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Burnout Syndrome among Anesthesiology and Intensive Care Practitioners: A Cross-Sectional Survey of Moroccan Physicians

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Abstract **Original Research Article**

Background: Burnout, a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment, is highly prevalent among physicians in high-acuity specialties such as anesthesiology and intensive care. Data from North Africa remain scarce. This study determined the prevalence of burnout and its associated factors among Moroccan anesthesiologists and intensivists. ***Methods:*** Cross-sectional survey of Moroccan anesthesiologists and intensivists (2025) using the validated 22-item Maslach Burnout Inventory (MBI-HSS), scored across emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). Occupational stressors and coping behaviors were also collected. Bivariate associations were tested with Kruskal-Wallis, Mann-Whitney U, and chi-square tests (significance $p<0.05$). ***Results:*** Eighty-eight practitioners completed the survey (80.7% male; median age 36 years [IQR 33-47]). High emotional exhaustion was found in 42.5% of respondents (median 25 [IQR 17-42]), high depersonalization in 35.6% (median 6 [IQR 3-15]), and low personal accomplishment in 39.1% (mean 34.7 ± 8.01). Overall, 87.1% reported having already experienced burnout symptoms, and 36.0% self-identified as currently burned out. Personal accomplishment increased with years of experience ($p=0.032$) and age (Spearman $\rho=0.229$, $p=0.034$); no other variable was significantly associated with any MBI subscale. Leading stressors were excessive workload (82.6%), insufficient staffing (66.3%), poor organization (65.1%), and unsatisfactory pay-to-effort ratio (64.0%). Sleep disturbance affected 78.8%, and 4.8% reported suicidal ideation related to work stress. ***Conclusions:*** Burnout is highly prevalent among Moroccan anesthesiologists and intensivists. Workload, staffing, and organizational factors were the principal drivers, and personal accomplishment was linked to clinical experience and age. Institutional interventions targeting workload, staffing, and psychological support are urgently needed.

Keywords: Burnout, professional; Anesthesiology; Critical care; Maslach Burnout Inventory; Occupational stress; Physicians; Morocco.

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1. INTRODUCTION

Burnout is a psychological syndrome arising from chronic occupational stress, defined along three dimensions : emotional exhaustion, depersonalization, and diminished personal accomplishment [1]. Since 2019, the World Health Organization has recognized burnout as an occupational phenomenon resulting from chronic workplace stress that has not been successfully managed [2]. Physicians are disproportionately affected, with consequences extending to depression, substance use, and suicidal ideation at the individual level [3,4], and to increased medical errors, reduced care quality, and staff turnover at the system level [3,5].

Anesthesiology and intensive care medicine are among the specialties at greatest risk of burnout, owing to unpredictable working hours, high-stakes decision making, frequent confrontation with critical illness, and, in many systems, chronic understaffing [6,7]. A recent meta-analysis of European and North American anesthesiologists found emotional exhaustion and depersonalization scores exceeding Maslach's normative population, with regional variation [8]. Comparable or higher figures have been reported in Palestinian anesthesia and intensive care teams (emotional exhaustion 71.2%, depersonalization 59.0%) [9]. Data from the Middle East and North Africa remain limited, though recent Moroccan studies have documented

substantial burnout among public health personnel, oncology staff, and hospital workers during and after the COVID-19 pandemic [10,11,13], and a multinational Arab survey found high burnout prevalence among rheumatologists [12]. Dedicated data on anesthesiology and intensive care practitioners are, to our knowledge, unavailable for Morocco.

This study aimed to determine the prevalence of burnout and its three MBI dimensions among Moroccan anesthesiologists and intensivists, identify associated sociodemographic and occupational factors, and characterize perceived stressors and burnout-associated symptoms, including suicidal ideation.

2. MATERIALS AND METHODS

We conducted a cross-sectional survey of physicians practicing anesthesiology and intensive care medicine in Morocco during 2025, coordinated from the Department of Anesthesiology and Intensive Care of the Mohammed V Military Teaching Hospital, Rabat. Eligible participants were academic/teaching staff, board-certified specialists, and residents-in-training. Participation was voluntary and anonymous; completion of the questionnaire implied informed consent.

