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Stages of Burnout Syndrome Among Professionals in Various Fields

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Abstract Burnout Syndrome is a psychological condition affecting healthcare professionals, primarily due to high workloads, prolonged patient interactions, and emotional strain. This study aimed to assess burnout levels among physicians in different medical fields and identify factors contributing to its severity. **Materials and methods.** An observational study was conducted among 208 physicians at medical institutions in Uzbekistan. Participants were divided into two groups: general practitioners (n=173,83.1%) and specialists (n=35,16.9%). Burnout levels were evaluated using the Maslach Burnout Inventory, Boyko's "Emotional Burnout" questionnaire, and a specialized rating scale. Burnout prevalence was analyzed based on years of experience, workload, and professional responsibilities. **Results.** The findings revealed that general practitioners had a significantly higher prevalence of burnout (48.5%) compared to specialists (28.8%). Moderate burnout was more frequent among specialists (32.1%) than among general practitioners (24.6%). Burnout severity increased with years of experience, workload, and responsibility, leading to emotional exhaustion, professional detachment, and reduced motivation. **Conclusions**. The study highlights the urgent need for psychological support, improved working conditions, and stress management strategies to reduce burnout among physicians. Targeted interventions are necessary to preserve mental well-being and ensure high-quality patient care.

Keywords Burnout syndrome, Emotional exhaustion, Professional competence, Maslach Burnout Inventory, Stress resilience

1. Introduction

Burnout syndrome (BS) remains one of the most significant occupational health challenges of the modern era, particularly among healthcare professionals. The World Health Organization [26] defines burnout as an occupational phenomenon resulting from chronic workplace stress that has not been successfully managed. It manifests through three primary dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment [14]. These dimensions collectively reflect the progressive depletion of emotional and physical energy under continuous professional strain.

Over the past five years, research on burnout has intensified due to the COVID-19 pandemic, which has drastically altered the landscape of healthcare delivery worldwide. According to recent meta-analyses [5,7], burnout prevalence among healthcare professionals post-pandemic ranges between 45% and 68%, with significant variations across specialties, countries, and healthcare systems. Factors contributing to this increase include prolonged exposure to patient suffering, increased workload, and limited institutional support. Studies in Asia and Eastern Europe [10,19] also indicate that physicians in resource-limited settings experience heightened levels of emotional exhaustion due to workforce shortages and administrative burdens.

In Uzbekistan the problem of physician burnout has been under-investigated despite its evident clinical and social relevance. Local physicians often face excessive workload, low remuneration, and minimal access to psychological assistance or rest facilities, all of which contribute to burnout. Previous regional studies [1,13] have highlighted the urgent need for developing preventive and rehabilitative interventions that address both organizational and personal resilience factors.

The theoretical understanding of burnout has evolved through multiple frameworks. The Job Demand-Resources (JD-R) model [3] conceptualizes burnout as the outcome of chronic imbalance between professional demands and available resources. When job demands – such as workload, cognitive strain, and emotional labor-exceed resources like autonomy, feedback, and social support, individuals develop exhaustion and disengagement. Similarly, the Conservation of Resources (COR) theory [9] explains that stress occurs when individuals perceive a threat to their personal resources (e.g., time, emotional stability, or energy) and lack mechanisms

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for their recovery. Modern interpretations integrate these frameworks to account for cultural, technological, and systemic influences on burnout, particularly in healthcare.

Recent empirical research [8,16,22] underscores that burnout is not merely an individual problem but a systemic outcome of healthcare design. High administrative workload, digital documentation overload, and poor work–life integration are consistent predictors of physician exhaustion. The 2025 Lancet Digital Health report [12] also demonstrated that the introduction of artificial intelligence and digital assistance systems reduces burnout risk by streamlining administrative duties and improving efficiency. However, such technological support remains scarce in low- and middle-income countries, where healthcare systems rely heavily on human labor and traditional management models.

Post-pandemic analyses [7,21] reveal a shift from acute stress during the crisis phase to chronic fatigue, moral distress, and depersonalization in the recovery period. Physicians working in primary care and emergency medicine continue to report higher burnout rates compared to specialists in non-acute disciplines. General practitioners face unique stressors such as patient overload, emotional labor, and inadequate recovery time [19]. These findings are consistent with earlier global studies [17,25], which emphasize that sustained emotional exhaustion leads to decreased empathy, professional detachment, and reduced patient safety.

Gender, age, and professional experience also influence burnout severity. Female physicians, especially those balancing professional and family roles, show higher susceptibility to emotional exhaustion [2,18]. Younger clinicians report frustration due to limited career autonomy, while senior doctors face chronic fatigue related to long-term stress accumulation [10,23]. Organizational factors such as leadership quality, peer support, and institutional culture significantly mediate burnout outcomes [6]. Addressing these determinants requires a systemic approach integrating psychological support, institutional reforms, and policy-level strategies for physician well-being.

