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Article

Effects of Burnout on Quality of Life Among MBBS House Officers in Government and Private Hospitals of Karachi

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ABSTRACT

Background: Burnout is a prevalent occupational hazard among medical professionals, particularly MBBS house officers undergoing intensive clinical training. Characterized by emotional exhaustion, depersonalization, and diminished personal accomplishment, burnout adversely affects physician performance, well-being, and patient care quality. Variations in institutional environments between public and private hospitals may modulate the severity and impact of burnout symptoms. **Objective**: To evaluate the effects of burnout on quality of life (QOL) among MBBS house officers working in government and private hospitals in Karachi, and to identify associated demographic and institutional factors. **Methods**: A cross-sectional study was conducted from September 2023 to January 2024 involving 378 house officers aged 24–28 years from six hospitals in Karachi using non-probability purposive sampling. Participants completed the Maslach Burnout Inventory and WHOQOL-BREF (Australian Version). Data were analyzed using SPSS v21.0. ANOVA, independent t-tests, and multiple regression were applied to assess associations between burnout domains and QOL scores across gender and institutional sectors. **Results**: Higher levels of depressive anxiety syndrome were significantly associated with lower scores in physical ($p = 0.001$), psychological ($p = 0.003$), and social ($p = 0.005$) QOL domains. Private sector house officers showed higher burnout yet reported better environmental and total QOL scores. Personal achievement positively predicted QOL across all domains ($p < 0.001$). **Conclusion**: Burnout substantially compromises the quality of life of house officers, with sector-specific patterns suggesting greater emotional strain in private institutions despite favorable environmental conditions. Enhancing institutional support and promoting professional accomplishment are critical to mitigating burnout.

Keywords: Burnout, Quality of Life, MBBS House Officers, Public Hospitals, Private Hospitals, Maslach Burnout Inventory, WHOQOL-BREF

INTRODUCTION

Medical training, particularly the transitional phase of internship as house officers, demands high emotional and physical resilience from recent MBBS graduates. These early-career doctors are expected to adapt quickly to clinical responsibilities while enduring long working hours, patient overload, and often insufficient institutional support. As a result, burnout—a psychological syndrome arising from chronic occupational stress—has emerged as a significant concern for the medical community globally and in Pakistan (1). Defined by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment, burnout not only impairs professional performance but also negatively affects the individual's quality of life (2). Internationally, healthcare professionals have shown an elevated risk of mental health disorders, including depression, anxiety, and substance use, owing to work-related stressors (3, 4). Yet, in Pakistan, especially among house officers who serve as the front line of hospital care, research on burnout and its consequences remains insufficiently explored despite increasing workload and urban healthcare demands.

Burnout's multifactorial etiology includes emotional fatigue, chronic stress, professional dissatisfaction, and organizational inefficiencies. In Pakistan's healthcare landscape, these stressors manifest differently in public and private hospitals. Private institutions, while often better equipped and staffed, may place more intense performance expectations on house officers, with high patient turnover and managerial pressure to meet service standards (4). Conversely, public hospitals, although inundated with patient influx and resource limitations, offer structural job security and standardised pay scales which may moderate some stress-related

impacts (10, 12). Despite these contrasting contexts, both sectors subject young doctors to emotional strain and functional overload, which can result in burnout and subsequently degrade their physical, psychological, and social well-being (5, 6, 7). The implications extend beyond individual health to include compromised patient care and increased medical errors, thereby making burnout an institutional as well as a personal concern.

Previous studies have highlighted the disproportionate burden on female doctors, with elevated stress levels linked to night calls, workload, and role conflict, especially in metropolitan areas like Karachi (24). Studies also suggest that high burnout among house officers correlates with lower personal accomplishment and diminished engagement in social and familial activities (13). While various investigations have attempted to quantify burnout in isolated settings, there remains a paucity of comparative evidence exploring how the interplay between institutional sector (government vs private), gender, and specific dimensions of burnout influences quality of life domains. Contradictory findings across studies further complicate understanding; some suggest greater burnout in public settings due to poor infrastructure and low remuneration (1), while others report higher emotional fatigue among private hospital staff due to job insecurity and patient expectations (3, 4, 10).