Data were collected via a self-administered electronic questionnaire covering sociodemographic and occupational characteristics, prior awareness and self-perceived experience of burnout, perceived occupational stressors (15 pre-specified items plus free text), emotional and physical correlates of stress, coping/avoidance behaviors including suicidal ideation, and the 22-item Maslach Burnout Inventory, Human Services Survey (MBI-HSS), the standard validated instrument for burnout in healthcare professionals [1,14]. Each item is rated on a 7-point frequency scale (0="never" to 6="every day"), summed within three subscales: emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 items). Higher emotional exhaustion and depersonalization scores indicate greater severity, whereas lower personal accomplishment scores indicate greater severity; scores were categorized into low, moderate, and high tertiles using standard cut-points [1,14]. A single-item global question ("do you think you are professionally burned out?") complemented the standardized subscales.

Categorical variables are presented as n (%) with the applicable denominator, since not all respondents answered every item; continuous variables as mean ± SD or median [IQR] according to distribution. Emotional exhaustion and depersonalization were non-normally distributed (median [IQR]); personal accomplishment approximated a normal distribution (mean ± SD). Associations between MBI scores and categorical variables were tested with Mann-Whitney U (two groups) or Kruskal-Wallis (more than two groups) tests on the individual respondent dataset (n=88, pairwise exclusion of missing values); categorical associations were tested with chi-square, and correlations with Spearman's coefficient. Two-tailed $p<0.05$ was considered significant. Analyses were performed in Python (SciPy, pandas). The survey was anonymous and voluntary, involved no clinical trial or identifiable data, and the authors declare no conflict of interest or external funding.

3. RESULTS

3.1 Participant characteristics

Eighty-eight practitioners completed the questionnaire (71/88 male, 80.7%; median age 36 years [IQR 33-47], mean 40.1 ± 10.8). Among respondents reporting each item, 61/85 (69.3%) were married, with a median of 2 dependent children [IQR 0-2, n=73]. Professional status (n=86) was distributed between academic staff (37.2%), specialists (36.1%), and residents-in-training (26.7%). Years of experience (n=86) were bimodal: 32.6% had under 5 years and 33.7% over 15 years (45.3% over 10 years). Most respondents practiced at a university hospital (74/85, 87.1%), followed by private practice (9.4%) and regional hospitals (3.5%). Weekly working hours exceeded 45 hours for 69.0% of respondents (n=84), including 28.6% over 72 hours. Full characteristics are in Table 1.

Table 1: Sociodemographic and occupational characteristics (n=88 unless indicated)

Characteristic	n (%) or median [IQR]
Sex (n=88): Male / Female	71 (80.7) / 17 (19.3)
Age, years, median [IQR]	36 [33-47]
Marital status (n=85): Married / Single / Divorced	61 (69.3) / 22 (25.0) / 2 (2.3)
Dependent children, median [IQR] (n=73)	2 [0-2]
Professional status (n=86): Academic / Specialist / Resident	32 (37.2) / 31 (36.1) / 23 (26.7)
Experience (n=86): <5y / 5-10y / 10-15y / >15y	28 (32.6) / 19 (22.1) / 10 (11.6) / 29 (33.7)
Practice setting (n=85): University / Private / Regional	74 (87.1) / 8 (9.4) / 3 (3.5)
Weekly hours (n=84): <35 / 35-45 / 45-72 / >72	5 (6.0) / 21 (25.0) / 34 (40.5) / 24 (28.6)

3.2 Burnout prevalence and awareness

Nearly all respondents (83/85, 97.6%) had previously heard of burnout, and 74/85 (87.1%) reported having personally experienced burnout symptoms. After completing the MBI, 31/86 (36.0%) self-identified as currently burned out, 43/86 (50.0%) considered it possible, and 12/86 (14.0%) did not. Median MBI scores were 25 [IQR 17-42] for emotional exhaustion, 6 [IQR

3-15] for depersonalization, and a mean of 34.7 ± 8.01 for personal accomplishment (non-normally versus approximately normally distributed, respectively). High-severity levels were observed in 42.5% for emotional exhaustion, 35.6% for depersonalization, and 39.1% for low personal accomplishment (Table 2, Figure 1).

Table 2: Distribution of MBI subscale scores (n=87)

MBI subscale	Median [IQR] or Mean±SD	Low, n (%)	Moderate, n (%)	High, n (%)
Emotional exhaustion	25 [17-42]	23 (26.4)	27 (31.0)	37 (42.5)
Depersonalization	6 [3-15]	38 (43.7)	18 (20.7)	31 (35.6)
Personal accomplishment	34.7±8.01*	34 (39.1)	27 (31.0)	26 (29.9)

*Mean ± SD (approximately normal distribution); other subscales reported as median [IQR]. For personal accomplishment, "low" denotes greater severity.