Given this background, the present study aims to assess the prevalence and severity of burnout among physicians across various medical disciplines in Uzbekistan, to identify its key determinants, and to provide recommendations for prevention and rehabilitation. The novelty of this work lies in its regional focus, examining burnout within a transitional healthcare system adapting to global post-pandemic challenges. By situating local findings within the broader international discourse, this research seeks to contribute to the growing body of literature advocating evidence-based interventions, technological innovation, and institutional reform to mitigate burnout and enhance professional resilience.

2. Materials and Methods

Study population. In total, 208 physicians participated in the study. The study was conducted in a clinical trial format involving two groups. The first group (study group) comprised 83.1% (n=173) of general practitioners, while the second group (control group) included 16.9% (n=35) of specialists from narrow medical fields – neurologists, infectious disease specialists, obstetrician-gynaecologists, psychiatrists, as well as addiction specialists . Both groups of respondents were assessed using the same methodology. Physicians aged between 27 and 59 years participated in the study. The average age of respondents in the first group was 35.9±0.85 years, while in the second group, it was 31.5±0.24 years. Physicians with work experience ranging from one month to 39 years were evaluated. In terms of work experience, the average professional experience in the first group was 18.04±24.12 years, whereas in the second group it accounted for 20.09±27.02 years.

To achieve the research objectives, a modified version of the Maslach Burnout Inventory (MBI) for medical professionals by K. Maslach and N.V. Vodopyanova [14,24] was used, along with V.V. Boyko's "Emotional Burnout" questionnaire [4] and a specially developed rating scale. All study participants were diagnosed according to the ICD-10 classification under the F-40 category for stress-related and somatoform neurotic disorders.

3. Results

The study included 232 medical professionals, of whom 163 (70.3%) were women and 69 (29.7%) were men. The age of participants ranged from 31 to 58 years, with a median age of 50 years for women and 53 years for men, correspondingly. Male participants appeared to be significantly older than females (H=20.79, p<0.001).

Table 1. Sociodemographic and professional characteristics of the participants

Parameter	Women (n=163)	Men (n=69)	Total (n=232)	
Age (years)	50.0 [38.00-58.00]	53.0 [42.50-58.00]	40.0 [31.00-53.00]	H(1)=20.79 p<0.001
Total work experience (years)	24.34±13.21	27.04±11.96	17.96±13.90	F(1.230)=25.36 p<0.001
Work experience in medicine (years)	25.0 [12.00-34.00]	27.0 [16.00-35.00]	14.0 [5.00-28.00]	H(1)=21.54 p<0.001

