

Article

# Assessment of burnout levels in association with personal and occupational characteristics of pharmacists in Lebanon amid the economic crisis and ongoing conflicts

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**Abstract: Background:** Burnout, recognized by the World Health Organization as an occupational phenomenon, is prevalent among health workers, including pharmacists. It results from prolonged work-related stress, leading to cumulative emotional exhaustion that can impair cognitive, emotional, and behavioral responses. This can adversely impact interactions with coworkers and clients, posing risks to patient safety. In Lebanon, the compounded effects of the ongoing economic crisis and recent conflicts may have intensified burnout across all sectors, particularly among healthcare professionals such as pharmacists. **Objectives:** This study focused on Lebanese pharmacists to evaluate how the economic crisis and ongoing conflicts influence burnout levels and to explore associations between burnout and sociodemographic and work-related characteristics. **Methods:** A cross-sectional survey was conducted with 277 pharmacists in Lebanon from July to October 2024. Data were collected through a structured self-reported questionnaire focusing on sociodemographic information, work-related factors, and burnout symptoms. Data were analyzed using descriptive and inferential statistical methods. **Results:** Of the pharmacists surveyed, 24.2% reported experiencing burnout, 35.4% expressed frustration with daily tasks, and 30.0% felt overwhelmed by work responsibilities. Burnout was more prevalent among pharmacists aged 25 to 35, those who were single, participants with a perceived lower-than-average economic status, and those working over 40 h per week. Additionally, pharmacists with six to ten years of experience reported higher burnout levels than those with over ten years of practice. **Conclusion:** Findings underscore the significant impact of sociodemographic and economic factors on burnout levels among pharmacists in Lebanon. Significant associations were found between burnout and age, marital status, economic status, years of experience, and weekly working hours. Targeted interventions to manage stress and prevent burnout are essential to promote workforce stability and uphold healthcare quality during crises.

**Keywords:** burnout; pharmacists; economic crisis; conflict; Lebanon

## 1. Introduction

Burnout, defined as an individual's response to chronic work stress, evolves gradually and can become a persistent condition with significant health implications (Montero-Marín, 2016). This syndrome can negatively affect cognitive, emotional, and attitudinal functioning, often leading to adverse behaviors toward coworkers, clients, and the profession (Maslach, 2006). Rather than being a professional failing,

burnout may be primarily triggered by specific job-related factors (Bouza et al., 2020). Poorly structured work environments can diminish employees' energy and psychological resilience, presenting serious psychosocial occupational hazards with considerable costs for individuals and companies (de la Vega Sánchez et al., 2023; Han et al., 2019; Simionato et al., 2019).

Recently, there has been a strong awareness of the value of healthcare workers' well-being and a growing call for effective interventions to mitigate burnout risk (Mulherin et al., 2023; Reed, 2023). This is crucial since burnout has been linked to patient safety concerns, such as higher death rates among hospitalized patients, increased employee turnover, and self-reported errors (Aiken et al., 2023; Al-Ghunaim et al., 2023). A recent systematic review involving 11,306 pharmacists across eight nations indicated a burnout rate of 51% (Dee et al., 2023), with contributing factors including excessive workloads, extended shifts, a lack of knowledge and expertise, and a poor work-life balance. Since the onset of the Coronavirus Disease-2019 (COVID-19) outbreak, the stress levels reported by pharmacists have intensified (Dee et al., 2023; Johnston et al., 2023), fueled by inadequate funding, medication shortages, deficits in the workforce, and growing demands (Awada et al., 2023; Hatem et al., 2023). Pharmacists experiencing high levels of burnout may perform less efficiently, leading to a higher likelihood of errors (Melnik et al., 2023). Although often overlooked, pharmacists are just as likely to experience burnout as physicians and nurses due to their role in patient safety assurance and healthcare outcomes (Abilmona et al., 2023; Cohen et al., 2023). They also navigate high-pressure environments with substantial career expectations, causing stress, impaired mental health, depression, and burnout (Reed, 2023; Weiss et al., 2024). Additional factors include years of service, education, professional designation, monthly income, and work shift patterns (Panagioti et al., 2017). As a result, burnout can influence pharmacists' attitudes toward service provision and turnover intentions. Although not established, pharmacist burnout may result in increased medical expenses, medical errors, longer recovery periods, lower patient satisfaction ratings, and worse care quality (De Tran et al., 2024; McQuade et al., 2020). These challenges may also lead to higher absenteeism, turnover rates, and decreased productivity (Hagemann et al., 2020; Weiss et al., 2024). Moreover, pharmacists experiencing burnout have a higher risk of relationship problems, substance misuse, desperation, and suicidal thoughts (Kraus et al., 2020; Prasad-Reddy et al., 2021).