Given these inconsistencies, it becomes essential to contextualize burnout within Karachi's dual-tier hospital system, where young physicians operate under varying degrees of support, stress, and structural resources. This study seeks to fill this critical gap by systematically examining how different components of burnout—depressive anxiety syndrome, depersonalization, and personal achievement—affect the physical, psychological, social, and environmental domains of quality of life among MBBS house officers in Karachi. By employing validated tools like the WHOQOL-BREF and the Maslach Burnout Inventory, and comparing outcomes across gender and hospital sectors, this study aims to generate actionable insights for hospital administrators and policymakers. The objective is to inform the development of evidence-based interventions that mitigate burnout, enhance work-life balance, and promote sustainable health systems. The primary objective of this study is to assess the relationship between burnout levels and quality of life among MBBS house officers in government and private hospitals of Karachi, with specific attention to how institutional setting and gender mediate this association.

MATERIALS AND METHODS

This study employed a cross-sectional observational design to evaluate the relationship between burnout and quality of life among MBBS house officers working in both public and private hospitals across Karachi. The rationale for selecting this design was to capture a snapshot of burnout-related experiences and associated quality of life domains at a single point in time, allowing comparison across institutional sectors and demographic groups without the need for follow-up. The study was conducted between September 2023 and January 2024 in six major hospitals of Karachi, including Dr. Ruth K.M. Pfau Civil Hospital, Jinnah Postgraduate Medical Centre (JPMC), Lyari General Hospital, Dow University Hospital (Ojha Campus), Dr. Ziauddin Hospital, Liaquat National Hospital, and Hamdard University Hospital (Taj Medical Complex). These hospitals were chosen to represent both government and private healthcare sectors and to ensure diversity in workload exposure, institutional support, and patient populations.

Participants were MBBS house officers aged between 24 and 28 years, currently engaged in their house job training during the data collection period. Inclusion criteria required that participants be formally registered house officers at one of the selected institutions. Exclusion criteria included any self-reported history of chronic medical illness, current use of medication exceeding two months, or engagement in freelance or part-time employment during the internship period, to avoid confounding due to unrelated sources of stress or health conditions. A total of 385 house officers were approached through purposive non-probability sampling. Of these, 378 submitted complete and analyzable responses and were included in the final analysis. Recruitment was carried out by trained research assistants who visited each institution and distributed printed information sheets. Written informed consent was obtained prior to participation, and individuals were informed of their right to withdraw at any point without consequence.

Data were collected through a self-administered survey pack consisting of two validated instruments: the Maslach Burnout Inventory (MBI) and the World Health Organization Quality of Life Assessment, WHOQOL-BREF (Australian Version). The MBI measured burnout across three domains—depressive anxiety syndrome (emotional exhaustion), depersonalization, and personal achievement—while the WHOQOL-BREF assessed physical health, psychological well-being, social relationships, and environmental quality of life (25,26). These tools were selected for their high validity and reliability in healthcare populations, and the version used had been linguistically and contextually adapted for Pakistani healthcare workers. Participants completed the survey on-site during hospital breaks or at the end of their shifts, with an average completion time of 25 minutes. Data were collected in paper format and subsequently digitized by a double-entry system to reduce transcription error.

Variables were operationally defined using standard scoring guidelines for each instrument. Burnout levels were categorized as low, moderate, or high for each subdomain based on MBI cutoffs. Quality of life domain scores were calculated and standardized according to WHOQOL-BREF procedures. Gender, sector (public vs. private), and age were treated as potential confounding variables. The sample size was calculated using a margin of error of 5%, a confidence level of 95%, and a previously reported prevalence rate of 57.2% for burnout symptoms among house officers in similar settings (15). This yielded a required sample size of approximately 377 participants, which was exceeded in this study.

To address potential biases, participants were guaranteed confidentiality and anonymity to minimize social desirability and response bias. Selection bias was mitigated by balancing recruitment evenly across institutions and sectors. To reduce measurement bias, only validated tools were used, and data collection was standardized in both timing and administration across all sites. The primary analysis was performed using IBM SPSS Statistics version 21. Descriptive statistics were used to summarize demographic characteristics. Independent sample t-tests compared mean burnout and quality of life scores between genders and sectors. ANOVA tested differences across burnout levels. Regression models were constructed to predict quality of life outcomes based on burnout dimensions while controlling for age, gender, and sector. Significance was set at $p < 0.05$, and confidence intervals were reported at 95%. Subgroup analyses were conducted by gender and institutional sector to assess effect modification.