Parameter	Women (n=163)	Men (n=69)	Total (n=232)	
Specialization (n, %)				
Administrator (Head Physician)	2 (0.9%)	1 (0.6%)	1 (1.4%)	$\chi^2(30)=56.70$ p=0.002
Obstetrician-Gynecologist	1 (0.4%)	1 (0.6%)	0 (0.0%)	
Anesthesiologist	4 (1.7%)	2 (1.2%)	2 (2.9%)	
General Practitioner	93 (40.1%)	77 (47.2%)	16 (23.2%)	
Pediatric General Practitioner	4 (1.7%)	4 (2.5%)	0 (0.0%)	
Emergency Physician	1 (0.4%)	1 (0.6%)	0 (0.0%)	
Functional Diagnostics Doctor	2 (0.9%)	1 (0.6%)	1 (1.4%)	
Hematologist	1 (0.4%)	1 (0.6%)	0 (0.0%)	
Gynaecologist	2 (0.9%)	2 (1.2%)	0 (0.0%)	
Dermatologist	3 (1.3%)	1 (0.6%)	2 (2.9%)	
Child Psychiatrist	1 (0.4%)	1 (0.6%)	0 (0.0%)	
Pediatric Dentist	2 (0.9%)	2 (1.2%)	0 (0.0%)	
Infectious Disease Specialist	1 (0.4%)	0 (0.0%)	1 (1.4%)	
Cardiologist	7 (3.0%)	4 (2.5%)	3 (4.3%)	
ENT Specialist	2 (0.9%)	2 (1.2%)	0 (0.0%)	
Addiction Specialist	6 (2.6%)	1 (0.6%)	5 (7.2%)	
Neurologist	8 (3.4%)	4 (2.5%)	4 (5.8%)	
Ophthalmologist	3 (1.3%)	2 (1.2%)	1 (1.4%)	
Pediatrician	27 (11.6%)	22 (13.5%)	5 (7.2%)	
Psychiatrist	35 (15.1%)	20 (12.3%)	15 (21.7%)	
Psychotherapist	1 (0.4%)	0 (0.0%)	1 (1.4%)	
Pulmonologist	1 (0.4%)	0 (0.0%)	1 (1.4%)	
Radiologist	1 (0.4%)	1 (0.6%)	0 (0.0%)	
Nurse (Mid-level staff)	1 (0.4%)	1 (0.6%)	0 (0.0%)	
Internal Medicine Specialist	14 (6.0%)	10 (6.1%)	4 (5.8%)	
Thoracic Surgeon	1 (0.4%)	0 (0.0%)	1 (1.4%)	
Traumatologist	2 (0.9%)	0 (0.0%)	2 (2.9%)	
Transfusion Medicine Specialist	1 (0.4%)	1 (0.6%)	0 (0.0%)	
Urologist	1 (0.4%)	0 (0.0%)	1 (1.4%)	
Tuberculosis Specialist	1 (0.4%)	1 (0.6%)	0 (0.0%)	
Surgeon	3 (1.3%)	0 (0.0%)	3 (4.3%)	
Frequency of night shifts per month	4.00 [0.00-4.00]	2.00 [0.00-4.00]	4.00 [1.00-7.00]	H(1)=19.15 p<0.001
Participant's attendance frequency at morning meetings (n, %)				
Every day	46 (19.8%)	30 (18.4%)	16 (23.2%)	$\chi^2(4)=1.70$ p=0.791
Once a week	61 (26.3%)	42 (25.8%)	19 (27.5%)	
Several times a week	44 (19.0%)	30 (18.4%)	14 (20.3%)	
Once a month	16 (6.9%)	12 (7.4%)	4 (5.8%)	
Rarely or never	65 (28.0%)	49 (30.1%)	16 (23.2%)	
Sick leave duration (n, %)				
None	101 (43.5%)	60 (36.8%)	41 (59.4%)	$\chi^2(4)=14.50$ p=0.006
Several days	91 (39.2%)	67 (41.1%)	24 (34.8%)	
Several years	1 (0.4%)	1 (0.6%)	0 (0.0%)	
Several months	9 (3.9%)	7 (4.3%)	2 (2.9%)	
Several weeks	30 (12.9%)	28 (17.2%)	2 (2.9%)	

Parameter	Women (n=163)	Men (n=69)	Total (n=232)	
Marital status (n, %)				
Widowed	7 (3.0%)	7 (4.3%)	0 (0.0%)	$\chi^2(4)=19.51$ p<0.001
Common-law marriage	3 (1.3%)	3 (1.8%)	0 (0.0%)	
Single	7 (3.0%)	1 (0.6%)	6 (8.7%)	
Married	204 (87.9%)	141 (86.5%)	63 (91.3%)	
Divorced	11 (4.7%)	11 (6.7%)	0 (0.0%)	
Job Position (n, %)				
Physician	166 (71.6%)	125 (76.7%)	41 (59.4%)	$\chi^2(6)=16.26$ p=0.012
Chief Physician	9 (3.9%)	7 (4.3%)	2 (2.9%)	
Other	1 (0.4%)	0 (0.0%)	1 (1.4%)	
Head of Department	34 (14.7%)	21 (12.9%)	13 (18.8%)	
Deputy Chief Physician	9 (3.9%)	2 (1.2%)	7 (10.1%)	
Academic Staff	13 (5.6%)	8 (4.9%)	5 (7.2%)	
Relationships with colleagues (n, %)				
Tense	6 (2.6%)	5 (3.1%)	1 (1.4%)	$\chi^2(2)=1.02$ p=0.600
Excellent	57 (24.6%)	42 (25.8%)	15 (21.7%)	
Good	169 (72.8%)	116 (71.2%)	53 (76.8%)	
Relationships with patients (n, %)				
Other	3 (1.3%)	3 (1.8%)	0 (0.0%)	$\chi^2(3)=1.80$ p=0.615
Tense	4 (1.7%)	3 (1.8%)	1 (1.4%)	
Excellent	53 (22.8%)	35 (21.5%)	18 (26.1%)	
Good	172 (74.1%)	122 (74.8%)	50 (72.5%)	
Academic degree (n, %)				
Yes	216 (93.1%)	154 (94.5%)	62 (89.9%)	$\chi^2(1)=0.97$ p=0.324
No	16 (6.9%)	9 (5.5%)	7 (10.1%)	

The total work experience was also significantly greater among men (27.0 ±12.0 years vs. 24.3 ±13.2 years; $F(1,230)=25.36$, $p< 0.001$). Similarly, medical work experience was higher in men ($H=21.54$, $p<0.001$), indicating that the male group was statistically older and had a longer professional trajectory.

