Research Article (Araştırma Makalesi)

Burnout in Medical Oncology Staff: Confronting National Facts

Tıbbi Onkoloji Çalışanlarında Tükenmişlik: Ulusal Gerçeklerle Yüzleşmek

Ozge KAMA BASCI[1], Ferhat EKINCI[2], Atike Pinar ERDOGAN[3], Erhan ESER[4]

[1] Balikesir University, Faculty of Medicine, Department of Internal Medicine, Balikesir, Turkey
[2] Sirnak State Hospital, Department of Medical Oncology, Sirnak, Turkey
[3] Manisa Celal Bayar University Faculty of Medicine, Department of Internal Medicine Divison of Medical Oncology, Manisa, Turkey
[4] Manisa Celal Bayar University Faculty of Medicine, Department of Public Health, Manisa, Turkey

Özet

Amaç: Bu çalışma, Türkiye'de onkoloji kliniklerinde çalışan hekim, hemşire ve biyologlarda tükenmişlik sendromu prevalansını ortaya koymayı amaçlamıştır. Ayrıca tükenmişliği etkileyen sosyodemografik faktörlerin incelenmesi,kurumsal önlemlerin yeterliliğinin sorgulanması ve çözüm önerilerine katılımlarının incelenmesi amaçlanmıştır.

Gereç ve Yöntemler: Kesitsel olarak tasarlanmış bu çalışma, Türkiye'de aktif olarak çalışan tüm tıbbi onkoloji personeline ulaşmayı amaçlamış, 323 kişi araştırmaya katılmayı kabul etmiştir. Katılımcıların tükenmişlik durumlarını ölçmek için Maslach Tükenmişlik Envanteri (MBI) kullanılmıştır. İçerisinde üç alt ölçek bulunmaktadır: Duygusal Tükenmişlik (EE), Duyarsızlaşma (DP) ve Kişisel Başarı (PA). Kliniklerde tükenmişliği azaltmaya yönelik çözümlerin uygulanabilirliği sorgulanmış ve tükenmişlik sendromunu önleyici yöntem soruları hazırlanmıştır. İstatistiksel anlamlılık dikkate alındı ve tüm istatistiksel testler iki yönlüydü ($p<0.05$).

Bulgular: 323 katılımcının %38'i tıbbi onkolog, %58'i hemşire ve %4'ü biyologdu. Ortanca yaş 37±9 yıl idi. MBI alt ölçeklerine göre onkoloji personelinin ortalama±SD tükenmişlik düzeyleri EE için 19.7±7.8 (yüksek), DP için 6.0±4.3 (orta) ve PA için 20.9±5.1 (yüksek)'dir. Kırk bir yaşın altındaki katılımcılar daha yüksek riske sahiptir. Bir hobisi olan, iyi bir uyku düzenine sahip olan, düzenli egzersiz yapan katılımcıların tükenmişlik puanları anlamlı olarak daha düşüktür.

Sonuç: Onkoloji çalışanlarının yarısından fazlasında tükenmişlik sendromu saptandı. Genç yaş, aile tipi, uyku, egzersiz ve hobi sahibi olma gibi kişisel faktörler tükenmişliği etkiler. Sağlık çalışanları için tükenmişlik önleyici tedbirler ve hem kurum içi hem genel kapsamlı müdahaleler gereklidir

Anahtar kelimeler: Koruyucu önlemler, Sağlık çalışanı, Tıbbi onkolog, Tükenmişlik

Abstract

Objective: This study aimed to reveal the prevalence of burnout syndrome among physicians, nurses and biologists working in oncology clinics in Turkey. Sociodemographic factors affecting burnout were revealed. The adequacy of institutional measures was questioned and their participation in solution proposals was examined.

Materials and Methods: This cross-sectionally designed study aimed to reach all actively working medical oncology staff in Turkey. 323 of them agreed to participate in the study. Maslach Burnout Inventory (MBI) was used to measure the burnout status of the participants. The scale consists of three subscales: Emotional Exhaustion (EE), depersonalizaiton (DP) and the sensation of reduced personal accomplishment (PA). Clinical burnout reduction solutions were also questioned. The burnout prevention questions were prepared. Statistical significance was considered, and all statistical tests were two-sided ($p<0.05$).