In 2018, a survey found that 53.2% of pharmacists reported significant burnout levels on at least one subscale of the Maslach Burnout Inventory (Durham et al., 2018). Although organizational factors like job overload or position uncertainty primarily contribute to burnout, most solutions focus on the individual level. Research has recommended strategies to lessen burnout, including workplace modifications, promoting better work-life balance, showing gratitude to staff members, and supporting pharmacists' advancement (Aiken et al., 2023; Chong et al., 2023; Hatem et al., 2021). The connection between burnout and work efficiency may be understated, as burned-out employees often use "performance protection" techniques to prioritize essential tasks while neglecting low-priority duties, such as engaging with patients and customers (Hagemann et al., 2020; Melnik et al., 2023).

In Lebanon, the ongoing economic crisis and recent conflicts may have exacerbated burnout levels across all sectors, with healthcare professionals, particularly pharmacists, bearing significant impacts (Hatem and Goossens, 2022). The severe economic downturn has led to inflation, currency devaluation, and reduced purchasing power, which has limited access to essential medications and increased pharmacists' workload as they manage critical shortages and patient frustrations (Sukarieh et al., 2024). Concurrently, regional conflicts have intensified healthcare demands, with pharmacists facing heightened responsibilities amidst dwindling resources and staffing shortages (Fakhoury and Aitken, 2024). This dual burden has placed pharmacists under immense pressure, challenging balancing professional obligations with personal resilience. These compounded stressors can increase burnout risk due to emotional strain from patient interactions and the mental toll of operating within an unstable, high-stress environment. Therefore, this study aims to investigate the burnout levels among pharmacists in Lebanon during the economic crisis and ongoing conflicts and to associate burnout with their socio-demographic and work-related characteristics.

## **2. Methods**

### **2.1. Study design**

A cross-sectional study was conducted over four months, from July to October 2024, to evaluate burnout levels among pharmacists in Lebanon amidst the ongoing economic crisis and regional conflicts. The study protocol was registered in the ClinicalTrials.gov registry before data analysis and is publicly accessible (reference: NCT06599359).

### **2.2. Study sample**

#### **2.2.1. Inclusion and exclusion criteria**

The study targeted pharmacists and pharmacy students residing and working in Lebanon for at least the duration of the study. Inclusion criteria were not restricted by sex, race, age, or nationality. Exclusions comprised non-pharmacists, unemployed pharmacists or pharmacy students, individuals who declined participation, and those who refrained from providing informed consent.

#### **2.2.2. Sample size calculation**

The required sample size was calculated using the OpenEpi program (version 3.01) to meet the study objectives. Given that this is the first study of its kind in Lebanon during this period, an anticipated frequency of interest of 50% was assumed. The estimated population of pharmacists and pharmacy students was approximated to be 20,000 participants. This yielded a minimum sample of 264 participants with a 95% confidence interval, a precision of 6%, and a power of 80%. To account for a potential 5% rate of loss-to-follow-up or incomplete responses, we aimed to recruit 277 pharmacists and pharmacy students.

### **2.3. Study tool and data collection**

A structured self-reported questionnaire was used for data collection. The questionnaire design and questions were prepared after a thorough literature review (He et al., 2023; Mat Rifin and Danaee, 2022). Third-party experts reviewed the questionnaire (senior investigators first from the European Medicines Agency and the second from the Institute of Public Health of the University of Porto) to refine it and minimize misunderstandings and misleading questions. During this phase, modifications were made to enhance clarity, modifying five questions and deleting one. A Google Form was created for participants to fill out online. It was distributed across various social media platforms to encourage participation. Completing the questionnaire typically required approximately 5–7 min of the participants' time. The questionnaire (available in English) was divided into three sections: The first section collected the socio-demographic characteristics of the participants, including their age, sex, highest level of education (student, bachelor's degree, master's degree, PharmD, PhD), marital status (single, married, divorced/widowed), work sector (public or private), and perceived economic status (below average, average, above average). The second section focused on work-related characteristics. Participants were asked about their work location, type of work (community pharmacist, hospital pharmacist, clinical pharmacist, pharmaceutical company, academic/university, non-governmental organization, non-pharmaceutical company/organization), employment status (full-time or part-time), current position (managerial, entry-level, pharmacy owner), average working hours per week ( $\leq 24$  h, 25–40 h,  $> 40$  h), salary currency (fully in United States Dollars, fully in Lebanese Pounds, mixed United States Dollars and Lebanese Pounds), years of practice ( $\leq 5$  years, 6–10 years,  $> 10$  years), availability of a work-from-home option, how frequently they worked from home, and whether they felt more productive working from home compared to the office. The third section was designed to measure work burnout. Participants were asked to rate the extent to which they agreed with a series of statements on a Likert scale from 1 to 5, with 5 representing the highest level of agreement and decreasing incrementally down to 1, which represents the lowest level of agreement. These statements explored whether participants felt burned out from their work, frustrated by going to work every day, overwhelmed by their responsibilities, detached from their work, unable to meet work expectations, lacking time to relax after work, experiencing work as too demanding, feeling that their job was affecting their mental health, not allowed enough time with their family and whether their job was negatively impacting their personal life.

