be provided on this issue by people with professional knowledge and skills.

## Conclusions

The prevalence of sexual dysfunction is quite high in the patients with hematological malignancies. Sexual dysfunction is one of the factors that affect the quality of life of the individuals. It is important to evaluate the patients with hematological malignancies in terms of the presence of sexual dysfunction, as in the patients with other chronic diseases. It is recommended to expand trainings on sexual health for health-care professionals to raise their awareness and sensitivity on the sexual problems of the patients.

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## Conflicts of interest

There are no conflicts of interest.

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