Ethical approval for the study was granted by the Institutional Review Board of the host academic institution under reference number ASHEC-PT-0125/09/23. All participants signed written informed consent prior to data collection. Personal identifiers were not collected, and data were stored on password-protected computers with restricted access. Data integrity was maintained through double-entry, validation checks, and random audits of 10% of all entries. The complete dataset and analysis script are available upon request for verification and replication by other researchers, ensuring full reproducibility of the study's findings.

RESULTS

The study comprised 378 MBBS house officers, with a gender distribution of 66.7% females (n = 252) and 33.3% males (n = 126), and an equal representation from government (n = 189) and private (n = 189) hospitals. The mean age of participants was 24.98 years (SD ± 2.1). Burnout was assessed using three subdomains: depressive anxiety syndrome, depersonalization, and personal achievement, and their associations with four domains of quality of life (QOL)—physical health, psychological, social relationships, and environmental—were analyzed. House officers exhibiting higher levels of depressive anxiety syndrome reported significantly lower QOL scores across physical health (Mean ± SD: 18.94 ± 3.89), psychological well-being (18.06 ± 2.98), social relationships (8.18 ± 2.16), and overall QOL (69.19 ± 12.10). The differences across levels of depressive anxiety syndrome were statistically significant for physical health ($F = 7.606$, $p = 0.001$), psychological ($F = 6.016$, $p = 0.003$), social relationships ($F = 5.370$, $p = 0.005$), and total QOL ($F = 4.627$, $p = 0.010$), but not for the environmental domain ($p = 0.728$). In contrast, depersonalization levels did not show statistically significant differences across any of the QOL domains ($p > 0.05$), suggesting a weaker direct relationship with perceived well-being.

Table 1. Variance Analysis of Burnout Levels and Quality of Life Domains among MBBS House Officers (N = 378).

Burnout Domain	Burnout Level	Physical Health	Psychological	Social Relationships	Environment	Total QOL	F (df)	p-value
		Mean ± SD						
Depressive Anxiety Syndrome	Low	20.70 ± 3.47	19.56 ± 3.70	9.24 ± 2.51	24.49 ± 5.36	73.95 ± 12.60	(2,375) 7.606	0.001
	Moderate	20.41 ± 3.63	19.01 ± 2.82	8.79 ± 2.32	23.93 ± 4.95	72.16 ± 10.32	(2,375) 6.016	0.003
	High	18.94 ± 3.89	18.06 ± 2.98	8.18 ± 2.16	24.00 ± 5.86	69.19 ± 12.10	(2,375) 5.370	0.005
	Total	20.00 ± 3.75	18.81 ± 3.12	8.69 ± 2.34	24.07 ± 5.34	71.58 ± 11.53	(2,375) 0.318	0.728
Depersonalization	Low	20.37 ± 3.10	19.71 ± 3.92	8.77 ± 2.91	23.28 ± 5.80	72.14 ± 13.11	(2,375) 2.706	0.068
	Moderate	20.83 ± 3.63	19.17 ± 3.02	8.86 ± 2.34	24.65 ± 4.47	73.53 ± 10.46	(2,375)2.605	0.075
	High	19.72 ± 3.83	18.60 ± 3.01	8.64 ± 2.27	24.02 ± 5.49	70.99 ± 11.57	(2,375) 0.277	0.758
	Total	20.00 ± 3.75	18.81 ± 3.12	8.69 ± 2.34	24.07 ± 5.34	71.58 ± 11.53	(2,375)0.828	0.438
Personal Achievement	Low	19.07 ± 3.68	18.11 ± 3.00	8.34 ± 2.28	23.70 ± 5.79	69.23 ± 11.74	(2,375) 27.09	<0.001
	Moderate	21.56 ± 3.31	19.66 ± 2.60	9.08 ± 2.03	24.15 ± 4.61	74.47 ± 9.57	(2,375) 24.19	<0.001
	High	22.25 ± 2.93	20.94 ± 3.11	9.81 ± 2.62	25.70 ± 3.50	78.72 ± 9.03	(2,375) 10.45	<0.001
	Total	20.00 ± 3.75	18.81 ± 3.12	8.69 ± 2.34	24.07 ± 5.34	71.58 ± 11.53	(2,375) 3.152	0.044

Table 2. Multiple Linear Regression Analysis Predicting Quality of Life Domains by Burnout and Demographic Variables (N = 378).