### **2.4. Ethical considerations**

The study protocol, questionnaire, and consent form underwent a thorough review and received approval from the institutional review board of the Faculty of Pharmacy at the Lebanese University (reference: 19/24/D). Participants provided digital informed consent in the first section of the survey by checking three boxes confirming (1) their understanding that participation was voluntary and anonymous, (2) their understanding that data would be kept confidential, and (3) their agreement to participate in the study. They were clearly informed of their right to withdraw at any

time. No financial incentives were offered, and results were used exclusively for research.

## 2.5. Statistical analysis

Statistical analyses were performed using Statistical Package for Social Sciences (SPSS) version 29. Categorical variables are presented through frequencies and percentages. These variables included the socio-demographic and work-related characteristics of the participants. The age and individual, and total burnout scores are presented through means and standard deviations after transforming them over 2 for the individual statements. We performed a reliability assessment to check which statements to include by checking the inter-item correlations and Cronbach’s alpha value. Bivariate analyses (one-way ANOVA) took the total burnout score as the dependent variable and the baseline characteristics as independent variables. A  $p$ -value  $< 0.05$  was considered statistically significant.

## 3. Results

### 3.1. Socioeconomic characteristics of the sample

**Table 1** displays the socioeconomic characteristics of the study sample. The mean age of the participants was 29.5 (9.0) years, with most (46.9%) aged between 25 and 35 years and a smaller proportion above 35 years (17.7%). The sample included more females (65.3%) than males (34.7%). Most respondents (62.5%) were single, 33.6% were married, and 4.0% were divorced or widowed. Most participants lived with their family (78.0%), 18.1% lived alone, and 4% lived with friends or others. Educational levels varied, with 47.4% holding a bachelor’s degree in pharmacy, 22.4% a master’s degree, 16.2% a PharmD, and 10.5% still studying. Among participants, 69.0% attended private universities, while 31.0% attended public universities. When asked about their perceived economic status, 12.6% identified as having a below-average status, 76.2% average, and 11.2% more than average.

**Table 1.** Distribution of the sociodemographic characteristics of the participants.

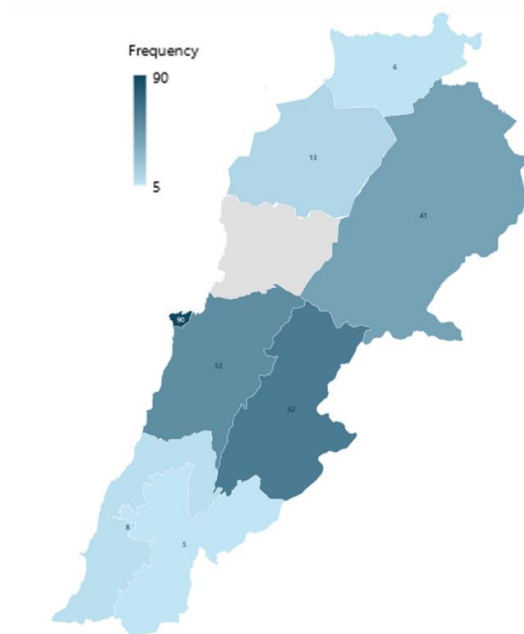
Socio-demographic characteristics ( $N = 277$ )		Frequency (%)
Age (years)	Mean (SD)	29.5 (9.0)
Age group	Less than 25	98 (35.4%)
	25–35	130 (46.9%)
	More than 35	49 (17.7%)
Sex	Male	96 (34.7%)
	Female	181 (65.3%)
Marital status	Single	173 (62.5%)
	Married	93 (33.6%)
	Divorced/Widowed	11 (4.0%)
Living arrangement	Alone	50 (18.1%)
	With family	216 (78.0%)
	With friends/other	11 (4.0%)

