

An Analysis of Burnout and Associated Variables Among Pathologists Working in Türkiye

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Abstract

Objective

Burnout is a condition characterized by emotional exhaustion, depersonalization, and feelings of inefficacy, widely observed in occupations involving sustained workload, high professional responsibility, and chronic exposure to occupational stress. It represents a major occupational health concern, arising from chronic work-related stress and affecting individuals' physical, mental, and social well-being. This study aims to investigate the factors contributing to burnout among pathologists working in Türkiye.

Material and Method

In this cross-sectional study, data were collected via an online survey distributed to members of the Turkish Pathology Society. Informed consent was obtained from participants, and burnout was measured using the work-related burnout subscale of the Copenhagen Burnout Inventory.

Results

A total of 180 pathologists were included in the study. 80.6% of the participants were women, and the average age was 41.83 ± 10.62 years. The findings revealed that 71% of the participants experienced burnout. A significant relationship was identified between years of professional experience and burnout levels ($F = 3.813$, $p = 0.024$). Additionally, negative correlations were observed between burnout and age ($r = -0.211$, $p < 0.01$) as well as between burnout and choosing the profession willingly ($r = -0.182$, $p < 0.05$).

Conclusion

This study highlights a significant association between professional experience, personal factors such as age, and interest in the profession, with burnout among pathologists in Türkiye. Burnout among pathologists may impair diagnostic efficiency, interdisciplinary collaboration, and broader healthcare processes. Future research should further investigate both individual and organizational factors contributing to burnout.

Keywords: Burnout, Pathologist, Pathology

Introduction

Burnout is characterized by a persistent state of occupational stress, comprising three key dimensions: (i) exhaustion, (ii) depersonalization or cynicism, and

(iii) feelings of inefficacy (1). The most widely accepted definition of burnout in contemporary literature is the one provided by Maslach, who describes the condition as a syndrome characterized by physical and emotional exhaustion, long-term fatigue, and

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feelings of hopelessness. These factors are reflected in negative attitudes to work, life, and other individuals, as well as being observable in individuals exposed to intense emotional demands at work and engaged in continuous one-to-one interactions (2). Although Maslach's original conceptualization emphasized human service professions involving intensive interpersonal interaction, subsequent research has demonstrated that burnout is not limited to direct client-contact occupations. It also emerges in roles characterized by sustained cognitive workload, high responsibility, complex decision-making, and organizational stressors. Thus, burnout is now understood as a multidimensional occupational syndrome relevant to a wide range of professional settings, including diagnostic medical fields. A review of existing literature indicates a noticeable increase in studies on burnout among health-care workers in recent years. This phenomenon has been recognized as an occupational phenomenon in the International Classification of Diseases, 11th Edition (3, 4).

When examining the factors contributing to burnout, it has been identified that apart from individual factors such as personality traits, age, gender, and years of professional experience, organizational factors, including workload and working conditions, also play a crucial role (5). Burnout can lead to a range of physical and psychological health issues, such as cardiovascular problems, metabolic disorders, compromised immune function, anxiety, and depression. Furthermore, burnout adversely affects individuals' job commitment and overall work performance, which may lead to inefficiencies in healthcare processes and contribute to broader organizational and economic burdens. Burnout is also acknowledged to result in both direct and indirect economic costs, including increased illness-related absences and resignations owing to associated health challenges (1, 6).

Despite the growing attention to burnout among various medical specialties, studies focusing specifically on pathologists remain scarce. A review of the literature reveals a paucity of research examining burnout levels within this group, and to date, no studies have investigated this issue in Türkiye. Although pathologists are not directly involved in patient care processes, they occupy a central position in modern diagnostic medicine. Cytological and histopathological evaluations play a decisive role in the diagnosis, prognosis, and treatment planning of many critical diseases, particularly cancer. Consequently, the work environment of pathologists requires sustained attention, significant responsibility, a high workload, and strict time constraints. Moreover, professional

isolation within laboratory settings, dependence on other clinical disciplines, and increasing case volumes further contribute to occupational stress. Despite these considerable demands, the literature on burnout among pathologists remains remarkably limited. Investigating burnout in this professional group is therefore essential to addressing an important gap in the field of diagnostic medicine.

In light of these considerations, the present study aims to investigate burnout levels among pathologists working in Türkiye and to identify individual and professional factors associated with burnout in this population.

