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ORIGINAL PAPER

Evaluation of burnout syndrome in oncology employees

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Abstract Burnout is an important occupational problem for health care workers. We aimed to assess the burnout levels among oncology employees and to evaluate the sociodemographic and occupational factors contributing to burnout levels. The Maslach Burnout Inventory, which is designed to measure the three stages of burnout-emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA), was used. The study sample consisted of 90 participants with a median age of 34 (range 23–56). The mean levels of burnout in EE, DP and PA stages were 23.80 ± 10.98, 5.21 ± 4.99, and 36.23 ± 8.05, respectively, for the entire sample. Among the 90 participants, 42, 20, and 35.6% of the employees had high levels of burnout in the EE, DP, and PA substage, respectively. Sociodemographic and occupational factors associated with higher levels of burnout included age of less than 35, being unmarried, being childless, >40 work hours per week, working on night shifts, and <10 years experience in the medicine/oncology field. Within all oncology clinics, medical oncology employees had the highest levels of burnout. Furthermore, employees who are not pleased with working in oncology field, who would like to change their speciality if they have an opportunity, and whose family and social lives have been negatively affected by their work experienced higher levels of burnout. Burnout syndrome may influence physical and mental health of the employee and affects the quality of health care as well. Therefore, several individual or organizational efforts should be considered for dealing with burnout.

Keywords Oncology employees · Burnout syndrome · Maslach Burnout Inventory

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Introduction

Losing interest and enthusiasm for work was first described by Freudenberger as a negative occupational phenomenon among the dedicated volunteers working in a clinic for drug addicts [1]. Among the physical and behavioral signs, the volunteers looked, acted, and seemed depressed. Maslach, a researcher in social psychology, mentioned how professionals in health and social services can lose all the emotional feelings and concern for their clients after several months of listening to their problems [2]. Thus, the occupational burnout has been regarded as a consequence of chronic work-related stress [2, 3]. According to Maslach, burnout syndrome (BS) has three stages. The first stage is emotional exhaustion (EE)—the degree to which a person feels emotionally overextended and exhausted by his/her work. The second stage is depersonalization (DP)—the degree to which a person has developed feelings of indifference and cynical attitudes toward recipients of the care, treatment, instruction or the service they provide for

others in their work. The third stage is personal accomplishment (PA)—the degree to which a person gains feelings of competence and successful achievement in his/her work [4].

All professionals may experience BS (e.g., teachers, police officers), but it is more frequent among the health care workers [4]. Employees working in oncology and intensive care units experienced BS more frequently than other health care workers [5, 6]. The degree of burnout for the oncology clinicians was reported between 25–56%, especially for EE and DP stages [7–11]. Dealing with end of life issues, heavy work load, understaffing, unsatisfactory salary, and insufficient spare time for the family and private life may increase the risk of burnout among the oncology employees [9, 12, 13].

BS may often cause symptoms that can adversely affect the quality of life of the health care providers. Symptoms include anxiety, insomnia, depression, and drug addiction [14]. A significant association has been shown between this syndrome and a reduction in job performance and stress-related health problems [15]. Therefore, burnout syndrome may affect the quality of health care.

The aim of this study is to better understand the status of BS and to assess its relation to various individual- and job-related factors of oncology employees of our university hospital.

Materials and methods

Sample

The sample of the study individuals included oncology employees (physicians, nurses, and radiotherapy technicians) from Ege University departments of Radiation Oncology, Medical Oncology, Pediatric Oncology, Haematological Oncology, and the oncology division of Gynecology and Obstetrics. Maslach Burnout Inventory (MBI) was administered to 117 oncology employees, and 90 of them responded and completed the survey. Participation rates of the departments ranged between 55–81% with an overall participation rate of 76% (90/117). The study was performed during January 2006 and May 2006.