Among medical specializations, women most commonly worked as general practitioners and internists (40.1%). Men, in contrast, were more frequently employed as psychiatrists (21.7%), neurologists (5.8%), and addiction specialists (7.2%). The distribution of specialties differed significantly by gender ($\chi^2(30)=56.70$, $p=0.002$): women were more often represented in primary care roles, whereas men predominated in psychiatry and neurology.

The frequency of night shifts differed significantly between genders ($H=19.15$, $p<0.001$): women worked an average of four night shifts per month, whereas men averaged two, which may reflect family responsibilities and the distribution of domestic duties. In contrast, attendance at morning briefings did not differ significantly ($\chi^2(4)=1.70$, $p=0.791$); most physicians attended these meetings once or several times per week, typically as part of routine hospital practice.

Gender differences were also observed in sick-leave patterns ($\chi^2(4)=14.50$, $p=0.006$). Women more frequently took short-term sick leave (with 43.5% reporting no leave vs. 36.8% of men), whereas men were somewhat more likely to have longer absences (one week or more), potentially indicating chronic health conditions. Marital status likewise showed significant gender variation ($\chi^2(4)=19.51$, $p<0.001$): men were more often widowed (4.3%) or divorced (6.7%), while – women more frequently reported being single (8.7%). Overall, however, the majority of participants were married (approximately 88%).

Men were significantly more likely to hold leadership positions – such as deputy chief physician or head of department ($\chi^2(6)=16.26$, $p=0.012$) – whereas women predominated among rank-and-file physicians (71.6%). Relationships with colleagues and patients were generally positive, with more than 70% of respondents rating them as good or excellent, and without any significant gender differences ($p>0.6$). Most participants (93.1%) held an academic degree, with no gender differences observed ($\chi^2(1)=0.97$, $p=0.324$).

Taken together, these findings indicate clear gender-professional distinctions within the sample: men were older, more experienced, and more likely to occupy administrative positions, whereas women were more represented in primary care and had a higher frequency of night shifts. These factors may contribute to variations in emotional burnout and should be accounted for in subsequent statistical analyses, such as regression modeling or subgroup comparisons using MBI scores.

Table 2. Results of Psychological Assessment (Maslach Burnout Inventory and MFI-20) by Gender

Scale / Subscale	Women (n=163)	Men (n=69)	Total (n=232)	Statistical indicator
Maslach Burnout Inventory (MBI)				
Emotional Exhaustion Scale	12.38 ±4.40	12.44 ±4.61	12.25 ±3.91	F(1.230)=0.09 p=0.758
Depersonalization Scale	11.10 ±4.05	11.05 ±4.14	11.22 ±3.85	F(1.230)=0.08 p=0.773
Reduced Personal Accomplishment Scale	8.00 [6.00-12.00]	8.00 [6.00-11.50]	8.00 [7.00-13.00]	H(1)=0.64 p=0.424
Total MBI Score	46.12 ±15.59	45.98 ±15.81	46.43 ±15.17	F(1.230)=0.04 p=0.840
Multidimensional Fatigue Inventory (MFI-20)				
General Fatigue Scale	11.34 ±3.64	11.50 ±3.75	10.97 ±3.36	F(1.230)=1.04 p=0.310
Physical Fatigue Scale	11.00 [9.00-12.25]	11.00 [8.50-13.00]	11.00 [9.00-12.00]	H(1)=0.04 p=0.851
Reduced Activity Scale	11.00 [9.00-12.00]	11.00 [8.50-12.00]	12.00 [9.00-13.00]	H(1)=0.76 p=0.383
Reduced Motivation Scale	9.00 [7.00-11.00]	9.00 [7.00-11.00]	9.00 [7.00-11.00]	H(1)=0.00 p=0.988
Mental Fatigue Scale	10.03 ±2.89	10.10 ±2.99	9.87 ±2.64	F(1.230)=0.30 p=0.582
Total MFI-20 Score	51.46 ±12.08	51.63 ±12.34	51.06 ±11.51	F(1.230)=0.11 p=0.742