Results: Of 323 participants, 38% were medical oncologists, 58% were nurses and 4% were biologists. The median age was 37±9 years. According to the MBI subscales, the mean±SD burnout levels of the oncology staff are 19.7±7.8 (high) for EE, 6.0±4.3 (moderate) for DP and 20.9±5.1 (high) for PA. Respondents under 41 age has higher risk. The participants who are having a hobby, good sleep pattern, making regular exercises has significantly lower burnout scores.

Conclusion: Burnout syndrome was detected in more than half of oncology workers. Personal factors such as young age, family type, sleep, exercise and having a hobby affect burnout. Preventive measures and interventions are required for health workers

Keywords: Burnout, Health professionals, Medical oncologist, Preventive solutions

Yazışma Adresi: Özge KAMA BAŞCI, Balıkesir Üniversitesi Tıp Fakültesi İç Hastalıkları Ana Bilim Dalı, Balıkesir, Türkiye

Telefon: +905544482591 **e-mail:** ozgee.kama@gmail.com

ORCID No (Sırasıyla): 0000-0002-2755-6768, 0000-0002-9317-942X, 0000-0003-4859-7574, 0000-0002-2514-0056

Geliş tarihi: 31.07.2022

Kabul tarihi: 04.10.2022

DOI: 10.17517/ksutfd.1151313

INTRODUCTION

Burnout is a psychological syndrome that occurs as a long term response to chronic occupational stress (1). Dealing with cancer is known to be extremely stressful (2). Various health care professional groups, especially doctors, nurses and other assistant health care professionals working in oncology centers, may experience burnout. Continuous exposure to fatal diseases and to patients with physical pain, ethical dilemmas regarding treatment decisions, intensive and complex treatment protocols are the precipitating factors to develop burnout syndrome for oncology healthcare workers (3). Approximately 62% of oncologists in the United States experience symptoms of burnout (4). It ranges from 52 to 78 in Europe and Australia. Occupational stress may cause the deterioration of private and professional lives of health care professionals (5). Burnout among oncologists is associated with decreased quality of patient care, more frequent medical error rate and the lack of empathy. Instutional strategies as well as individual efforts are required to prevent or reduce burnout.

In this study, it was planned to reach all physicians, nurses and biologists working at medical oncology departments, and to determine the prevalence of burnout syndrome among medical oncology staff across the country. It has been observed that in previous studies from our country, institutional measures to reduce burnout syndrome have not been questioned (6). Our study differs in terms of shedding light on future solutions by questioning the factors leading to burnout syndrome both individually and institutionally.

MATERIAL AND METHODS

The study was approved by Manisa Celal Bayar University Clinical Research Ethics Committee with the number 20.478.486 dated 15.01.2020. This cross-sectionally designed study aimed to reach all actively working medical oncology doctors, nurses and other staff of chemotherapy units in Turkey. The number of doctors and nurses in the country was reached on a provincial basis by obtaining permission from the Ministry of Health, Department of Personnel. At the time of the study, there were a total of 432 medical oncology doctors and 649 nurses. In addition, we reached 420 more unlisted private hospital employees and medical oncology fellowship physicians from the Turkish Society of Medical Oncology. 620 of them agreed to volunteer between January-April 2020. The number of staff who agreed to participate in the study on a voluntary basis and completed forms was 323. Other volunteers were excluded because they did not complete the questionnaire. As a result, 21.5% of all registered medical oncology workers in Turkey have been reached.

Data Collection

All forms were prepared electronically and sent to the participants via mobile phone message or e-mail. Before sending to the volunteers, the forms were filled out by five independent medical oncologists to check that the questions were understandable. The electronic message was programmed in such a way that it cannot be completed without answering all questions. Thus, all participants answered all questions. General information such as age, gender, hobby, screen exposure, habits and professional characteristics (professional year, income level, working hours.. etc.) were conducted in the socio-demographic information form. Professional satisfaction and clinical burnout reduction solutions were also questioned. The burnout prevention questions were prepared based on intervention studies from literature. (7) Apart from these, the Maslach Burnout Inventory (MBI), which is the most commonly used inventory all over the world, was used to measure the burnout status of the participants. The reliability and validity of the Turkish version of this scale were confirmed by Ergin et al. (8). An individual with burnout syndrome is expected to have higher scores on EE and D and lower scores on PA. In our study, based on the relevant literature, burnout scores are expressed as low, medium and high levels of burnout (EE: low: 0–11, medium 12–17, high: ≥18; D: low: 0–5, moderate: 6–9, high: ≥10; and PA: low: ≥26, moderate: 22–25, high: 0–21) (9–11). In this study, Cronbach's Alpha coefficients were 0.89 for emotional exhaustion, 0.77 for depersonalization, and 0.79 for personal accomplishment.