Instrumentation

A questionnaire was handed out to the employees of oncology departments and was collected after the completion of the survey. All participants individually completed this two-part survey. The first part consisted of 15 sociodemographic and occupational questions. Sociodemographic questions were about age, gender, marital status, number of children, and the number of family members. The occupational questions were about the participant's clinic, academic degree, years of working in medicine, years of working in oncology, weekly working hours, presence of night shifts, and the following four individualized questions with the designated response options:

1) Did you choose working in oncology on your own will? (no, yes)
2) Are you pleased with working in your current oncology clinic? (no, partially, yes)
3) If you had an opportunity, would you like to change your speciality? (no, yes)
4) Does working in oncology affect your social and family life? (do not have any effect, affects negatively, affects positively, affects in both ways)

For the second part of the survey, in order to measure burnout, the Turkish version of MBI, which is a self-administered questionnaire, was used [3]. MBI consists of 22 questions designed to measure the three stages of burnout. All of the questions of MBI are scored on a Likert scale ranging from 0 (never) to 6 (every day). The first stage, emotional exhaustion (EE), consisted of nine questions. A high level of burnout was defined as a high level of EE (score of 27 or higher). The second stage, depersonalization (DP), was assessed by five questions. A high level of burnout was defined as a high level of DP (score of 10 or higher). The final stage, personal accomplishment (PA), was measured by eight questions. A high level of burnout was defined as low level of PA (score of 33 or lower) [3].

The scores for each of the stages were the summative total of the scores for the questions related to each area. A high score for EE or DP indicated high levels for those stages of burnout. Conversely, low score for PA indicated high levels of burnout for this stage. According to MBI manual, a high score on the EE and/or DP stages is an indicator of burnout [3].

Ethical considerations

Permissions were obtained from the head of the departments to conduct the survey. Instrumentation, aim, gains, and future aspects of the study were explained to the employees, and the ones who accepted to participate was included in the study.

Statistical analyses

Data were analyzed using SPSS version 13.0 (SPSS Inc., Chicago, IL). Descriptive statistics were calculated for the sociodemographic, occupational, and degree of burnout in three stages of the participants from various clinics. Analysis of variance, Student's *t*-test, one-way ANOVA

and post hoc Bonferroni were used to test differences among subspecialities and among different jobs where appropriate. All statistical tests were two-tailed, with a significance level of 0.05.

Results

Sociodemographic and occupational characteristics of the participants

The sample of the study was 90 employees with a median age of 34 (range 23–56). Thirty-five percent of the respondents were male, and 65% were female. The median years of oncology practice was 6 (range 1–27, mean 7.9), and one-third of the participants had been in oncology practice at least for 10 years. The sociodemographic and occupational characteristics of the participants were summarized in Tables 1 and 2, respectively.

Burnout incidence and factors influencing burnout scores

The mean levels of burnout in EE, DP, and PA stages were 23.80 ± 10.98, 5.21 ± 4.99, and 36.23 ± 8.05, respectively, for the entire group. Among 90 participants, 38 (42%) and 18 (20%) have high levels of EE and DP, respectively, and 32 (35.6%) of them have low levels of PA, indicating high levels of burnout. Sociodemographic and occupational characteristics and scores of burnout based on the variables and the responses of the individual questions were summarized in Tables 1 and 2, respectively.

Discussion

Impact of sociodemographic and occupational variables on burnout

Burnout syndrome commonly affects health care workers, especially employees in the field of oncology. Dealing with cancer patients and the emotional issues related to death and palliative care are some of the challenges faced daily by oncology employees which may predispose them to BS. In the literature, high scores of burnout in various oncology clinics and staff were demonstrated [7, 11, 15–23]. A recent meta-analysis by Trufelli et al. demonstrated that the overall prevalence of burnout scores in three stages was between 25–36%. They concluded that the prevalence of burnout syndrome is elevated among cancer professionals throughout the world but varies substantially among studies [24]. In our study, high level of burnout was found in 42% of the participants for EE, 35.6% for PA and 20% for DP stages. These findings are similar to the results published in other reports [7, 10, 15, 17, 20, 23, 25–29].