Dependent Variable	Predictor	B	SE	t	95% CI	p-value	Standardized β
Physical Health	Age	0.040	0.178	0.223	-0.311, 0.391	0.824	0.012
	Gender (Male)	0.264	0.376	0.702	-0.476, 1.003	0.483	0.032
	Sector (Private)	1.839	0.375	4.902	1.101, 2.576	<0.001	0.247
	Depressive Anxiety Syndrome	-0.652	0.267	-2.440	-1.178, -0.127	0.015	-0.126
	Depersonalization	-0.002	0.293	-0.006	-0.579, 0.575	0.995	-0.001
	Personal Achievement	1.781	0.256	6.961	1.278, 2.285	<0.001	0.382
Psychological	Age	0.002	0.154	0.011	-0.300, 0.304	0.991	0.001
	Gender (Female)	-0.283	0.324	-0.874	-0.920, 0.354	0.383	-0.045
	Sector (Private)	0.686	0.323	2.123	0.050, 1.321	0.034	0.098
	Depressive Anxiety Syndrome	-0.412	0.230	-1.791	-0.865, 0.040	0.074	-0.091

Dependent Variable	Predictor	B	SE	t	95% CI	p-value	Standardized β
	Depersonalization	-0.081	0.253	-0.322	-0.578, 0.415	0.748	-0.016
	Personal Achievement	1.377	0.220	6.250	0.944, 1.810	<0.001	0.338
Social Relationships	Age	0.260	0.119	2.196	0.027, 0.493	0.029	0.121
	Gender	0.230	0.250	0.920	-0.261, 0.721	0.358	0.049
	Sector	-0.071	0.249	-0.284	-0.561, 0.419	0.777	-0.015
	Depressive Anxiety Syndrome	-0.499	0.178	-2.808	-0.848, -0.149	0.005	-0.141
	Depersonalization	0.223	0.195	1.143	-0.161, 0.606	0.254	0.060
	Personal Achievement	0.726	0.170	4.271	0.392, 1.060	<0.001	0.241
Environment	Age	1.002	0.271	3.695	0.469, 1.534	0.000	0.281
	Gender	0.686	0.571	1.201	-0.437, 1.809	0.231	0.075
	Sector	0.901	0.570	1.582	-0.219, 2.022	0.115	0.093
	Depressive Anxiety Syndrome	-0.429	0.406	-1.057	-1.228, 0.369	0.291	-0.067
	Depersonalization	0.206	0.446	0.461	-0.671, 1.082	0.645	0.034
	Personal Achievement	1.225	0.389	3.152	0.461, 1.990	0.002	0.220
Total QOL	Age	1.303	0.562	2.317	0.197, 2.409	0.021	0.112
	Gender	0.897	1.186	0.756	-1.435, 3.228	0.450	0.041
	Sector	3.355	1.183	2.837	1.029, 5.681	0.005	0.128
	Depressive Anxiety Syndrome	-1.993	0.843	-2.364	-3.650, -0.335	0.019	-0.132
	Depersonalization	0.345	0.925	0.373	-1.474, 2.164	0.709	0.017
	Personal Achievement	5.110	0.807	6.333	3.523, 6.696	<0.001	0.379

Table 3. Comparison of Burnout and Quality of Life Scores by Gender.