**Table 1.** (Continued).

Socio-demographic characteristics ( <i>N</i> = 277)	Frequency (%)	
Highest level of education	Bachelor's Degree in Pharmacy	131 (47.3%)
	Master's Degree	62 (22.4%)
	Pharm D	45 (16.2%)
	PhD	10 (3.6%)
	Student	29 (10.5%)
Type of university	Private university (LIU, LAU, USJ, BAU)	191 (69.0%)
	Public University (LU)	86 (31.0%)
Perceived economic status	Less than average	35 (12.6%)
	Average	211 (76.2%)
	More than average	31 (11.2%)

### 3.2. Work-related characteristics

**Figure 1** presents a visual representation of work locations, with pharmacists concentrated primarily in Beirut ( $n = 90$ ; 32.5%), followed by Beqaa ( $n = 62$ ; 22.4%) and Mount Lebanon ( $n = 52$ ; 18.8%). Other regions had lower representation, such as Baalbek-Hermel ( $n = 41$ ; 14.8%), North governorate ( $n = 13$ ; 4.7%), South governorate ( $n = 8$ ; 2.9%), Akkar ( $n = 6$ ; 2.2%), and Nabatieh ( $n = 5$ ; 1.8%).



**Figure 1.** Map showing the distribution of participants' work location per governorate.

**Table 2** details the work-related characteristics of the study sample. Most respondents are community pharmacists, making up 59.6% of the sample. Hospital pharmacists and those working for non-governmental organizations each represent 11.6%, while 7.2% are clinical pharmacists. Academic or university roles account for 9.7%, followed by pharmaceutical company employees at 15.5% and those in non-pharmaceutical companies or organizations at 4.7%. Employment was mainly full-

time (65.7%), with 34.3% working part-time. Most respondents held managerial positions (47.7%), followed by entry-level roles (40.4%) and pharmacy owners (11.9%). Working hours varied, with 47.7% working 25–40 h per week, 31.4% over 40 h, and 20.9% up to 24 h. Regarding salary currency, 55.6% were paid fully in USD, 36.8% in a mix of USD and LBP, and 7.6% in LBP. Most pharmacists had five years or less of experience (61.0%), 18.8% had six to ten years, and 20.2% had over ten years. Only 25.6% had the option to work from home, with 74.4% unable to do so. Among those who did, 47.9% did it sometimes, while 21.9% and 11.0% rarely or never did, respectively. Around 56.0% reported higher productivity at home, while 44.4% found the office more productive.

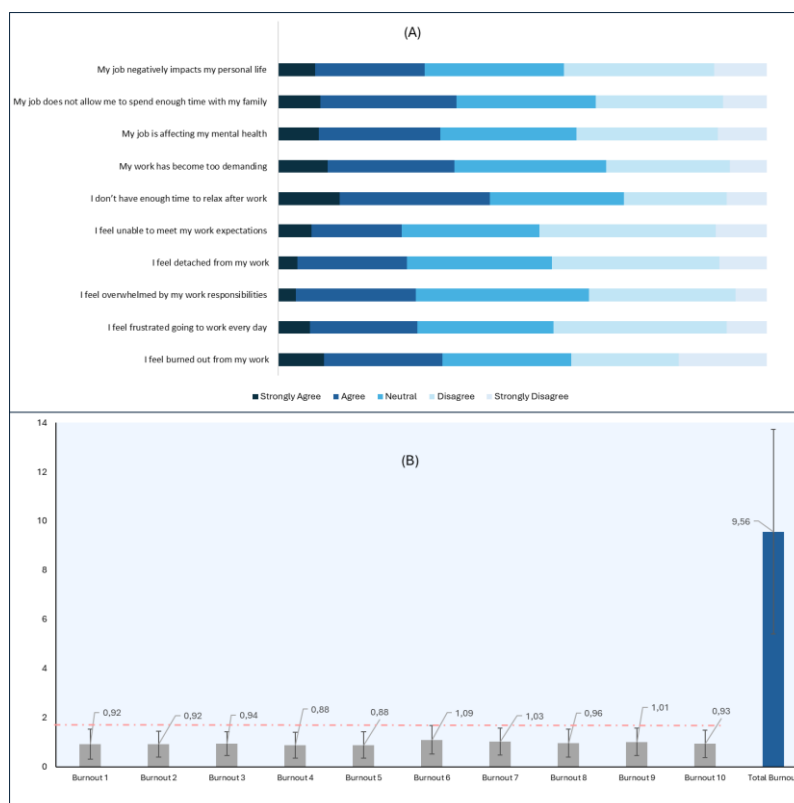
**Table 2.** Distribution of the work-related characteristics of the participants.