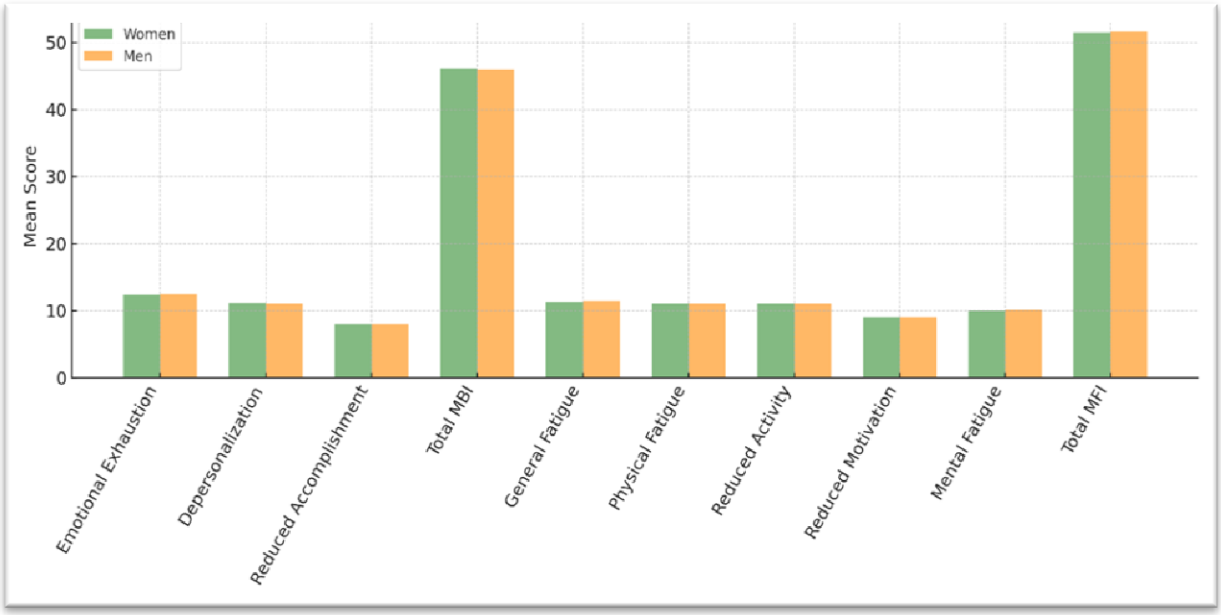

Figure 1. Comparison of burnout Fatigue indicators by gender (MBI and MFI-20)

Analysis of burnout indicators assessed with the Maslach Burnout Inventory (MBI) showed no statistically significant gender differences (all p>0.4). Emotional exhaustion scores were nearly identical among women (12.38 ±4.40) and men (12.44 ±4.61) (F(1,230)=0.09, p=0.758), indicating a moderate level of emotional strain in both groups. Depersonalization scores were likewise similar, with women averaging 11.10 ± 4.05 and men 11.05 ±4.14 (F(1,230)=0.08, p=0.773), suggesting comparable degrees of emotional detachment from patients.

According to the results of the Multidimensional Fatigue Inventory (MFI-20), no statistically significant gender differences were found either (all p>0.3). The level of general fatigue was 11.34 ± 3.64 among women and 11.50 ± 3.75 among men (F(1,230)=1.04; p=0.310), reflecting a moderate degree of tiredness typical of long-term professional workload. Indicators of physical fatigue, mental fatigue, reduced activity, and reduced motivation also did not differ statistically (p>0.05).

Table 3. Levels of Professional Burnout and Fatigue by Specialty

Specialty	Total MBI Score	Total MFI-20 Score	Burnout / Fatigue Level	Overall Interpretation
General practitioner	12.23 ±3.8	51.8 ±11.7	high	Highest workload and chronic fatigue.
Internal Medicine Specialist	10.8 ±3.9	49.2 ±10.8	moderately high	Continuous patient flow and diagnostic responsibility.
Psychiatrist / Psychotherapist	10.5 ±3.7	46.2 ±10.9	moderate	Empathic burnout due to constant emotional involvement.
Neurologist	10.9 ±3.6	48.6 ±11.3	moderate	Cognitive load and moderate exhaustion.
Anesthesiologist	11.2 ±3.8	47.9 ±12.1	moderately high	Shift work and high stress levels.
Pediatrician	9.9 ±3.4	43.8 ±9.8	moderately low	Emotional compensation through positive patient interactions.
Gynaecologist	9.8 ±3.4	42.5 ±9.5	low–moderate	Stable condition and strong emotional resilience.
Cardiologist	10.7 ±3.7	46.8 ±10.7	moderate	Work with chronic patients requiring sustained emotional engagement.
Ophthalmologist	9.63 ±3.3	41.9 ±9.3	low	Low workload and structured work routine.
Addiction Specialist	12.47 ±4.0	52.6 ±11.5	high	Emotionally demanding patients, social stress factors.
Surgeon	10.93 ±3.6	49.7 ±10.9	moderate–high	Physical fatigue and high responsibility during surgical procedures.