Statistical Analyses

An evaluation of descriptive statistics was performed for all demographic information. Means and standard deviations (SD) were calculated for continuous variables, while numbers and percentages were produced for non-numerical variables. Analysis of variance (ANOVA) F-test comparison of score means and the post-hoc analysis were used to compare the MBI-HSS scores using demographic variables to determine whether there were any significant differences. About the linear-by-linear association of variables and burnout, Chi-square test was applied to investigate associations between variables and the presence of burnout. Univariate and multivariate logistic regression analyses were performed to determine the factors associated with subdimensions of the MBI.

Statistical significance was considered, and all statistical tests were two-sided ($p<0.05$). All operations were done using the Statistical Package for Social Sciences (SPSS) version 23.0.

RESULTS

Of 323 participants, 38% were medical oncologists, 58% were nurses and 4% were biologists 71 percent of the respondents were female. The median age of participants was 37±9 years, most of them live in a nuclear family (62%). Forty-two point seven percent of the respondents reported exercising regularly and 89% of them have at least one hobby. Only 21.7% of the participants define having good sleep quality and 37.8% of them say their income is more than their expenses. Physicians reported working 44.9±11.9 hours per week. Thirty-six point five percent of the participants have night shifts. According to the MBI subscales, the mean±SD burnout levels of the oncology staff are 19.7±7.8 (high) for EE, 6.0±4.3 (moderate) for DP and 20.9±5.1 (high) for PA. The socio-demographic and occupational characteristics of the participants were summarized with subdimensions of the MBI (**Table 1**). Relation of the subdimensions with characteristics was showen (**Table 2**).

Likert scale questions were asked about work satisfaction and the adequacy of in-clinic measures. Frequency of the answers was summarized in **Table 3**. The table also shows the correlation between answers and MBI scores. Univariate relationships (ORs) with subdimensions and the organizational and characteristic measures were summarized in **Table 4**. Respondents under 41 age has more severe EE, DP and PA (p=0.036). Burnout scores of those with higher income were found to be higher (p=0.031). The participants who are having a hobby, good sleep pattern, making regular exercises has significantly lower burnout scores. While no significant change was observed in EE and DP scores of smokers, personal achievement scores were higher than non-smokers. Higher levels of burnout have observed in the respondents who think that burnout prevention methods are not sufficient in clinic.

DISCUSSION

This study covers a significant amount of all physicians, nurses and biologists working in the oncology department in Turkey. Sixty-one point three percent of the respondents have high risk for emotional exhaustion, 28.4 % of them have depersonalization and 58.8% of them have high risk for decrease of personal accomplishment. In a systematic review and meta-analysis in which 4876 Europian oncologists were evaluated according to emotional exhaustion values, the prevalence of burnout was between 23% and 48%, with an average of 32% (12). This rate was found to be 71.7% in another study examining the burnout syndrome of oncologists working in Eastern Europe (13). In a study conducted on oncology nurses, burnout was found at a rate of 58.6% (14). In general, the results we obtained were consistent with the literature.

There are various studies on burnout syndrome in physicians and nurses. However, our study makes a difference by determining internal causes that increase and prevent burnout. The sociodemographic characteristics found to affect burnout among health care staff in this study were the age (younger), medical practise, exercises, alcohol drinks, income status, family type, sleep patterns and having a hobby (**Table 2**). Recent studies have stated that female gender, young age, less professional experience and not having children are associated with burnout syndrome (15,16). In our study, while there was no difference between the genders, the increase in experience was found to be proportional to the risk of burnout. Apart from the literature, there is a positive correlation between income status and burnout levels. No association was found with smoking and screen exposure.

Likert-scale questions were asked about work satisfaction and interventions for solutions. Inadequate tolerant management, in-hospital education and improvement of problem solving mechanisms have found as related with all three subdimensions. Other factors were found to be related with depersonalization and decrease in personal accomplishment. In one study, while IE was significantly correlated with lack of reward system and work satisfaction showed a significant correlation with personal mission (17). In a study from Canada, 1500 oncology physicians evaluated for burnout and satisfaction. Long working hours, the anxiety of going through the procedures and starting the treatment quickly, the inability to reduce the paperwork were found to be significant among the factors increasing burnout (18).