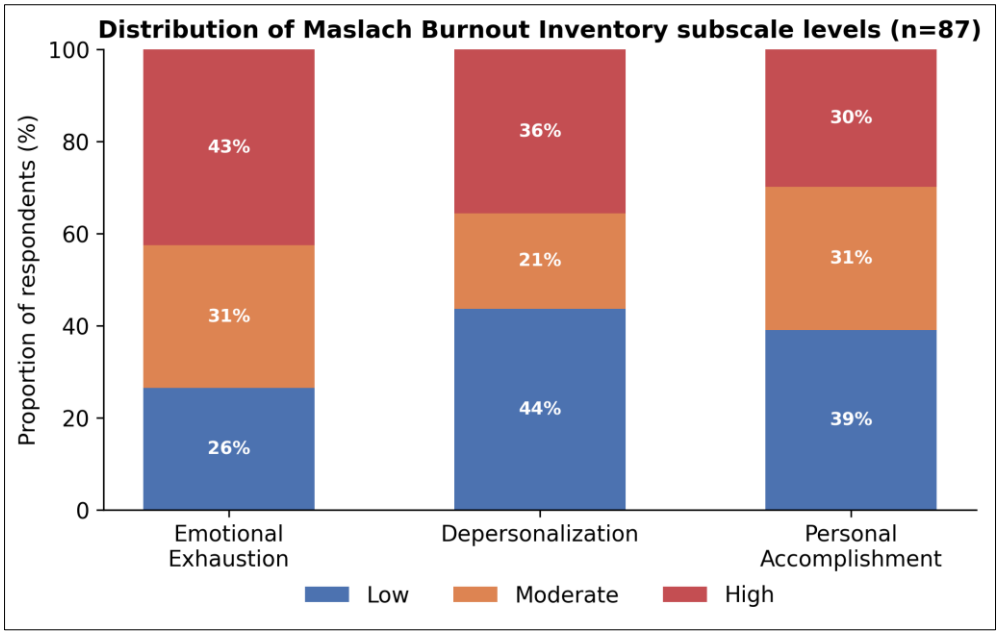


Figure 1: Distribution of MBI subscale severity levels (n=87)

3.3 Associated factors

Emotional exhaustion did not differ significantly by sex, marital status, professional status, experience, practice setting, or working hours (all $p>0.05$), though female respondents showed a numerically higher median score (39 versus 24). Personal accomplishment increased significantly with experience ($p=0.032$, from a median of 33-34 under 10 years to 40 over 15 years) and correlated with age ($\rho=0.229$, $p=0.034$). As expected for a validated construct, the three MBI subscales correlated with each other: emotional exhaustion with depersonalization ($\rho=0.658$, $p<0.001$), and both inversely with personal accomplishment ($\rho=-0.276$ and $\rho=-0.253$, respectively, both $p<0.05$).

Current career orientation was significantly associated with all three MBI dimensions (Table 3). Respondents who described their work as a purely instrumental activity ("egoist," n=16) had higher emotional exhaustion (median 39 versus 23.5-24 for "activist" and "careerist" respondents, $p=0.047$), higher depersonalization (median 12.5 versus 5-6, $p=0.030$), and lower personal accomplishment (median 29.5 versus 36.5-38, $p=0.049$) than those retaining a vocational or career-oriented framing. Initial career orientation was also associated with depersonalization: respondents who entered the profession as a vocation ("activist") had markedly lower scores than those who entered it as a path to career success ("careerist") (median 4 versus 10, $p=0.009$).

Table 3: Bivariate associations with MBI subscale scores (p-values)

Variable	EE	DP	PA
Sex	0.072	0.472	0.280
Marital status	0.937	0.657	0.335
Professional status	0.107	0.359	0.157
Years of experience	0.402	0.139	0.032*
Practice setting	0.231	0.338	0.254
Weekly working hours	0.245	0.743	0.746

Career orientation, initial	0.237	0.009*	0.399
Career orientation, current	0.047*	0.030*	0.049*

EE: emotional exhaustion; DP: depersonalization; PA: personal accomplishment. *p<0.05.

3.4 Stressors, symptoms, and coping

The leading perceived stressors were excessive workload (82.6%), insufficient staffing (66.3%), poor departmental organization and lack of resources (65.1% each), and unsatisfactory pay-to-effort ratio (64.0%) (Figure 2). Respondents most commonly felt irritable (62.8%), dissatisfied (53.3%), or sad (36.0%) in response to stress. Sleep disturbance was reported by 78.8% (n=80) and neurovegetative symptoms by 60.0%. Regarding coping, 60.7% reported stress affecting their relationships, 36.9% considered career change, 21.4% regretted their specialty choice, and 4.8% (4/84) reported suicidal ideation related to occupational stress. At career entry, respondents were evenly split between vocational ("activist," 50.6%) and career-oriented ("careerist," 49.4%) motivations; by the time of the survey, a purely instrumental view ("egoist") had emerged in 20.2% of respondents, suggesting a drift toward disengagement over time that, as shown above, tracked closely with burnout severity.