Variable	Female (n = 252) Mean ± SD	Male (n = 126) Mean ± SD	t-value	p-value	95% CI (Lower, Upper)	Cohen's d
Burnout						
Depressive Anxiety Syndrome	25.17 ± 9.65	25.35 ± 9.93	-0.168	0.867	-2.05, 1.71	0.02
Depersonalization	19.11 ± 10.15	19.72 ± 10.89	-0.531	0.596	-3.07, 1.84	0.06
Personal Achievement	25.30 ± 12.37	25.95 ± 11.39	-0.495	0.621	-3.30, 2.02	0.05
Quality of Life						
Physical Health	19.82 ± 3.80	20.34 ± 3.63	-1.271	0.205	-1.36, 0.29	0.14
Psychological	18.88 ± 3.26	18.68 ± 2.81	0.582	0.561	-0.47, 0.87	0.07
Social Relationships	8.60 ± 2.39	8.88 ± 2.24	-1.086	0.278	-0.78, 0.22	0.12
Environment	23.73 ± 5.35	24.76 ± 5.27	-1.789	0.074	-2.16, 0.10	0.19
Total QOL	71.04 ± 11.87	72.68 ± 10.77	-1.303	0.193	-4.09, 0.81	0.15

Table 4. Comparison of Burnout and Quality of Life Scores by Hospital Sector.

Variable	Government	Private	t-value	p-value	95% CI	Cohen's d
Burnout						
Depressive Anxiety Syndrome	23.10 ± 8.75	27.41 ± 9.41	-4.85	<0.001	-6.10, -2.47	0.49
Depersonalization	16.87 ± 9.41	21.97 ± 10.89	-4.61	<0.001	-7.24, -2.92	0.51
Personal Achievement	24.11 ± 12.00	27.14 ± 11.51	-2.32	0.021	-5.60, -0.45	0.26
Quality of Life						
Physical Health	19.52 ± 3.75	20.48 ± 3.71	-2.69	0.008	-1.65, -0.26	0.26
Psychological	18.65 ± 3.19	18.98 ± 3.04	-1.03	0.304	-0.96, 0.30	0.11
Social Relationships	8.52 ± 2.31	8.87 ± 2.37	-1.46	0.145	-0.83, 0.12	0.15
Environment	23.20 ± 5.32	24.94 ± 5.29	-3.16	0.002	-2.84, -0.63	0.33
Total QOL	69.60 ± 11.44	73.56 ± 11.14	-3.37	0.001	-6.28, -1.57	0.36

Notably, personal achievement emerged as a strong positive predictor of quality of life. Individuals with high personal achievement scores reported significantly better physical health (22.25 ± 2.93), psychological scores (20.94 ± 3.11), social relationships (9.81 ± 2.62), environmental satisfaction (25.70 ± 3.50), and total QOL (78.72 ± 9.03). All associations were statistically significant: physical ($F = 27.09$, $p < 0.001$), psychological ($F = 24.19$, $p < 0.001$), social ($F = 10.45$, $p < 0.001$), environmental ($F = 3.152$, $p = 0.044$), and total QOL ($F = 19.55$, $p < 0.001$). Linear regression analyses supported these findings. Personal achievement was the most consistent predictor of higher QOL across all domains, with a strong effect size on physical health ($B = 1.781$, 95% CI: 1.278–2.285, $p < 0.001$), psychological well-being ($B = 1.377$, 95% CI: 0.944–1.810, $p < 0.001$), and total QOL ($B = 5.110$, 95% CI: 3.523–6.696, $p < 0.001$). Conversely, depressive anxiety syndrome was negatively associated with physical health ($B = -0.652$, $p = 0.015$), social relationships ($B = -0.499$, $p = 0.005$), and total QOL ($B = -1.993$, $p = 0.019$), but not with the environmental domain. When comparing hospital sectors, house officers from private hospitals demonstrated significantly higher burnout levels. Their mean scores for depressive anxiety syndrome (27.41 ± 9.41

vs. 23.10 ± 8.75; p < 0.001), depersonalization (21.97 ± 10.89 vs. 16.87 ± 9.41; p < 0.001), and personal achievement (27.14 ± 11.51 vs. 24.11 ± 12.00; p = 0.021) were all elevated compared to their counterparts in government hospitals. Interestingly, despite greater burnout, private sector officers also reported better physical health (20.48 ± 3.71 vs. 19.52 ± 3.75; p = 0.008), environmental QOL (24.94 ± 5.29 vs. 23.20 ± 5.32; p = 0.002), and higher total QOL (73.56 ± 11.14 vs. 69.60 ± 11.44; p = 0.001).