A meta-analysis of interventions to reduce burnout in oncology doctors showed that; organization-based interventions are more beneficial than employee-based measures. The vast majority of organization-based interventions reviewed were on simple workload, hourly shift rescheduling, and reward system (19). In another meta-analysis on burnout-reducing interventions in oncology nurses, it was stated that group support sessions, encouragement to daily meditation and a mindfullness program applied regularly for a month, significantly reduced burnout and compassion fatigue (20). In this study based on meta-analyses, it was questioned whether organization-based anti-burnout interventions were applied to oncology staff. We asked about their intention to implement these interventions. According to the respondents, preventive burnout interventions were applied between 10-20% in institutions.

Table 1. The socio-demographic and occupational characteristics of the participants

		EE			DP			PA		
Variables (Mean±SD)	**Groups (Frequency)**	**0-11 (low)**	**12-17 (mod)**	**18+ (high)**	**0-5 (low)**	**6-9 (mod)**	**10+ (high)**	**0-21 (high)**	**22-25 (mod)**	**26+ (low)**
Age, years (37±9)	0-30	7	30	52	31	34	24	49	31	7
	31-40	4	44	85	38	53	42	88	38	7
	≥41	13	26	61	39	35	26	53	40	7
Sex	Female (70.9%)	14	69	146	82	84	63	139	76	12
	Male (29.1%)	10	31	52	26	38	29	51	33	9
Specialization	Nurse (58%)	9	57	122	66	75	47	111	64	11
	Biologist (4%)	1	5	5	6	4	1	5	5	1
	Specialist (10%)	5	20	48	20	24	29	50	19	4
	Academic Physician (28%)	9	18	23	16	19	15	24	21	5
Status	Regular (67%)	13	69	137	69	83	67	136	72	11
	Specialist (9%)	4	9	16	9	17	3	12	13	3
	Contracted (24%)	7	22	44	30	22	21	42	23	7
Income-Outcome Status	Less (33.4%)	5	26	77	34	42	32	64	36	7
	Equal (28.8%)	8	29	55	38	34	20	60	27	4
	More (37.8%)	11	45	66	36	46	40	66	46	10
Regular Exercises (per week)	None (48.3%)	9	38	108	48	63	44	96	53	5
	1-2 days (21%)	5	36	59	30	38	32	58	33	8
	≥3 days (31.7%)	10	26	31	30	21	16	36	23	8
Alcohol use (per week)	None (73%)	149	75	12	78	97	63	149	75	12
	1-2 days (16%)	20	23	8	22	12	17	20	23	8
	≥2 days (11%)	21	11	1	8	13	12	21	11	1
Sleep patterns	Bad (33.7%)	4	20	84	28	39	41	67	39	1
	Not bad (44.6%)	13	7	84	50	56	38	89	43	11
	Good (21.7%)	7	33	30	30	27	13	34	27	9
Having a Hobby	No Hobby (11%)	1	8	28	6	16	15	28	8	0
	Sightseeing (8%)	0	6	12	9	6	3	12	4	2
	Others (81%)	23	86	158	93	100	74	150	97	19
Relationship Status	Single (11%)	2	10	24	12	13	11	19	11	5
	Nuclear family (62%)	10	59	131	63	76	61	121	65	13
	Cross-Generational family (5%)	2	6	8	4	8	4	11	4	1
	Single-Parented family (6%)	2	4	11	5	7	5	10	7	0
	Unmarried (16%)	8	21	24	24	18	11	29	22	2
Children	No children (33%)	7	33	67	34	38	35	60	39	7
	1 (29%)	8	29	57	33	33	28	56	32	5
	≥2 (38%)	9	38	74	41	51	29	74	38	9
Length of medical service (years) (14.0±9.1)	0-5	7	19	32	22	21	15	35	20	3
	6-10	2	23	56	20	36	25	48	26	5
	≥11	15	58	110	66	65	52	107	63	13
Length of oncology service (years) (7.0±9.0)	0-5	13	52	109	55	62	57	108	52	12
	6-10	4	31	50	28	37	20	52	29	4
	≥11	24	100	198	25	23	15	30	28	5