<b>Work-Related Characteristics (<i>N</i> = 277)</b>	<b>Frequency (%)</b>	
Type of Work	Community Pharmacist	165 (59.6%)
	Hospital Pharmacist	32 (11.6%)
	Clinical Pharmacist	20 (7.2%)
	Academic/University	27 (9.7%)
	Non-Governmental Organization	32 (11.6%)
	Non-Pharmaceutical Company/Organization	13 (4.7%)
	Pharmaceutical Company	43 (15.5%)
Employment Status	Full-time worker	182 (65.7%)
	Part-time worker	95 (34.3%)
Current Position	Entry-level position	112 (40.4%)
	Managerial position	132 (47.7%)
	Pharmacy Owner	33 (11.9%)
Average Working Hours per Week	≤ 24 h	58 (20.9%)
	> 40 h	87 (31.4%)
	25–40 h	132 (47.7%)
Salary Currency	Fully in LBP	21 (7.6%)
	Fully in USD	154 (55.6%)
	Mix USD and LBP	102 (36.8%)
Years of Practice	≤ 5 years	169 (61.0%)
	> 10 years	56 (20.2%)
	6–10 years	52 (18.8%)
Possibility of teleworking	Yes	71 (25.6%)
	No	206 (74.4%)
Frequency of teleworking ( <i>N</i> = 71)	Always	4 (5.5%)
	Often	10 (13.7%)
	Sometimes	35 (47.9%)
	Rarely	16 (21.9%)
	Never	10 (11.0%)
Location of higher productivity ( <i>N</i> = 71)	At home	40 (55.6%)
	In the office	31 (44.4%)

### 3.3. Burnout assessment

#### 3.3.1. Description of participants' burnout levels

**Figure 2A** outlines pharmacists' self-reported burnout indicators using a 5-point Likert scale. Nearly a quarter (24.2%) felt burned out, while others reported frustration about daily work (35.4%) and being overwhelmed by work responsibilities (30.0%). About 36.1% struggled to meet work expectations, 30.7% reported insufficient relaxation time, and a similar percentage (31.0%) felt that job demands were too high. Concerns about mental health were noted by 28.9% of participants, with 28.5% reporting limited family time due to work and 30.7% feeling their personal lives were negatively affected. Reliability analysis confirmed that these items align strongly, with a Cronbach's alpha of 0.916 and positive inter-item correlations. **Figure 2B** illustrates the individual burnout item mean scores and the mean computed burnout score. The highest mean scores were observed for items 6 (1.09) and 7 (1.03), while the lowest mean scores were recorded for levels 4 and 5, both at 0.88. After computing the individual scores, the mean total burnout score for the participants was 9.56 (4.16).



**Figure 2.** Pharmacist self-reported burnout indicators. **(A)** Distribution of responses across burnout-related items using a 5-point Likert scale. **(B)** Scores for individual items and total burnout score.

#### 3.3.2. Association between total burnout score and participants' sociodemographic characteristics

**Table 3** presents the association between the total burnout score and participants' sociodemographic characteristics. Burnout scores were significantly higher among those between 25 and 35 years (9.95 (4.23)) and those under 25 years (9.88 (3.89))

compared to those above 35 (7.82 (4.12);  $p = 0.05$ ). A significantly higher total burnout score was noted among single individuals (10.14 (4.04)) compared to married (8.63 (4.21)) and divorced or widowed participants (8.00, SD = 4.13);  $p = 0.008$ . Participants who perceived their economic status as below average had significantly higher burnout scores (10.72 (3.87)) than those with an average (9.60 (4.12)) or more than average status (7.87 (4.29));  $p = 0.019$ . No statistically significant differences emerged across other categories in the remaining variables. Males had a slightly higher mean burnout score (9.27 (4.37)) compared to females (9.7 (4.04)); however, this was not statistically significant ( $p = 0.407$ ). Those living with friends or others had higher scores (10.45 (5.89)) than participants living alone (10.03 (3.76)) or with family (9.40 (4.15));  $p = 0.483$ . Education level did not reveal significant differences, with PharmD holders scoring highest (10.04 (4.98)), followed by students (9.65 (3.00)), bachelor's degree holders (9.54 (3.99)), master's degree holders (9.48 (4.36)), and PhD holders scoring lowest (7.60 (4.04));  $p = 0.584$ . Public university students had slightly higher burnout scores (9.83 (4.41)) than private university students (9.42 (4.04));  $p = 0.451$ .