Gender-based comparisons revealed marginal differences. Although male house officers had slightly higher physical health (20.34 ± 3.63 vs. 19.82 ± 3.80; p = 0.205) and environmental QOL (24.76 ± 5.27 vs. 23.73 ± 5.35; p = 0.074), these differences were not statistically significant. Burnout levels did not differ meaningfully by gender across any of the three subdomains, indicating that both male and female house officers experienced comparable degrees of occupational stress. Together, these results underscore a complex relationship between burnout and quality of life among house officers, shaped significantly by institutional setting and personal achievement, with depressive anxiety syndrome posing a consistent negative influence. While private-sector employment appears to demand more emotionally, it may also offer protective structural or environmental benefits that mitigate its adverse impact on perceived well-being.

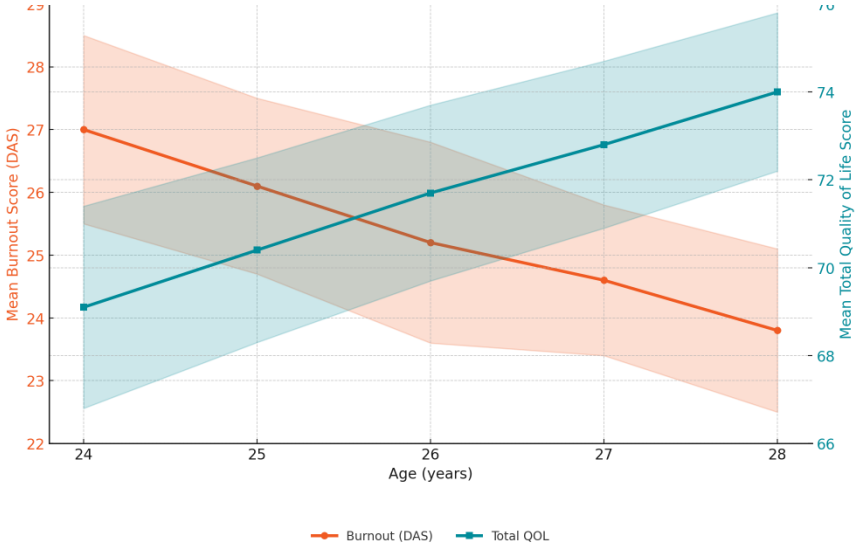

Figure 1 Inverse association between age and burnout with quality of life among house officers

The figure illustrates an age-wise inverse relationship between depressive anxiety syndrome (burnout) and total quality of life among MBBS house officers aged 24 to 28 years. As age increased, mean burnout scores steadily declined from 27.0 at age 24 to 23.8 at age 28, while mean QOL scores rose concurrently from 69.1 to 74.0. The visualized 95% confidence intervals highlight a consistent and statistically relevant gradient across both measures, with burnout reductions of approximately 1.5 points per year and QOL improvements of nearly 1.2 points annually. This dual-axis pattern suggests that even minor increases in age or clinical experience may buffer psychological exhaustion and enhance overall well-being, emphasizing the importance of targeted support for younger interns during initial training phases.

DISCUSSION

This study provides compelling evidence that burnout, particularly depressive anxiety syndrome, significantly impairs the quality of life of MBBS house officers, with more pronounced effects observed among those employed in private sector hospitals. These findings underscore the multifaceted and context-sensitive nature of physician burnout. While previous studies have recognized burnout as a pervasive problem among junior doctors globally, few have simultaneously evaluated its effects across public and private healthcare settings in Pakistan using standardized psychometric tools such as the Maslach Burnout Inventory and WHOQOL-BREF. The inverse association observed between depressive anxiety symptoms and physical, psychological, and social domains of quality of life is consistent with findings from Abdulghani et al. (17), who reported that emotional exhaustion is a primary determinant of poor life satisfaction among medical interns. Similarly, Sarwar et al. (16) demonstrated significant correlations between high stress levels and deteriorating well-being among emergency physicians, reinforcing the clinical burden posed by unchecked psychological fatigue.