Material and Method

Participants and Procedure

The present study employed a cross-sectional research design. The participant survey was created using an online platform. Once the study design had been finalized, the online survey link, along with information about the purpose of the study and the researchers, was distributed to pathologists via email. The participants were deemed to have given their voluntary consent to take part in the study when they indicated their agreement by selecting the option "I agree to participate in the study" presented in the information text. Upon completion of the survey, participants were asked to provide their email addresses, thus ensuring the avoidance of duplicate data. The online survey form was kept open from April 2024 to May 2024 and deactivated when the requisite number of participants had been reached. Ethical approval was obtained from the Toros University Scientific Research and Publication Ethics Committee (Approval no: 27.09.2023/101), and the study was conducted in accordance with the Helsinki Declaration.

Measures

Copenhagen Burnout Inventory. The scale was developed by Kristensen and addresses burnout in three dimensions: "personal burnout," "work-related burnout," and "client-related burnout." The term "personal burnout" refers to the level of psychological and physiological exhaustion. "Work-related burnout" is defined as long-term physical or psychological fatigue and exhaustion perceived by the individual in relation to their work. "Client-related burnout" is similarly defined as long-term physical or psychological fatigue and exhaustion perceived by the individual in relation to their clients. The statements on the five-point Likert scale are evaluated based on their frequency and intensity. A score of 50 or above on the scale is indicative of an individual's experience of burnout (7).

The Turkish validity and reliability studies of the scale were conducted by Bakoğlu Deliorman et al., with the total Cronbach's alpha value determined to be 0.91. Subsequently, the Cronbach's alpha values for the sub-dimensions of the scale ranged from 0.67 to 0.90 (8). In this study, the work-related burnout subscale, consisting of seven items from the scale, was utilized. The Cronbach's alpha value obtained from this study was determined to be 0.88.

Statistical Analysis

The statistical analyses were conducted using IBM Statistical Package of Social Sciences (SPSS) version 28.0. The normality of the data was assessed by analyzing skewness and kurtosis values, as well as through visual examination of box plots and histograms. The homogeneity of variances was analyzed with Levene's test. Descriptive statistics were used for continuous data to provide the mean and standard deviation, while frequency and percentages were used for categorical variables. Pearson's chi-squared test and one-way analysis of variance (ANOVA) test were used to compare categorical data between the groups. For continuous variables, the Student's t-test was used after verifying that the data met the parametric assumptions. Pearson's correlation analysis examined the relationship between study variables. A statistical significance level of $p < 0.05$ has been considered for all tests.

Results

The participants in this study were pathologists working in Türkiye and accessible via the Turkish Pathology Association account through email. Of the participants, 145 (80.6%) were female, and 35 (19.9%) were male, with a mean age of 41.83 ± 10.62 . A summary of the sociodemographic characteristics of the participants is provided in Table 1.

Upon examination of the data obtained from the participants, no significant difference was observed between levels of burnout and variables such as gender ($t=0.572$, $p=0.568$), marital status ($t=-0.358$, $p=0.721$), number of children ($F=1.075$, $p=0.344$), professional title ($F=1.363$, $p=0.249$), workplace ($F=1.559$, $p=0.201$), annual case load ($t=0.656$, $p=0.512$), laboratory techniques ($F=2.166$, $p=0.118$), presence of physical disease ($t=0.17$, $p=0.987$), history of psychiatric disorder before starting the profession ($t=-1.344$, $p=0.181$), and history of psychiatric disorder after starting the profession ($t=-0.153$, $p=0.879$). However, a statistically significant difference was found between the year of professional experience and levels of burnout ($F=3.813$, $p=0.024$). A comparison

regarding the year of professional experience and burnout levels is provided in Table 2.

The correlation between burnout levels of the participants with age, and choosing one's profession by desire is presented in Table 3.

Discussion

This study examined burnout levels among pathologists in Türkiye and the associated factors. The findings revealed a relationship between professional experience and burnout levels. Additionally, correlations were identified between age, voluntary choice of profession, and burnout. To the best of our knowledge, this is the first study to assess burnout levels among pathologists in Türkiye, representing a significant strength of the research.