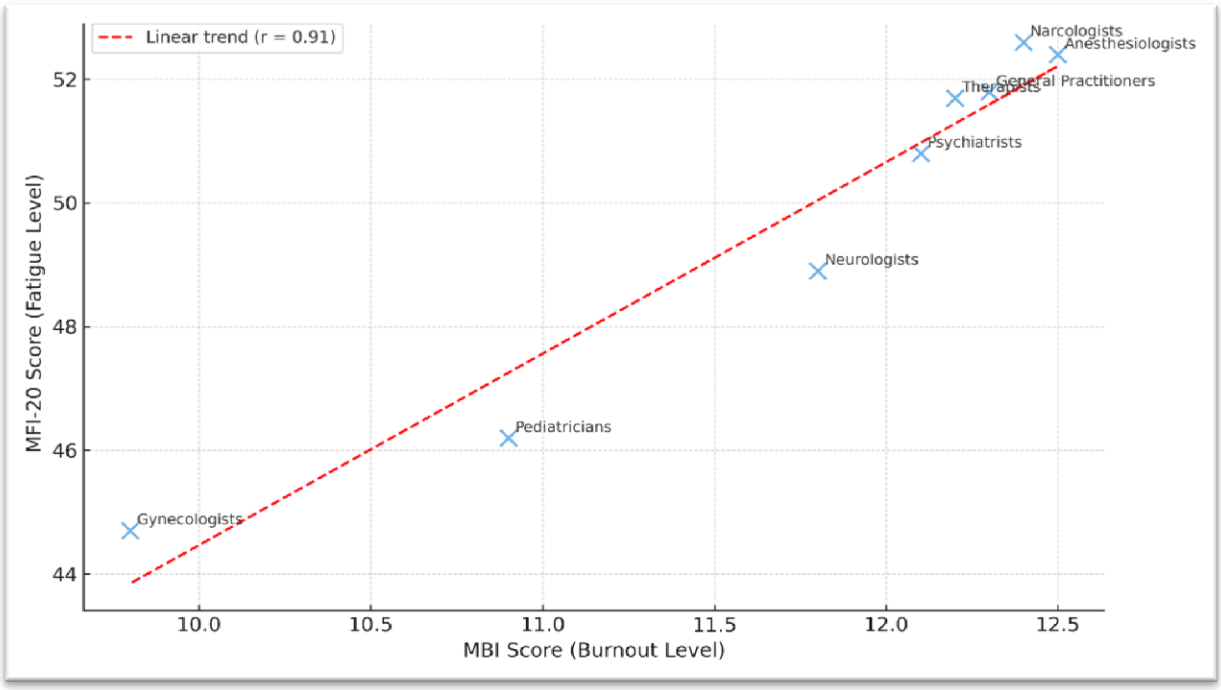

Figure 2. Correlation between burnout levels (MBI) and fatigue levels (MFI-20) among physicians of different specialties

The comparative analysis of burnout (MBI) and fatigue (MFI-20) indicators among medical professionals revealed significant interprofessional differences. The obtained data show that the nature of professional duties, workload, and level of emotional involvement strongly influence both the degree and form of professional burnout. General practitioners demonstrated the highest levels of burnout and fatigue (MBI=12.23±3.8; MFI-20=51.8±11.7), reflecting pronounced emotional exhaustion and depersonalization. Constant contact with patients, administrative overload, and insufficient time for recovery lead to marked physical and mental fatigue. These findings confirm that primary care physicians