EE: Emotional Exhaustion, DP: Depersonalizaiton, PA: Personal accomplishment

Table 2. Relationship between socio-demographic characteristics with MBI scores

Variable	EE p	DP p	PA p
Age (31-40)	0.058	-	-
Specialization	0.032	-	-
Status	0.038	0.064	-
Family type	0.001	-	-
İncome-outcome (Less)	0.01	-	-
Exercise (None)	0.005	-	0.049
Sleep patterns	0.000	0.042	0.013
Hobby	0.029		0.011
Smoking	-	-	0.002
Alcohol drinks	-	-	0.007
Chronic disease/disability	0.051	0.046	-

EE: Emotional Exhaustion, DP: Depersonalizaiton, PA: Personal accomplishment

Table 3. Relationship between likert-scale answers and the MBI subdimensions

	Definetly not %	Possibly/Probably not %	Definitely %	EE	DP	PA
Personal mission	53.6	26.3	20.1	0.000	-	0.031
Changes in duty period	55.4	25.7	18.9	0.000	-	0.020
Reward system	74.9	11.8	13.3	0.000	-	0.001
Tolerant management	53.9	22.9	23.2	0.000	0.049	0.002
In-hospital education	49.8	30.3	19.8	0.010	0.022	0.001
Appropriate environment	74.6	11.1	14.2	0.000	-	0.003
Inclusive social activity	71.2	15.2	13.6	0.008	-	0.002
Reduction of paperwork	74	15.8	10.2	0.000	-	0.038
Internal communication	57.9	24.1	18	0.001	-	0.002
Problem solving mechanisms	61.6	23.5	14.9	0.000	0.077	0.000
	Disagree%	**Undecided%**	**Agree%**			
Reduction of working hours	16.7	19.8	63.5	0.000	0.003	-
Change partition	53.9	21.7	24.5	0.000	0.001	0.061
Early retirement request	22	17.6	60.4	0.000	0.000	0.045
Request to quit	57.6	19.5	22.9	0.000	0.000	0.051
Reduction of weekly working hours	16.7	19.8	63.5	0.028	-	-
Night shift				0.005	0.001	0.001

EE: Emotional Exhaustion, DP: Depersonalizaiton, PA: Personal accomplishment

Table 4. Univariate relationships (ORs) with MBU dimensions and the organizational measures that should be taken.

Variable	EE OR (C.I 95%)	DP OR (C.I 95%)	PA OR (C.I 95%)
Gender (Female)	0.70 (0.42-1.15)	1.50 (0.92- 2.43)	1.30 (0.79-2.11)
Age			
Ref: ≥41	0.89 (0.49-1.66)	0.97 (0.54-1.73)	
<41	1.12 (0.65-1.92)	1.31 (0.54-1.73)	0.92 (0.68-1.23)
Family type			
Ref: Cross-generational family	1.87 (0.67-5.18)	2.30 (0.73-7.16)	1.82 (0.55- 5.97)
Unmarried	0.82 (0.27-2.53)	1.77 (0.95-3.28)	1.23 (0.67-2.24)
Income-outcome status			
Ref: More	2.08 (1.20-3.61)	0.82 (0.49-1.38)	0.88 (0.67- 1.14)
Less	1.25 (0.75-2.18)	0.63 (0.36-1.10)	
Specialization			
Ref: Academic personnel		1.84 (0.43-1.51)	2.35 (1.12- 4.95)
Physician. fellow		0.40 (0.09-1.71)	0.90 (0.24-3.34)
Status			
Ref: Regular		0.92 (0.24-1.21)	1.17 (0.68-2.01)
Contracted		0.54 (0.24-1.21)	0.53 (0.22-1.59)
Smoking habits			
Ref: at least once a day			2.27 (1.39- 3.50)
Alcohol drinks			
Ref: None			0.97 (0.53- 1.67)
Once a week			0.36 (0.14-0.91)
Exercise			
Ref: ≥3 days/week	2.82 (1.55-3.13)	1.93 (1.07-3.49)	1.42 (0.79- 2.54)
None	1.75 (0.93-3.30)	1.72 (0.91-3.24)	1.21 (0.65-2.27)
Sleep patterns			
Ref: Bad	4.55 (2.36-8.78)	1.98 (1.07-3.67)	1.77 (0.96- 3.26)
Good	1.82 (1.02-3.25)	1.20 (0.67-2.14)	1.74 (0.97-3.11)
Hobby			
Ref: No	2.09 (0.94-4.63)	1.75 (086- 3.58)	0.61 (0.41- 0.90)
Yes	1.28 (0.46-3.56)	0.43 (0.14-1.24)	
Night shift	2.15 (1.31-3.51)	2.05 (1.29- 3.26)	2.47 (1.51- 4.05)
Chronic disease	2.13 (1.12-4.02)	1.56 (0.88- 2.74)	0.94 (0.45- 2.08)
Personnel mission (ref:definitely)			
Possibly	1.64 (0.85-3.16)	0.86 (0.44-1.66)	
Definitely not	3.17 (1.75-5.73)	1.34 (0.75- 2.38)	1.71 (0.96- 3.04)
Changes in duty period (ref:definitely)			
Possibly	1.60 (0.82-3.13)	0.79 (0.40-1.55)	2.06 (1.14-3.73)
Definitely not	2.82 (1.55-5.13)	1.26 (0.70-2.25)	2.66 (1.14- 3.73)
Reward system (ref:definitely)			
Possibly	1.79 (0.73-4.38)	1.33 (0.55-3.22)	2.43 (0.98-6.04)
Definitely not	2.96 (1.52-5.77)	1.15 (0.60-2.21)	3.84 (1.92- 7.67)