**Table 3.** Association between total burnout score and participants' sociodemographic characteristics.

Sociodemographic characteristics		Mean (SD)	<i>p</i> -value
Age group	Less than 25	9.88 (3.89)	0.005
	25–35	9.95 (4.23)	
	More than 35	7.82 (4.12)	
Sex	Male	9.27 (4.37)	0.407
	Female	9.70 (4.04)	
Marital status	Single	10.14 (4.04)	0.008
	Married	8.63 (4.21)	
	Divorced/Widowed	8.00 (4.13)	
Living arrangement	Alone	10.03 (3.76)	0.483
	With family	9.40 (4.15)	
	With friends/other	10.45 (5.89)	
Highest level of education	Bachelor's degree in pharmacy	9.54 (3.99)	0.584
	Master's degree	9.48 (4.36)	
	Pharm D	10.04 (4.98)	
	PhD	7.60 (4.04)	
	Student	9.65 (3.00)	
Type of university	Private University (LIU, LAU, USJ, BAU)	9.42 (4.04)	0.451
	Public University (LU)	9.83 (4.41)	
Perceived economic status	Less than average	10.72 (3.87)	0.019
	Average	9.60 (4.12)	
	More than average	7.87 (4.29)	

### 3.3.3. Association between total burnout score and participants' work-related characteristics

**Table 4** presents total burnout scores across various work-related characteristics. No statistically significant differences were noted between total burnout scores across

the various work locations ( $p = 0.860$ ). Regarding work type, hospital and community pharmacists exhibited the highest burnout scores, while those in academic settings or working in non-pharmaceutical companies had the lowest. Nevertheless, no statistically significant differences were found when comparing each type of work individually with others ( $p > 0.05$ ). Full-time workers had higher total burnout scores (9.78 (4.27)) than those working part-time (9.12 (3.92)), with no significant difference ( $p = 0.210$ ). Higher burnout scores were noted among those in entry-level (9.90 (3.74)) and managerial positions (9.62 (4.31)) compared to pharmacy owners (8.10 (4.66)) with no statistical significance across positions ( $p = 0.089$ ). Nonetheless, those working more than 40 h had significantly higher total burnout scores (10.33 (4.65)) compared to those working fewer hours [25–40 h (9.46 (3.92)) and 24 h or less (8.60 (3.72))],  $p = 0.046$ ). Pharmacists with six to ten years of experience reported a slightly higher mean score (9.88 (4.04)) than those with 5 years or less (9.86 (4.09)) but significantly higher than those with more than 10 years of experience (8.32 (4.32));  $p = 0.045$ . No differences in total burnout scores were noted across the remaining variables' categories, such as salary currency, teleworking possibility and frequency, and location with higher productivity ( $p > 0.05$ ).

**Table 4.** Association between total burnout score and participants' work-related characteristics.

Work-Related Characteristics		Mean (SD)	p-value
Work location	Beirut	9.23 (4.72)	0.860
	Beqaa	9.23 (3.35)	
	Mount-Lebanon	10.26 (3.99)	
	Baalbek-Hermel	9.75 (4.45)	
	North governorate	9.38 (3.50)	
	South governorate	10.37 (3.03)	
	Akkar	10.25 (3.17)	
	Nabatieh	8.60 (6.70)	
Type of work	Community Pharmacist	9.63 (4.33)	0.697
	Others	9.44 (3.92)	
	Hospital Pharmacist	10.20 (4.28)	0.351
	Others	9.47 (4.15)	
	Clinical Pharmacist	9.15 (4.42)	0.651
	Others	9.59 (4.15)	
	Academic/University	8.24 (3.05)	0.084
	Others	9.69 (4.24)	
	Non-Governmental Organization	9.62 (3.70)	0.921
	Others	9.54 (4.22)	
	Non-Pharmaceutical Company/Organization	8.11 (2.88)	0.202
	Others	9.63 (4.21)	
	Pharmaceutical Company	9.60 (4.24)	0.934
	Others	9.55 (4.16)	

**Table 4.** (Continued).

Work-Related Characteristics		Mean (SD)	p-value
Employment status	Full-time worker	9.78 (4.27)	0.210
	Part-time worker	9.12 (3.92)	
Current position	Entry-level position	9.90 (3.74)	0.089
	Managerial position	9.62 (4.31)	
	Pharmacy Owner	8.10 (4.66)	
Average working hours per week	≤ 24 h	8.60 (3.72)	0.046
	> 40 h	10.33 (4.65)	
	25–40 h	9.46 (3.92)	
Salary currency	Fully in LBP	8.66 (3.27)	0.307
	Fully in USD	9.87 (4.41)	
	Mix USD and LBP	9.25 (3.90)	
Years of practice	≤ 5 years	9.86 (4.09)	0.045
	> 10 years	8.32 (4.32)	
	6–10 years	9.88 (4.04)	
Possibility of teleworking	Yes	8.86 (3.79)	0.105
	No	9.79 (4.26)	
Frequency of teleworking (N = 71)	Always	9.87 (5.43)	0.494
	Often	7.40 (4.11)	
	Sometimes	9.15 (3.54)	
	Rarely	9.18 (3.67)	
	Never	8.43 (3.87)	
Location of higher productivity (N = 71)	At home	9.11 (3.95)	0.317
	In the office	8.71 (3.49)	