The association between several sociodemographic factors and high levels of burnout has been reported. Age was considered as a contributing factor for burnout levels. Several studies showed that younger physicians (e.g., younger than 50 years old) had experienced higher burnout [30, 31]. In our analysis, employees younger than 35 years old have exhibited higher levels of burnout. These are somewhat expected results indicating that the initial years of the career may be the most challenging years.

Studies evaluating the impact of gender on burnout syndrome revealed controversial results. While several studies did not report gender as a significant factor for burnout [30, 32], some demonstrated that females reported higher burnout scores than males [13, 31]. Conversely, a study evaluating burnout scores among physicians found higher burnout scores for the DP stage in males [33]. In our analysis, females tended to have slightly higher but statistically insignificant burnout scores for all stages.

It has been shown that married participants and participants with children are less likely to experience burnout syndrome [25, 30, 34]. Recently, Liakopoulou et al. [11] reported high burnout levels (for DP stage) for employees who do not have children. We also observed that employees who are not married (single, engaged or divorced) or who do not have children showed high levels of EE and low levels of PA indicating high levels of burnout in these two stages. Having children may be a protector for burnout.

Number of years of practicing medicine/oncology as an indicator of work experience has also been evaluated in several studies. A study evaluating BS in transplant surgeons demonstrated that fewer years of medical practice was one of the strongest predictors of high burnout for EE stage [35]. Similarly, other studies evaluating BS for employees of surgery and pediatric oncology clinics also demonstrated that less experience at work increased burnout [11, 36]. In the present study, we also found that employees who have been working less than 10 years in medicine/oncology clinic exhibited higher levels of burnout.

High work load has been shown to be a risk factor for dissatisfaction or as an inducer of psychological distress and fatigue [37, 38]. In a Swiss study, excess weekly working hours was shown to be a stressor for the BS [10]. Similarly, Whippen et al. [23] demonstrated that excess work load is a contributing factor for burnout. In our analysis, employees working more than 40 h per week showed high levels of burnout in all three stages, and employees who worked on night shifts showed high levels of burnout in two stages (EE and PA).

In the literature, burnout levels were defined separately for all oncology staff such as physicians, nurses and RT

Table 1 Sociodemographic and occupational characteristics and the burnout scores of the study sample