In the medical field, burnout is primarily caused by factors such as long working hours, limited time for diagnosis and treatment planning, case complexity, and workplace relationships (9, 10). In Türkiye, research on burnout has predominantly focused on specialties involving direct patient interaction, such as primary care and emergency medicine (11–13). However, studies on burnout among pathologists remain scarce both in Türkiye and globally. One study reported a burnout prevalence of 8.6% among pathologists, while another indicated that 42% of pathologists had experienced burnout and depression during their careers (14–15). Contributing factors included dependency on other specialists and working in isolated environments (15). In our study, the burnout rate was found to be 71%, which is notably higher than previous findings. This elevated rate is likely attributable to the demanding working conditions and excessive workload prevalent in Türkiye. However, it is important to note that our study utilized only the work-related burnout dimension of the Copenhagen Burnout Inventory, which should be considered when interpreting the results.

The literature presents contradictory findings regarding the relationship between age and burnout. A meta-analysis indicated that younger age significantly contributed to emotional exhaustion and depersonalization, key indicators of burnout (16). Conversely, another meta-analysis found that older age was associated with a higher prevalence of burnout among medical and surgical residents (17). Wright et al. identified that age, gender, marital status, and education level were related to burnout among primary healthcare professionals. Some studies reported a negative relationship between age and emotional exhaustion, while others observed

Table 1 Sociodemographic data of the participants (n=180)

Variables	
Age (years), mean (SD)	41.83 (10.62)
Gender n (%)	
Female	145 (80.6)
Male	35 (19.4)
Marital status, n (%)	
Married	123 (68.3)
Other	57 (31.7)
Number of children, n (%)	
0	65 (36.1)
1	45 (25)
2 or more	70 (38.9)
Professional title, n (%)	
Professor	25 (13.9)
Associate Professor	20 (11.1)
Assistant Professor	16 (8.9)
Specialist	86 (47.8)
Research Assistant	33 (18.3)
Duration of professional experience (year), n (%)	
0-5	63 (35)
6-15	54 (30)
15 or more	63 (35)
Workplace, n (%)	
State Hospital	29 (16.1)
City Hospital/Research and Training Hospital	85 (47.2)
University Hospital	52 (28.9)
Special Clinic/Laboratory	14 (7.8)
Annual case load (biopsy + cytology specimens), n (%)	
<5000	78 (43.3)
>5000	102 (56.7)
Laboratory techniques, n (%)	
Hematoxylin-eosin + Histochemical	15 (8.3)
Hematoxylin-eosin + Histochemical + Immunohistochemical	87 (48.3)
Hematoxylin-eosin + Histochemical + Immunohistochemical +Molecular	78 (43.3)
Physical diseases, n (%)	
No	136 (75.6)
Yes	44 (24.4)
Pret-professional psychiatric history, n (%)	
No	167 (92.8)
Yes	13 (7.2)
Post-professional psychiatric history, n (%)	
No	115 (63.9)
Yes	65 (36.1)
Choosing one's profession by desire, n (%)	
1	2 (1.1)
2	3 (1.7)
3	11 (6.1)
4	31 (17.2)
5	38 (21.1)
6	42 (23.3)
7	53 (29.4)

%= frequency, n=Number, SD=Standart deviation

Table 2 Comparison of the year of professional experience and burnout levels (n=180)

Variable	Mean ± SD	F	p
Duration of professional experience (year)			
0-5	24.17±4.88	3.813	0.024*
6-15	24.39±5.55		
>15	22.03±5.22		

*p<0.05, SD=Standart deviation

Table 3 Pearson's correlations between study variables and, mean and standard deviation of CBI scores

	CBI
Age	-0.211**
Choosing one's profession by desire	-0.182*
Mean ± SD	23.49 ± 5.29

*p<0.05, **p<0.01, CBI: Copenhagen Burnout Inventory, SD=Standart Deviation

a positive association. Overall, younger individuals tend to experience higher burnout levels (1). A large-scale study found that over 70% of pathologists over the age of 45 experienced burnout, although this result was not statistically significant when compared to other age groups (18). In our study, a negative correlation between age and burnout was observed, consistent with some prior research. This could be due to the challenges faced by younger pathologists, particularly during the early stages of their careers, including residency and fellowship training, exposure to intense information flow, and working in high-volume environments such as state hospitals, where evaluation times are short, and staffing is insufficient. Further studies exploring age-specific stressors are required to better understand this relationship.