## 4. Discussion

Our study assessed the levels of burnout among pharmacists in Lebanon during the economic crisis and ongoing conflicts, examining associations between total burnout scores and their socio-demographic and work-related characteristics. Our sample showed a predominance of female pharmacists, consistent with recent estimates indicating that approximately 57% of pharmacists in Lebanon are females (Badro et al., 2020). This trend aligns with global observations of a rising female workforce in healthcare professions (Jefferson et al., 2015), possibly reflecting broader social and educational shifts encouraging female participation in these fields. The age distribution of our participants centered primarily within the 25–35 age range, in contrast with a national survey on the resilience of community pharmacists in Lebanon, where the majority were aged 30–45 (Alameddine et al., 2022). This younger demographic in our sample may signal an influx of recent graduates entering the profession amid economic uncertainties, suggesting increased interest in secure employment sectors like pharmacy. The majority of respondents in our study were community pharmacists. This finding differs from a regional survey conducted in southeastern Nigeria, where hospital pharmacists comprised the majority (IFEOMA et

al., 2021). This disparity points to regional differences in pharmacy practice patterns, possibly influenced by the unique healthcare needs, organizational structures, and professional roles within these systems. In terms of experience, most pharmacists in our study had five years or less, possibly due to our participants' younger age range and higher willingness to participate (Crilly et al., 2017). Younger professionals may be more engaged with research activities or view participation as an opportunity to contribute insights relevant to their early career challenges (Knapik et al., 2022). Moreover, the larger proportion of less-experienced pharmacists in our study could be attributed to generational workforce shifts, as recent graduates may be taking up positions more actively during economic instability, impacting the profession's experience composition and potentially influencing burnout vulnerability (Gabriel and Aguinis, 2022).

A considerable proportion of pharmacists in our sample reported experiencing burnout symptoms, with around 24.2% expressing feelings of burnout and 35.4% expressing frustration at work. Additionally, 31% reported that their job demands were overwhelming, and 28.9% noted a negative impact on their mental health. These findings align with broader trends among healthcare professionals, highlighting the elevated stress and burnout levels in the profession (Wlazło et al., 2024). Comparative data from previous studies are also noted, where research published in 2024 showed high-stress levels among early-career pharmacists, with a notable percentage feeling very stressed and reporting mental health challenges post-COVID-19 (Bradley et al., 2024), pushing them to leave their jobs (D'Alessandro-Lowe et al., 2024). Another study reported similar trends, identifying heightened stress and frustration linked to rising workplace expectations and systemic challenges that limit pharmacists' personal and family time (MacKinnon, 2023). These findings, alongside our results, reflect a growing need to address the occupational pressures pharmacists face and identify those with a higher need for support, especially in settings with high patient demands and limited support.

Significantly higher burnout scores were noted among those between 25 and 35 compared to other age ranges. This age group may be in the early to mid-career phase, transitioning from entry-level roles to positions requiring greater autonomy and decision-making. These shifts often bring additional responsibilities and pressures, potentially contributing to higher burnout (Dunford et al., 2012). In contrast, pharmacists aged 35 and above may have had more time to adapt to the unique country stressors with recurring historical challenges, such as economic volatility and regional conflicts, which could enhance their ability to develop effective coping strategies and resilience over time. Our results differ from those of a study conducted in Kathmandu Valley in Nepal, which found no significant association between age and burnout levels (Ranabhat et al., 2023). This may suggest that while age and experience may influence burnout levels, local factors—such as economic and political conditions—may also play a substantial role in shaping pharmacists' stress and coping mechanisms. Single pharmacists exhibited the highest burnout scores, followed by married and divorced/widowed pharmacists. These findings align with a meta-analysis examining sociodemographic factors and the burnout dimensions, which reported that being single or childless correlates with higher burnout levels (Cañadas-De la Fuente et al., 2018). A potential reason may be the absence of emotional and social support often