represent the most vulnerable professional group, requiring targeted psychological and organizational support. Internal medicine specialists showed moderately high levels of burnout and fatigue (MBI=10.8±3.9; MFI-20=49.2±0.8). Emotional exhaustion is associated with continuous diagnostic responsibility and high patient flow. However, most internists retain empathy and professional motivation, indicating partial emotional resilience despite chronic tiredness. Psychiatrists and psychotherapists demonstrated moderate levels of burnout (MBI=10.5±3.7; MFI-20=46.2±10.9), characterized by emotional exhaustion and reduced personal accomplishment. A high degree of empathic involvement and moral stress contribute to persistent mental fatigue. Nevertheless, well-developed emotional awareness and professional supervision help to reduce the risk of chronic burnout. Neurologists showed moderate levels of burnout and fatigue (MBI=10.9±3.6; MFI-20=48.6±11.3). Their work involves long-term cognitive and emotional load, especially when managing patients with chronic neurological disorders. Despite notable fatigue, maintaining professional boundaries and emotional detachment supports functional stability. Anesthesiologists presented moderately high levels of burnout and fatigue (MBI=11.2±3.8; MFI-20=47.9±12.1). Prolonged night shifts, sustained cognitive demands, and the continuous responsibility for maintaining patients' vital functions contribute to chronic physical exhaustion. While depersonalization may initially operate as a protective psychological mechanism, persistent exposure to stress can transform it into maladaptive emotional blunting. Pediatricians demonstrated moderately low levels of burnout and fatigue (MBI=9.9±3.4; MFI-20=43.8±9.8). Despite considerable workload, positive emotional feedback from children and parents contributes to stress compensation. These results reflect high psychological adaptability and preserved empathy, making pediatricians one of the most emotionally resilient groups. Gynaecologists showed low to moderate burnout levels (MBI=9.8±3.4; MFI-20=42.5±9.5). Although their work is intense, emotional satisfaction from patient interaction and supportive team dynamics prevent severe exhaustion. A balanced emotional exchange and structured professional environment contribute to low burnout rates. Cardiologists demonstrated moderate burnout and fatigue levels (MBI=10.7±3.7; MFI-20=46.8±10.7). Their work involves high cognitive demands and responsibility; however, emotional self-regulation and professional engagement contribute to psychological stability, with physical fatigue predominating over emotional. Ophthalmologists showed the lowest levels of burnout and fatigue (MBI=9.63±3.3; MFI-20=41.9±9.3). Their work is structured and technical, providing minimal exposure to stressors. This group is characterized by high emotional stability and low susceptibility to burnout. Addiction specialists displayed high levels of burnout and fatigue (MBI=12.47±4.0; MFI-20=52.6 ±11.5), reflecting intense emotional strain in dealing with patients suffering from addictions and social problems. Chronic tension contributes to depersonalization and reduced motivation. This group requires continuous psychological support and supervision. Surgeons showed moderately high levels of burnout and fatigue (MBI=10.93±3.6; MFI-20=49.7±10.9). Physical fatigue plays the main role due to long operations and night duties. Emotional exhaustion is moderate, but cumulative workload increases the risk of chronic fatigue and energy depletion. Finally, the correlation analysis between burnout and fatigue revealed an almost linear relationship (r=0.91). The greater the degree of emotional and personal exhaustion, the more pronounced the resulting physical and cognitive fatigue. This indicates a systemic link between professional burnout and asthenia, reflecting a general depletion of adaptive resources. These findings confirm the need to implement psychological support programs, workload optimization, and regular monitoring of burnout among primary care physicians and other high-risk medical groups.

The higher the level of emotional and personal exhaustion, the more pronounced the physical and mental fatigue.

The most vulnerable professional groups were general practitioners and narcologists, who demonstrated the highest scores on both scales (MBI≈12.2-12.5; MFI-20≈51.8-52.6).

This finding indicates chronic overfatigue and emotional exhaustion resulting from constant contact with patients and socially challenging cases.

Internists and anesthesiologists occupy an intermediate position, showing moderately high levels of stress and physical fatigue.

In contrast, pediatricians, gynecologists, and ophthalmologists were found to be relatively resilient, exhibiting low values on both the MBI and MFI-20 scales.

Their work, although emotionally demanding, involves more positive feedback from patients and less extreme working conditions, which contributes to better emotional stability and professional well-being.

4. Discussion

One of the most striking patterns revealed was the correlation between years of professional experience and burnout severity. Physicians with more than 20 years of experience exhibited the highest levels of emotional exhaustion and depersonalization, indicating a cumulative stress effect. Similar observations have been made by West et al. [25] and Fujimori et al. [7], who found that prolonged exposure to high emotional demand without adequate recovery increases physiological and psychological vulnerability. The results suggest that long-term service in emotionally charged clinical environments leads to progressive depletion of coping resources. Consequently, sustained professional exposure without periodic psychological support or balanced workload redistribution may allow routine occupational stress to evolve into chronic burnout. These findings emphasize the necessity for longitudinal monitoring of experienced physicians and for integrating preventive measures such as sabbaticals, rotation schedules, and targeted stress-reduction programs.

Daily exposure to high patient volumes, administrative demands, and inadequate recovery time were the primary contributors to emotional exhaustion. In contrast, specialists,

although generally reporting lower burnout rates, showed moderate levels of depersonalization and reduced personal accomplishment, particularly in intensive care, oncology, and obstetrics. These results are comparable to those of Shanafelt et al. [21], who emphasized that prolonged involvement in emotionally demanding patient care leads to a loss of empathy and diminished sense of professional fulfillment. The contrast between generalists and specialists underlines that the frequency and diversity of patient interactions may be more stressful than the clinical complexity itself. Therefore, developing effective scheduling systems, administrative assistance, and emotional-support frameworks for primary-care physicians becomes critical for mitigating burnout.