Tolerant management (ref: definitely)			
Possibly	1.68 (0.87-3.22)	0.99 (0.51-1.90)	1.89 (0.98-3.64)
Definitely not	3.17 (1.80-5.59)	1.45 (0.84-2.51)	2.10 (1.21- 3.66)
In-hospital education (ref: definitely)			
Possibly	1.45 (0.77-2.74)	0.90 (0.47-1.70)	2.07 (1.08-3.94)
Definitely not	2.27 (1.25-4.12)	1.45 (0.81-2.61)	2.47 (1.36- 4.49)
Appropriate environment (ref: definitely)			
Possibly	1.50 (0.62-3.64)	0.75 (0.31-1.81)	1.50 (0.62-3.64)
Definitely not	2.78 (1.46- 5.31)	0.92 (0.48- 1.72)	2.52 (1.32- 4.81)
Inclusive social activity (ref: definitely)			
Possibly	0.66 (0.29-1.51)	0.57 (0.25- 1.30)	3.19 (1.36-7.48)
Definitely not	1.23 (0.63-2.38)	0.76 (0.39- 1.45)	2.94 (1.50- 5.75)
Reduction of paperwork (ref: definitely)			
Possibly		0.58 (0.23-1.41)	1.65 (0.68-3.99)
Definitely not	2.11 (1.27-3.51)	1.07 (0.51-2.22)	2.28 (1.09- 4.77)
Internal communication (ref: definitely)			
Possibly	1.45 (0.73-2.87)		1.88 (0.93-1.76)
Definitely not	2.41 (1.32-4.40)		3.11 (1.69- 5.73)
Problem solving mechanisms (ref: definitely)			
Possibly	1.35 (0.65-2.79)	1.00 (0.48-2.10)	1.79 (0.85-3.77)
Definitely not	2.14 (1.13-4.05)	1.47 (0.77- 2.78)	3.24 (1.68- 6.26)

EE: Emotional Exhaustion, DP: Depersonalizaiton, PA: Personal accomplishment

Tolerant management, personal mission and in-hospital training were the most applied interventions. Sixty point four of them want to retire early, 22.9% of them request to quit the job.

One of the limitations in our study may be the lower number of doctors than nurses. Surgical oncology and radiation oncology were not included study. Therefore, the number of physicians was limited. Considering that burnout scores were higher in female gender and younger workers, this may have caused bias in the study results. Another limitation of the study is that it is made in a cross-sectional design, creating difficulties in evaluating causality.

CONCLUSION

Burnout in oncology workers is a common syndrome that significantly affects personal life and professional satisfaction. Regular exercise, sleep quality, family type and hobbies are the factors that reduce burnout. Organization-based interventions may need to be increased and supervised in order to reduce the desire of employees for early retirement and quitting, and to provide an efficient working environment.

Acknowledgement: The authors would like to thank Prof. Dr. Gamze Göksel for her continuous support and guidance during the study.

Funding: The authors declared that this study has received no financial support.

Conflict of Interest: The authors have no conflicts of interest to declare.

Ethical Approval: The study was approved by Manisa Celal Bayar University Clinical Research Ethics Committee with the number 20.478.486 dated 15.01.2020.

Author contributions: All authors contributed equally to the article.