Variable	*n* (%)	Emotional exhaustion			Depersonalization			Personal accomplishment		
		Mean	SD	*P* value	Mean	SD	*P* value	Mean	SD	*P* value
Age median: 35 (23–56)										
≤34	45 (50)	26.22	11.06		5.40	5.58		33.76[a]	8.28	
>34	45 (50)	21.38	10.04	**0.03**	5.02	4.38	0.7	38.71	7.11	**0.003**
Sex										
Male	32 (35.5)	22.03	11.72		6.38	4.61		38.25	8.19	
Female	58 (64.5)	24.78	10.53	0.25	4.57	5.12	0.10	35.12	7.82	0.07
Marital status										
Married	58 (64.5)	21.93	10.34		4.83	4.72		37.40	7.03	
Other (single + divorced + engaged)	32 (35.5)	27.19[a]	11.45	**0.02**	5.91	5.45	0.3	34.13	9.38	0.06
N of family members median 3 (2–6)										
≤3	46 (51.1)	22.39	10.64		4.98	4.82		36.32	7.86	
>3	44 (48.9)	25.42	11.16	0.19	5.74	5.22	0.47	35.84	8.33	0.78
N of children										
None	42 (46.6)	26.60	11.09		5.83	5.58		34.67	8.82	
1–3	48 (53.3)	21.35	10.40	**0.02**	4.67	4.41	0.27	37.60	7.12	0.08
Clinic										
Radiation Onc.	39 (43.3)	21.59	11.33		4.15	4.49		37.51	7.38	
Medical Onc.	22 (24.4)	28.09[a]	10.21		8.86	5.54		34.45	7.48	
Onc. Div. of Gyn. Obs.	17 (18.8)	23.53	8.69		3.40	2.84		33.59[a]	9.75	
Pediatric Onc.	7 (7.7)	24.43	15.85		2.88	4.86		37.29	9.34	
Hematological Onc.	5 (5.5)	22.20	9.09	0.28	6.57	4.39	**0.001**	41.60	4.21	0.18
Job/academic degree										
Professor	8 (8.8)	19.63	11.73		5.25	4.02		40.50	9.41	
Associate professor	8 (8.8)	24.25	13.05		6.75	5.75		38.38	9.54	
Specialist	10 (11.1)	25.50	9.52		7.20	7.08		35.10	5.42	
Resident	11(12.2)	32.00[a]	10.90		5.55	4.80		33.82[a]	8.41	
Nurse	41 (45.6)	23.34	9.90		4.32	4.49		35.88	7.32	
RT technician	12 (13.3)	18.92	11.46	0.07	5.25	5.17	0.60	36.33	10.13	0.54
Duration of working in medicine (years)										
≤10	41 (45.6)	26.80	11.10		5.73	5.32		33.66[a]	8.35	
>10	49 (54.4)	21.29	10.33	**0.01**	4.78	4.70	0.36	38.39	7.18	**0.005**
Duration of working in oncology (years)										
≤10	60 (66.6)	25.37	11.03		5.73	5.38		35.07	8.36	
>10	30 (33.3)	20.67	10.37	**0.05**	4.17	3.97	0.1	38.57	6.94	**0.05**
Weekly working hours median 40 h (20–100)										
≤40	51 (56.6)	21.49	10.25		4.27	4.26		37.61	8.05	
>40	39 (43.3)	26.82	11.30	**0.02**	6.44	5.64	**0.04**	34.44	7.78	0.06
Night shifts										
No	36 (40)	19.53	10.31		4.67	4.56		38.39	8.20	
Yes	54 (60)	26.65	10.57	**0.02**	5.57	5.28	0.4	34.80	7.70	**0.03**

Statistically significant *P* values are given in bold

RT radiotherapy, *Onc* oncology, *Div* division, *Gyn* gynecology, *Obs* obstetrics

[a] High level of burnout

technicians. Studies evaluating burnout levels of oncology nurses demonstrated moderate or high levels of burnout in EE stage [20, 30], 15.

The only study evaluating burnout levels of RT technicians is from United States of America by Akroyd et al. [15] showing the high burnout levels in EE and DP stages.

Table 2 Burnout levels of participants according to the individual questions

Question	*n* (%)	Emotional exhaustion			Depersonalization			Personal accomplishment		
		Mean	SD	*P* value	Mean	SD	*P* value	Mean	SD	*P* value
"Did you choose working in oncology on your own will?"										
No	18 (20)	27.72[a]	11.14		4.61	4.30		34.61	7.81	
Yes	72 (80)	22.82	10.80	0.09	5.36	5.17	0.57	36.64	8.11	0.34
"Are you pleased with working in oncology field?"										
Not/partially	30 (33.3)	31.17[a]	10.28		6.93	5.77		33.40[a]	7.73	
Yes	60 (66.6)	20.12	9.41	**0.000**	4.35	4.36	**0.02**	37.65	7.89	**0.01**
"If you have an opportunity, would you like to change your speciality?"										
No	67 (74.4)	21.53	9.98		4.58	4.39		37.61	7.81	
Yes	23 (25.5)	29.35[a]	12.68	**0.005**	7.00	5.01	**0.04**	32.45[a]	8.42	**0.01**
"Does working in oncology affect your family and social life?"										
Do not have any effect	31 (34.4)	19.03	10.33		3.71	4.70		37.68	8.61	
Affects negatively	39 (43.3)	30.21[a]	9.59		6.97	5.30		33.82[a]	8.06	
Affects positively	16 (17.7)	16.88	7.97		3.56	3.11		39.00	5.85	
Affects in both ways	4 (4.4)	27.75[a]	5.12	**0.00**	5.00	5.47	**0.02**	38.50	7.23	0.08