The study also highlighted gender and age-related differences. Female physicians demonstrated slightly higher emotional exhaustion scores than males, a finding consistent with Alonso et al. [2] and Garcia et al. [8], who noted that female clinicians often experience additional psychosocial strain related to work–family balance and cultural expectations. Younger physicians exhibited elevated stress due to limited autonomy and professional insecurity, whereas senior clinicians manifested chronic fatigue accumulated over years of service. These patterns show that burnout determinants evolve across the professional lifespan. Tailored prevention strategies should therefore account for both generational and gender-specific needs: mentorship and skill-development programs for younger physicians, flexible scheduling and family-friendly policies for women, and restorative interventions for senior staff experiencing cumulative fatigue. In addition, the results reaffirm the importance of organizational and psychosocial factors. Lack of institutional support, poor communication with administration, and limited access to psychological counseling were frequently reported among respondents. These observations align with data from the WHO [26] and Dzau et al. [6], which stress the necessity of structural interventions rather than relying solely on individual coping strategies. Hospitals with integrated well-being programs, regular supervision, and peer-support systems demonstrate significantly lower burnout levels among staff. Organizational culture that encourages open communication, fair workload distribution, and recognition of professional achievements can serve as a powerful protective factor. Therefore, systemic reform should accompany individual-level interventions to achieve sustainable improvements in physicians' mental health.

Interestingly, a subset of specialists – particularly those in neurology, psychiatry, and gynecology – displayed high depersonalization levels despite moderate overall burnout scores. This may reflect emotional detachment as a protective mechanism, a pattern described in Hobfoll's [9] Conservation of Resources theory. Emotional distancing helps maintain professional functioning but may, over time, impair empathy and job satisfaction. Therefore, early psychological support and structured peer discussions should be encouraged to transform adaptive distancing into healthy professional boundaries. Continuous education in emotional regulation, supervision meetings, and reflective practice groups can prevent depersonalization from progressing to full burnout and maintain high standards of patient care.

Another notable observation concerns the role of post-pandemic adaptation. Physicians who had direct experience treating COVID-19 patients reported persistent fatigue and decreased motivation, even several years after the pandemic. This chronic post-stress fatigue mirrors international findings [5,16] that identify COVID-related moral injury as a long-term burnout determinant. The persistence of such symptoms underscores the need for specialized rehabilitation programs focused on trauma recovery, moral distress counseling, and restoration of professional confidence. Post-pandemic mental-health initiatives should be incorporated into occupational-health frameworks to ensure ongoing monitoring and support of healthcare workers exposed to crisis conditions.

Overall, the results confirm that burnout in the Uzbek medical context shares many features with global trends, while also being influenced by local systemic challenges – such as limited institutional support, administrative overload, and insufficient psychological services. The lack of preventive interventions exacerbates vulnerability to chronic exhaustion. Introducing systematic stress management training, mentorship programs, and professional supervision could substantially mitigate burnout rates [11]. National-level strategies should prioritize physician well-being, integrating psychological services into primary-care settings and ensuring funding for continuous education on resilience and self-care.

From a clinical standpoint, burnout among physicians not only affects mental health but also has practical implications for healthcare outcomes. Emotional exhaustion leads to increased diagnostic errors, reduced empathy, and diminished patient satisfaction [17,20]. Consequently, addressing physician burnout should be recognized as a public health priority. Interventions should include early detection using validated scales such as the Maslach Burnout Inventory (MBI) and Boyko's "Emotional Burnout" questionnaire, continuous mental-health screening, and targeted counseling. Incorporating wellness metrics into institutional performance indicators can further enhance accountability and encourage hospitals to invest in workforce well-being.

In conclusion, the findings of this study emphasize the multidimensional nature of burnout syndrome among healthcare professionals in Uzbekistan. The higher burnout prevalence among general practitioners highlights the need for immediate systemic and psychological interventions. Comparative analysis with international data supports the view that burnout represents not merely an individual issue but a collective institutional and societal challenge. Comprehensive reforms focusing on workload optimization, administrative simplification, leadership training, and continuous psychological support can improve both physician well-being and quality of patient care.

5. Conclusions

The present study demonstrates that emotional burnout and professional fatigue are significant and prevalent issues among physicians of various specialties. The most vulnerable groups were those exposed to intense emotional demands and heavy patient flows, particularly primary care physicians and addiction specialists. The strong association observed between emotional burnout and fatigue highlights the need for a comprehensive prevention strategy that includes workload optimization, psychological support, and regular monitoring of healthcare workers' emotional well-being. These findings indicate that burnout should be viewed not only as an individual response to stress but also as an indicator of organizational functioning. Effective prevention requires systemic changes aimed at improving working conditions, rational distribution of professional responsibilities, and fostering a corporate culture that prioritizes the emotional well-being of medical staff.

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