available in marriage. Singles may also face increased work responsibilities without the benefit of a partner to share emotional burdens, leading to higher burnout, given that social support can buffer stress and improve resilience (Shahwan et al., 2024; Sippel et al., 2015), both of which are essential for mitigating burnout in high-stress fields like pharmacy. Pharmacists who identified their economic status as below average reported significantly higher burnout levels than those who perceived their status as above average. This disparity may stem from the need to hold multiple jobs, exposing them to additional occupational stressors and compounding their challenges. This finding suggests that financial strain exacerbates burnout by adding layers of stress that undermine emotional resilience (Last et al., 2021; Rasdi et al., 2021). In Lebanon's current economic crisis, pharmacists facing financial hardship likely encounter compounding pressures in maintaining adequate patient care amid resource constraints and managing personal financial worries (Hatem and Goossens, 2022). This dual burden could amplify burnout symptoms, making financial support and mental health resources particularly important for this group. No statistically significant differences in burnout scores across various educational backgrounds were noted, possibly indicating that during conflicts and crises, burnout affects pharmacists similarly, irrespective of their education levels. Nonetheless, we noted that those with a PharmD reported the highest scores, possibly due to increased clinical responsibilities and expectations associated with those working in hospitals, especially with the limited capacities of healthcare centers in conflicted areas. Participants working over 40 h per week experienced higher mean burnout scores than those working fewer hours, in agreement with findings from a cross-sectional study in United States pharmacy schools, which demonstrated that extended working hours increase the risk of emotional exhaustion, depersonalization, and decreased sense of personal accomplishment (El-Ibiary et al., 2017). The elevated burnout levels among pharmacists working more than 40 h per week may stem from accumulated stress and fatigue, limiting their ability to manage job demands effectively. Conversely, pharmacists working fewer hours benefit from more recovery time, which likely helps reduce emotional fatigue (Martini et al., 2006). While our study showed a significant correlation between years of practice and burnout levels, with pharmacists in the 6 to 10-year range representing the majority of respondents and reporting one of the higher burnout scores, different findings were noted in other contexts. For instance, a research project conducted on pharmacy practices in Serbia found that they were more anxious and vulnerable to stress and had a higher degree of burnout syndrome, specifically those with 11–20 years of practice (Jocic and Krajnovic, 2014). In the Lebanese context, pharmacists with less experience often struggle to balance demanding professional responsibilities with personal life. This situation can heighten anxiety and burnout, especially if adequate support and resources are lacking. The lack of significant differences in burnout between full-time and part-time pharmacists may be due to shared stressors, such as heavy workloads, financial pressures, and limited support systems, which impact both groups similarly. Part-time pharmacists may face compressed responsibilities and financial strain, especially within Lebanon's economic crisis, resulting in burnout levels comparable to those working full-time. Additionally, the high-stakes nature of pharmaceutical work, combined with limited mental health resources, can lead to uniformly high stress regardless of hours worked.

Our study has several notable strengths. Our study can fill a critical gap by being the first to examine intention to leave, job stress, burnout, and job satisfaction, specifically among pharmacists in Lebanon during the conflict period, providing unique insights into these issues in a Lebanese context. Findings can offer practical implications that can inform policy decisions and improve practices within the pharmaceutical field. The evidence-based insights from this research guide implementing effective strategies could contribute to developing best practices for managing stress, burnout, and job satisfaction among pharmacists. However, some limitations should be considered. First, the data relied on self-reported information, which may introduce social desirability bias, potentially underestimating certain relationships. Second, the study's initial target sample size was not achieved; however, a post-hoc power analysis indicated a recalculated sample size of 275, which still allowed for meaningful analysis. Third, the cross-sectional design limits causal interpretations, as data were collected at a single time point. Finally, the study's external validity is limited, as findings may not be generalizable to populations or settings outside the study sample.

## **5. Conclusion**

This study comprehensively examines burnout, job stress, job satisfaction, and the intention to leave among pharmacists in Lebanon during a period marked by economic instability and conflicts. Our findings reveal high levels of burnout, especially among younger, single, less experienced pharmacists, those working more than 40 h per week, and those facing financial strain, underlining the significant impact of socio-demographic and work-related factors on mental health in the pharmaceutical field. These insights emphasize the need for targeted interventions to support pharmacists in managing stress and preventing burnout, which could help maintain workforce stability and healthcare quality during crises. Future research should consider longitudinal studies to explore burnout over time and better understand causality in the context of ongoing economic and political challenges. Additionally, expanding studies to other healthcare professionals could offer comparative insights into stress and burnout across medical fields in Lebanon. Developing and testing interventions, such as financial support programs, mental health resources, and flexible work policies, could be instrumental in supporting pharmacists and enhancing resilience in crisis settings.

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