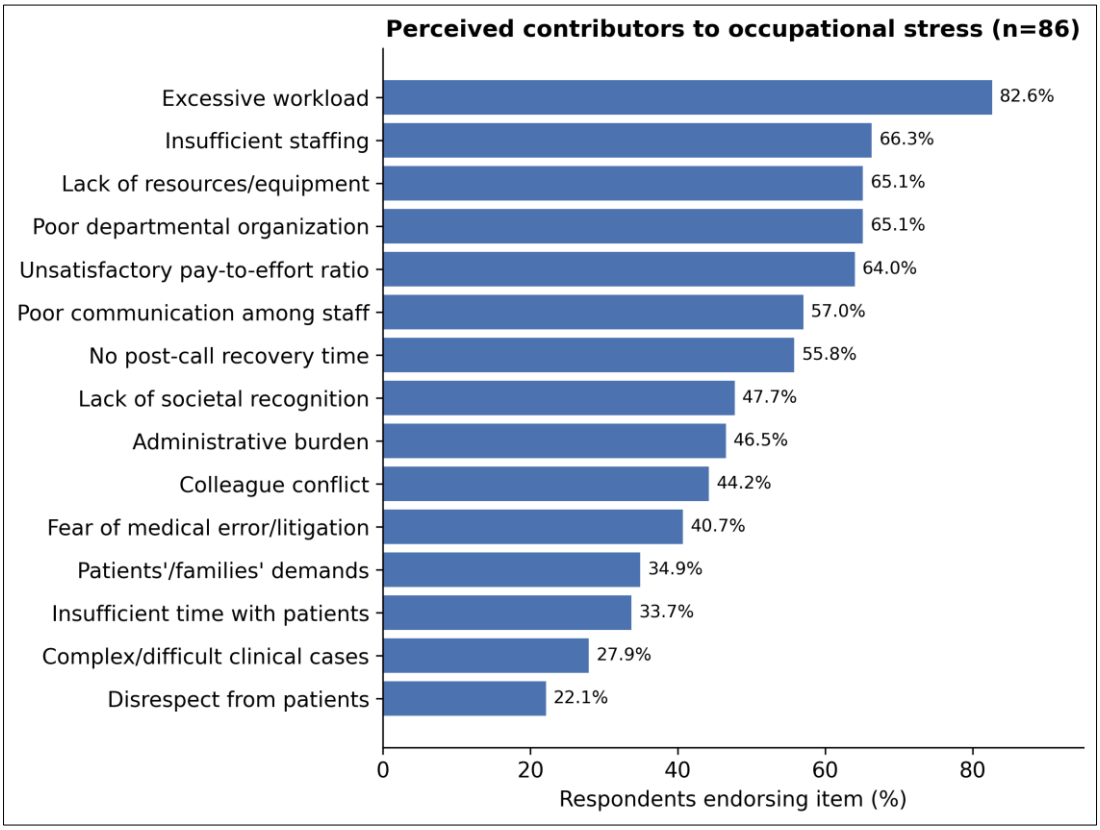


Figure 2: Perceived contributors to occupational stress (n=86)

4. DISCUSSION

This survey found a high prevalence of burnout among Moroccan anesthesiologists and intensivists: high emotional exhaustion in 42.5%, high depersonalization in 35.6%, and low personal accomplishment in 39.1%. Nearly nine in ten practitioners had already experienced burnout symptoms, and over a third self-identified as currently burned out after completing a standardized instrument specifically designed to make this state explicit. These figures place Moroccan anesthesia and intensive care practitioners among the more heavily affected groups described in the international literature for this specialty.

4.1 Comparison with the literature

Our emotional exhaustion prevalence (42.5% high) is broadly consistent with, and in some analyses exceeds, pooled estimates from European and North American anesthesiologists, where a recent meta-analysis found emotional exhaustion and depersonalization means exceeding Maslach's normative population, with regional variation across Western Europe, Eastern Europe, and North America [8]. Our findings are numerically closer to the higher prevalence reported in a Palestinian survey of anesthesia and intensive care teams (emotional exhaustion 71.2%, depersonalization 59.0%) [9], and to Moroccan data from other high-acuity specialties, where a 2025 study of oncology nurses and technicians in Rabat found severe burnout in 61.5% of participants [13]. Together, these

regional data suggest that burnout in Moroccan and broader regional healthcare settings may be driven by structural factors, namely chronic understaffing, resource constraints, and heavy workload, that compound the intrinsic demands of high-acuity specialties described in higher-resource health systems.