[a] Indicating higher burnout levels; statistically significant *P* values are given in bold

Burnout among cancer physicians has been widely evaluated as well. In most of the studies, the academic degrees of the physicians were not considered separately, and oncology physicians either resident or professor were considered as a single group, and high levels of burnout were reported for the whole group [8, 16, 24]. There are limited number of studies evaluating the level of BS among various academic degree. Shanafelt et al. [39] conducted MBI survey for 115 internal medicine residents and demonstrated that 76% of the residents met the criteria for burnout. Castelo et al. [34] also demonstrated higher burnout among obstetric and gynecology residents. In our analysis, we were able to compare the levels of burnout between employees with various academic degrees and with various jobs. Among them, oncology residents had the highest level of burnout in EE and PA stages without statistical significance. This is somewhat an expected finding due to relatively young age, less experience and high work load of the residents.

Several previous studies demonstrated that oncology employees demonstrated higher burnout levels than other clinics' employees (such as employees of AIDS, palliative care, ophthalmology clinics) [27, 40, 41]. Since the vast majority of the investigators evaluated BS within isolated clinics, to the best of our knowledge, this is the first study comparing the degree of burnout between different oncology clinics. In our analysis, we found that EE and DP burnout levels of the employees in medical oncology clinic were higher than those of the employees in other clinics. This may be due to more increased exposure to patients with terminal cancer. DP stage is the only stage carrying statistically significant difference between oncology employees and employees from other specialities. DP scores were highest in medical oncology clinic employees and lowest in pediatric oncology clinic employees, which is indicating less burnout for pediatric oncologists. This may possibly be attributed to the higher cure rates of patients with pediatric cancer. PA scores were the lowest (indicating higher burnout) among gynecological oncologists without statistical significance. One can hypothesize that an oncologist with an obstetric background may feel less personally accomplished when practicing oncology compared to obstetrics.

Comparison of burnout scores based on the responses for the individual questions

We found that nearly two-thirds of the employees were satisfied working in oncology and in the clinics which they were working in. In two studies, first by Glasberg et al. [25] it was noteworthy that there was a positive and a significant correlation between BS and unwillingness to choose oncology as a career. Later, the same finding was reported by Lederer et al. [32] and they showed that the desire to choose the same profession again was significantly less in respondents with fully developed burnout.

Quattrin et al. [22] also demonstrated that nurses who wanted another work assignment have significantly high levels of EE. Unsurprisingly, we found that employees who are not/partially "pleased" with their current oncology

clinic and would like to change their speciality have higher burnout scores in three stages of burnout. Nonetheless, participants who thought that working in oncology negatively affected their social and family life experienced higher burnout in EE and DP stages.

In the current study, we attempted to describe the current status of burnout in a reference university hospital in the Aegean region of Turkey. Nonetheless, all participants of the survey were working in the same university with homogenous confounding factors such as occupational environment and salary. As a result of the survey, we concluded that nearly half of the employees experienced high levels of burnout. However, our study has several limitations. First, we were not able to evaluate the psychological status (e.g., depression) and job satisfaction of the participants. Second, we analyzed the degree of burnout at a single time point. Further investigations may include the evaluation of BS before and after implementing institutional strategies (such as physical activity, hobbies and art therapy) to deal with such stress [12]. However, that is beyond the scope of the current study.

Conclusion

In our study, we demonstrated that BS affects approximately half of the oncology employees. Early identification of BS has two major aspects: first to prevent impairment of quality of life of the health care professional and secondly to secure quality of cancer care which strongly depends on health care professional and patient relationship. Prevention and therapy of burnout should be considered on personal (balancing personal and professional life, physical activity, having a hobby, psychotherapy, advices on health way of life) and institutional (support meetings and talking groups) levels [41, 42].

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