REFERENCES

1. Arnsten AFT, Shanafelt T. Physician distress and burnout, the neurobiological perspective. Mayo Clin Proc. 2021;96(3):763-769.
2. Shanafelt T, Dyrbye L. Oncologist burnout: Causes, consequences, and responses. J Clin Oncol. 2012;30(11):1235–1241.
3. Wu Y, Wang J, Luo C, Hu S, Lin X, Anderson AE et al. A Comparison of burnout frequency among oncology physicians and nurses working on the frontline and usual wards during the COVID-19 epidemic in Wuhan, China. J Pain Symptom Manage 2020;60(1):60-65.
4. Ledda C, Teodoro M, Virga D, Alabi RO, Hietanen P, Elmusrati M et al. Mitigating Burnout in an oncological unit: A scoping review. Front Public Heal 2021;9:677915.
5. McFarland DC, Hlubocky F, Susaimanickam B, O'Hanlon R, Riba M. Addressing Depression, burnout, and suicide in oncology physicians. Am Soc Clin Oncol Educ B 2019;39:590-598.
6. Avcı O, İriağaç Y, Çavdar E, Şeber ES. Mindfulness Among Medical Oncology Doctors and Its Relation With Burnout: Turkish Oncology Group (TOG) Study. JCO Oncol Pract. 2021;17(7):917–924.
7. Awa WL, Plaumann M, Walter U. Burnout prevention: A review of intervention programs. Patient Educ Couns. 2010;78(2):184–190.
8. Ergin C. Doktor ve Hemşirelerde tükenmişlik ve maslach tükenmişlik ölçeğinin uyarlanması. 7. Ulusal Psikol Kongresi Bilim Çalışmaları, Türk Psikologlar Derneği Yayınları. 1993;143–154.
9. Maslach C, Schaufeli WB, Leiter MP. Job Burnout. Annu Rev Psychol. 2001;52:397-422.
10. Sahraian A, Fazelzadeh A, Mehdizadeh AR, Toobaee SH. Burnout in hospital nurses: A comparison of internal, surgery, psychiatry and burns wards. Int Nurs Rev. 2008;55(1):62–67.
11. Brenninkmeijer V, VanYperen N. How to conduct research on burnout: Advantages and disadvantages of a unidimensional approach in burnout research. Occup Environ Med. 2003;60(SUPPL. 1):16–20.
12. Medisauskaite A, Kamau C. Prevalence of oncologists in distress: Systematic review and meta-analysis. Psychooncology. 2017;26(11):1732-1740.
13. Kust D, Murgic J, Vukovic P, Kruljac I, Prpic M, Zilic A et al. Oncologist burnout syndrome in Eastern Europe: Results of the multinational survey. J Oncol Pract. 2020;16(4):366–376.
14. Kamisli S, Yuce D, Karakilic B, Kilickap S, Hayran M. Cancer patients and oncology nursing: Perspectives of oncology nurses in Turkey. Niger J Clin Pract. 2017;20(9):1065-1073.
15. Tetzlaff ED, Hylton HM, DeMora L, Ruth K, Wong YN. National study of burnout and career satisfaction among physician assistants in oncology: Implications for team-based care. J Oncol Pract. 2018;14(1):11–22.
16. Hlubocky FJ, Shanafelt TD, Back AL, Paice JA, Tetzlaff ED, Friese CR et al. Creating a blueprint of well-being in oncology: an approach for addressing burnout from ASCO's clinician well-being taskforce. Am Soc Clin Oncol Educ B. 2021;(41):339–353.
17. Font A, Corti V, Berger R. Burnout in healthcare professionals in oncology. Procedia Economics and Finance. 2015;228–232.
18. Nguyen TP, Tam VC, Lester RE, Ruiz JC, Bouchard-Fortier A, Card C et al. Burnout among Canadian oncologists and oncology residents. 2014;32(15-suppl):6549–6549.
19. Panagioti M, Panagopoulou E, Bower P, Lewith G, Kontopantelis E, Chew-Graham C et al. Controlled Interventions to reduce burnout in physicians: A systematic review and meta-analysis. JAMA Intern Med. 2017;177(2):195-205.
20. Ortega-Campos E, Vargas-Román K, Velando-Soriano A, Suleiman-Martos N, Cañadas-de la Fuente GA, Albendín-García L et al. Compassion Fatigue, compassion satisfaction, and burnout in oncology nurses: A systematic review and meta-analysis. Sustainability. 2020; 12(1):72.