4.2 Factors associated with burnout

Personal accomplishment increased with experience and age, consistent with the literature suggesting that accumulated clinical mastery and professional identity consolidation buffer against loss of accomplishment even when emotional exhaustion persists [8,15]. This supports targeting mentorship and skill-consolidation programs at early-career practitioners, including residents-in-training, as a specific lever independent of workload-reduction measures. The lack of association between working hours and any MBI dimension, despite workload being the top-cited stressor, is noteworthy and suggests that self-reported weekly hours may not capture on-call frequency, case unpredictability, administrative burden, or workload intensity, all of which may be more proximally related to exhaustion than raw duration alone [6,7].

The association between current career orientation and all three MBI dimensions was one of the strongest observed in this cohort, with respondents holding a purely instrumental view of their profession showing markedly worse scores across exhaustion, depersonalization, and accomplishment than those retaining a vocational or career-oriented framing. Because this orientation was measured concurrently with the MBI, the direction of this association cannot be established: a purely instrumental outlook may be a consequence of accumulated burnout rather than a predisposing factor, or both may reflect a shared underlying process of disengagement. Regardless of causal direction, this finding suggests that shifts in professional identity and meaning may be a useful clinical marker of burnout severity, worth monitoring alongside standardized instruments in occupational health follow-up.

The overall ranking of stressors (workload, staffing, organization, resources, pay) mirrors structural, system-level drivers described in the wider critical care and anesthesiology literature, as opposed to purely individual or dispositional factors [3,6]. This pattern is consistent with the Maslach model, in which burnout is conceptualized primarily as a mismatch between job demands and available resources [1], and aligns with broader Moroccan evidence of workforce strain compounded during and after the COVID-19 pandemic [10,11]. From a policy standpoint, these findings support prioritizing organizational interventions, namely workforce expansion, protected post-call recovery time, streamlined administrative processes, and structured psychological support, over purely individual resilience-building programs [3,5]. The 4.8% prevalence of work-related suicidal ideation, while based on a single non-validated item that cannot substitute for formal psychiatric screening, signals that burnout in this population may extend to serious psychological distress in a minority of practitioners, reinforcing the case for accessible, confidential support structures embedded within anesthesia and intensive care departments, a solution several respondents proposed spontaneously in free-text comments.

4.3 Strengths, limitations, and implications

This study has several strengths, including its focus on a specialty not previously studied as a distinct population in Morocco, its use of the validated MBI-HSS instrument, and its inclusion of practitioners across practice settings and the full seniority spectrum. Limitations include the cross-sectional design, which precludes causal inference; the sample size (n=88), which limited power for subgroup analyses, notably the small regional-hospital and private-practice strata, and precluded multivariable adjustment, so associations should be interpreted as exploratory; variable item-level denominators (73 to 88); possible selection or non-response bias inherent to voluntary surveys; recall and social-desirability bias in self-reported measures; and a geographic scope limited to Morocco, though the structural stressors identified are likely shared across comparable resource-constrained settings in the region. These findings support concrete institutional actions: workload and staffing audits with protected post-call recovery; confidential psychological support and screening programs; mentorship for early-career practitioners; and longitudinal, multicenter studies incorporating multivariable regression and validated psychological comorbidity screening to clarify causal pathways and evaluate interventions, including the direction of the association between professional disengagement and burnout severity identified here.

5. CONCLUSION

Burnout is highly prevalent among Moroccan anesthesiologists and intensivists, affecting more than one in three practitioners at a high level of emotional exhaustion and nearly nine in ten at some point during their career. Workload, staffing, organizational, and financial factors were the principal perceived drivers, and clinical experience appeared protective against loss of personal accomplishment. These results call for coordinated institutional and national-level interventions targeting the structural determinants of burnout in this high-acuity specialty, alongside accessible psychological support for affected practitioners.

Declarations

Ethics: the survey was anonymous and voluntary; completion implied informed consent. No clinical trial, animal research, or identifiable patient data were involved. Conflict of interest: none declared.

Funding: none. Authors' contributions: H.B. and A.J. designed the study, collected and analyzed data, and drafted the manuscript; K.M. supervised the study and critically revised the manuscript; all authors approved the final version. Data availability: available from the corresponding author on reasonable request. Acknowledgements: the authors thank all practitioners who participated in this survey.

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