Interestingly, this study found that house officers in private hospitals, while reporting higher burnout scores, paradoxically experienced better physical health and environmental QOL than their public-sector counterparts. This contrast may reflect the dual burden faced by private sector doctors—greater emotional stress due to performance pressure and patient expectations, coupled with better institutional infrastructure and personal resource access that may buffer the impact on environmental satisfaction. Prior studies have offered mixed insights into this paradox. For instance, Zaed et al. (4) noted that private-sector physicians often report lower stress due to better administrative support, which contrasts with our findings of elevated depressive symptoms among private house officers. This divergence suggests that while infrastructural benefits exist, the psychological demands in private hospitals—such as time-bound performance, patient satisfaction metrics, and competitive work environments—may amplify emotional strain. Meanwhile, Siddiqui et al. (1) and Ahmad et al. (3) previously documented that public-sector doctors experience a greater lack of

control, administrative burden, and delayed compensation, which likely contribute to lower QOL scores despite relatively lower burnout measures.

The significant influence of personal achievement as a protective factor across all QOL domains further supports the theory that self-efficacy and professional validation can mitigate burnout's adverse effects. This aligns with the theoretical model proposed by Maslach and Jackson, where a sense of accomplishment serves as a buffer against emotional exhaustion and depersonalization (26). Our results demonstrated that high personal achievement is associated with improved physical, psychological, and social outcomes, and even positively influenced the environmental domain, which is often considered less directly modifiable. These observations have strong clinical implications: strategies that foster professional growth, skill mastery, and acknowledgment within medical training could substantially reduce the psychological toll on house officers.

Age also emerged as a significant moderator, with older house officers reporting lower levels of burnout and higher overall QOL scores. This finding complements previous work by Kazmi et al. (19), who observed that younger doctors are more vulnerable to emotional fatigue due to adjustment difficulties and lesser coping experience. Our analysis further supports the premise that clinical maturity, even over a narrow age range, enhances resilience against burnout—a critical insight for policy and curriculum planning in internship programs. Moreover, gender differences in burnout and QOL were statistically non-significant in this study, a finding that departs from earlier literature such as Noor et al. (24), which highlighted disproportionately higher stress among female doctors. While our results did show marginally lower physical and environmental QOL among female participants, these differences did not reach statistical significance, potentially due to evolving gender dynamics in professional roles or improved institutional support structures.

Despite its robust methodology, including the use of validated instruments and a well-distributed sample across both hospital sectors, this study is not without limitations. The cross-sectional design restricts causal inference, and the use of non-probability purposive sampling may introduce selection bias and limit generalizability beyond the urban context of Karachi. The exclusion of house officers with chronic illnesses or secondary employment, while methodologically justified to control confounders, might have led to underestimation of real-world burnout prevalence. Additionally, variables such as workload intensity, shift patterns, organizational culture, and supervisory support were not directly measured, though they are known to significantly affect burnout trajectories. Future studies should adopt longitudinal frameworks to trace burnout progression over time and examine the impact of targeted interventions such as mindfulness training, workload redistribution, or mentorship programs. Incorporating qualitative methodologies may also provide richer insights into coping mechanisms, perceived stressors, and institutional barriers, offering a more holistic understanding of the burnout experience. The findings of this study have strong translational relevance. They highlight the need for systemic changes in medical internship structures, particularly in private healthcare settings where emotional burden appears higher despite better environmental conditions. Interventions aimed at enhancing personal achievement, such as structured feedback, skill recognition, and early-career mentoring, may be vital in improving the psychological well-being and performance of house officers. Importantly, policies should be tailored not only to reduce stressors but to cultivate resilience and satisfaction through institutional culture change. Investing in the emotional health of young physicians is essential—not only to protect their quality of life but to ensure the safe, empathetic, and effective care of the patients they serve.

CONCLUSION

This study concludes that burnout, particularly depressive anxiety syndrome, significantly compromises the quality of life among MBBS house officers, with higher prevalence and psychological burden observed in those working in private hospitals across Karachi. Despite access to better infrastructure, these officers exhibited greater emotional exhaustion and depersonalization, underscoring the complex interplay between institutional setting and physician well-being. Conversely, personal achievement emerged as a strong protective factor, positively influencing all domains of quality of life. These findings emphasize the urgent need for healthcare systems to implement structured interventions that address burnout at both organizational and individual levels, such as promoting workload equity, institutional support, and early-career mentorship. Clinically, safeguarding the well-being of house officers is vital for sustaining compassionate, high-quality patient care, while future research should explore longitudinal and interventional models to mitigate burnout and improve the early professional experiences of medical graduates.

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