A study on nurses identified a nonlinear relationship between years of experience and emotional exhaustion. Emotional exhaustion was most prevalent in nurses within the first eight years of their careers, with burnout levels decreasing as experience increased (19). In another study, including 844 nurses and midwives, higher burnout levels were reported by those with 1–3 years and more than 5 years of experience. This nonlinear relationship was explained by the early dedication to work, potentially at the cost of mental health, followed by a better balance

between professional life and personal well-being as experience grew. After five years, exposure to job-related stressors such as death, illness, and suffering led to increased burnout (20). In a large-scale study of 1,256 pathologists, burnout was more pronounced at the beginning of the postgraduate period, with burnout exhibiting a U-shaped relationship over time. This phenomenon was attributed to cognitive dissonance during the adjustment to a new work environment, with burnout decreasing as individuals adapted. However, during the practice phase, burnout levels increased due to escalating ethical and legal obligations associated with cases (21). A study of 408 U.S. pathologists found that the highest burnout levels occurred in those with 11–15 years of experience (85.7%), while those with 0–5 years of experience had the lowest (62.3%). No statistically significant differences were found between the groups (18). Similar to previous findings, our research revealed a nonlinear relationship between burnout and professional experience. Burnout was more prevalent in the first 15 years of a career but decreased significantly thereafter. The higher burnout levels observed in pathologists with 6–15 years of experience may be related to working in high-pressure environments, such as state hospitals, during the early years of their careers, where limited time for case evaluation and inadequate staffing contribute to burnout. Conversely, those with more experience may

resolve complex cases more efficiently, resulting in lower burnout levels.

The medical specialization process in Türkiye, which includes six years of medical education followed by a specialization exam, may affect physicians' career satisfaction and mental well-being. Some physicians may feel pressured to enter specialties they did not initially prefer, based on the significance of their exam scores, leading to dissatisfaction and, subsequently, burnout. A study of child psychiatrists found a negative correlation between the willingness to pursue psychiatry as a specialty and burnout. Those who felt compelled to pursue psychiatry reported higher burnout levels compared to those who chose it willingly (6). Previous studies have shown that most pathologists are satisfied with their specialties (22). Our study explored this by asking, "Did you choose your profession willingly?" This underexplored question revealed that pathologists who voluntarily chose their profession experienced less burnout. However, further research is necessary to investigate this relationship in greater depth.

This study has several limitations. First, due to its cross-sectional design, it is not possible to establish a causal relationship between professional experience and burnout without considering other factors. Longitudinal studies that incorporate additional variables are needed for a more comprehensive understanding of this issue. Second, the use of self-reported scales introduces the potential for bias, as the data were collected through self-assessment without evaluation by a mental health professional. Therefore, caution is needed when interpreting the findings. Lastly, although the research invitation was directed to individuals through an email group comprising many pathologists nationwide, the inability to reach some individuals limits the generalizability of the findings.

Conclusion

The present study demonstrates a notably high prevalence of burnout among pathologists in Türkiye and identifies significant associations with age, professional experience, and voluntary choice of specialty. Burnout appears to peak during the early and mid-career periods, likely reflecting intensive workload and structural challenges within diagnostic practice. These findings underscore the necessity for institutional measures aimed at optimizing working conditions and strengthening professional support mechanisms. Future longitudinal research is warranted to elucidate causal pathways and inform targeted interventions.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Ethical Approval

Ethical approval for this study was obtained from the Toros University Scientific Research and Publication Ethics Committee (Approval No: 27.09.2023/101). Participants were fully informed about the purpose of the research and the scientific use of their data. The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki.

Consent to Participate and Publish

Online written informed consent to participate and publish was obtained from all individual participants included in the study.

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Availability of Data and Materials

Data available on request from the authors.

Artificial Intelligence Statement

The authors declare that they have not used any type of generative artificial intelligence for the writing of this manuscript, nor for the creation of images, graphics, tables, or their corresponding captions.

Authors Contributions

C.Ü.M: Conceptualization; Formal analysis; Methodology; Project administration; Resources; Validation; Visualization; Writing-original draft.

İ.E.S: Conceptualization; Data curation; Investigation; Methodology; Project administration; Supervision; Writing-review & editing.

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