**Burnout, Anxiety, and Resilience Among Nurses During Wartime: Evidence from a Cross-Sectional Study During the Iron Swords Conflict**

Tamar Shalom1, Levana Ogni2, Tamar Freud3, Osnat Bashkin4

1 Department of Health Systems Management, The College of Law and Business, Ramat Gan, Israel

2 General Medicine Division, Ministry of Health, Yirmiyahu 39, Jerusalem, Israel

3 Siaal Research Center for Family Medicine and Primary Care, Division of Community Health, Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel

4 Department of Public Health, Ashkelon Academic College, Ben-Tzvi 12, Ashkelon, Israel

**Abstract**

**Background:** The “Iron Swords” War that began in October 2023 created unprecedented challenges for Israeli healthcare workers. Nurses, who are particularly vulnerable to occupational stressors, face heightened risks of burnout and psychological distress during wartime conditions. This study examined the relationship between personal resilience and burnout among hospital nurses working during the Iron Swords War in Israel and assessed the prevalence of burnout, anxiety, and stress while identifying risk and protective factors.

**Methods:** In this cross-sectional study, an electronic questionnaire was distributed to hospital nurses working in Israeli hospitals from June 2024 to April 2025 to measure demographic characteristics, resilience using the Connor-Davidson 10-item Resilience Scale (CD-RISC-10), anxiety and stress using the Depression, Anxiety, and Stress Scale (DASS-21), and burnout using the Copenhagen Burnout Inventory (CBI). Mediation analysis was conducted using the PROCESS macro to examine the relationships among anxiety, stress, resilience, and burnout.

**Results:** Of the 465 nurses who completed the survey, 80.6% reported extremely severe anxiety, whereas 35.4% exhibited extremely severe stress. While 53.3% showed moderate burnout levels, only 7.7% demonstrated high burnout. The mean ± standard deviation resilience score was 20.4 ± 8.2. Significant risk factors for elevated anxiety and stress included night shift work, working > 180 hours/week, and having family members in military service during the war. Mediation analysis revealed that stress partially mediated the relationship between anxiety and burnout (B = 0.3210, *p* < 0.001). Resilience showed a significant negative correlation with burnout (r = −0.282, *p* < 0.01) and demonstrated a protective effect. Multiple regression identified sex, resilience, anxiety, and stress as significant predictors of burnout, explaining 48.1% of the variance.

**Conclusions:** Despite extremely high levels of anxiety and stress, nurses maintained moderate burnout and resilience levels during wartime. The protective role of resilience and the mediating effect of stress highlight the importance of targeted interventions focusing on stress management and resilience building, particularly for high-risk groups.

**Introduction**

Healthcare workers, particularly nurses, face substantial occupational stressors that significantly impact their psychological well-being and professional functioning. These stressors contribute to elevated rates of anxiety, depression, and professional burnout, which diminish their overall quality of life across both personal and professional domains [1]. The nursing profession is especially vulnerable to these psychological challenges due to the inherent demands of patient care, emotional labor, and the complex healthcare environment in which they operate.

Burnout is a psychological condition stemming from prolonged exposure to interpersonal stressors [2]. It is defined by three core dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment [3]. This unique combination differentiates burnout from other conditions with similar symptoms, such as stress and depression [4]. Medical professionals, who are consistently exposed to emotionally overwhelming stressors when providing complex care to patients, are at high risk of burnout [5-7]. Among healthcare providers, studies have found the highest levels of burnout in the nursing sector [8-9]. Nurses are particularly prone to burnout because of predisposing factors such as rotating shift work, deployment in particularly demanding areas of work (e.g., intensive care, oncology), and a precarious work environment [5]. One of the causes of the alarming increase in nursing burnout is workload [10], with higher quantitative demands in the nurse role associated with higher levels of burnout [11-13]. In addition, patient dissatisfaction contributes to increased emotional exhaustion and burnout in nurses [14-15]. During the COVID-19 pandemic, the levels of stress and burnout among hospital staff significantly increased worldwide [16]. Emergency and intensive care nurses were at significantly higher risk of mental health disorders and work burnout compared to other healthcare workers, due to understaffing, workload, limited medical resources, and exposure to a highly contagious disease [17]. Global and national crises such as war can also increase burnout among medical staff. A prior study reported that nurses exposed to terrorism at the national level and stress due to ongoing terror attacks exhibited significantly higher levels of burnout [18].

Previous studies have shown that medical staff burnout affects the quality of patient care and increases the number of adverse events [19-20]. Nurses have frequent and direct interactions with patients and their families throughout all healthcare processes [21]. The consequences of burnout among nurses include deteriorated patient care (through decreases in care quality and patient safety), negative impacts on nurses’ mental and physical health (e.g., depression, insomnia, and irritability), and institutional problems, including increased absenteeism and burnout-related sick leave [22-23]. Burnout among nurses may also contribute to patients' dissatisfaction with their treatment, thereby leading to more complaints [24]. The latest studies on burnout consistently emphasize the need to prevent its risk factors [25-26]. Effective management of the sources of stress that contribute to burnout and promoting resilience are two of the most significant factors in the prevention of burnout [27].

Resilience is the ability to cope with difficulty, trauma, catastrophe, threat, or major stress and is considered to involve a pattern of behavior, thoughts, and actions that can be learned and developed [28]. Emotional exhaustion and depersonalization are negatively correlated with resilience, while personal achievement is positively correlated with resilience [29-31]. In the nursing profession, resilience is defined as a measure of a nurse's ability to cope with stressors and mental health threats [32]. Several studies have shown that the presence of high resilience among medical professionals has positive effects on both medical staff and patients in terms of impact on patients’ perceived quality of care and on job satisfaction among medical staff in times of health crises [33-34].

Recent research has further elucidated the complex relationships among resilience, stress, and burnout in healthcare settings [35]. A comprehensive study of 1,579 infectious disease nurses demonstrated that anxiety serves as both a direct and indirect predictor of burnout, with perceived stress acting as a significant mediator in this relationship. That research revealed that 62.13% of nurses reported high levels of burnout, with resilience serving as a crucial moderating factor that buffered the negative effects of perceived stress on emotional exhaustion. Additionally, research examining physicians working in different conflict zone proximities during periods of heightened tension found that healthcare workers in areas closer to active conflict zones report significantly higher levels of perceived danger, even though their resilience levels remain comparable to those of peers in less threatened regions [1]. This suggests that, while proximity to conflict affects threat perception, the development of resilience may be influenced by factors beyond mere geographical location, including professional training and adaptive coping mechanisms developed through exposure to high-stress medical environments.

On October 7, 2023, Hamas initiated a significant and coordinated offensive targeting the southern and central areas of Israel. The operation commenced with extensive rocket barrages directed toward civilian centers and was accompanied by the entry of militants into communities in southern Israel, adjacent to the Gaza Strip. The consequences of this attack are evident and lasting [36]. Since then, the “Iron Swords” War has been taking place in Gaza, in parallel to an ongoing war on Israel’s northern border. This situation has caused an emergency in Israel's hospitals, which were immediately prepared to receive thousands of wounded people, including hundreds in severe condition. Since the beginning of the war, Israeli healthcare workers have been working under emergency conditions, which may be affecting their levels of burnout and resilience.

While previous research has examined burnout and resilience separately in healthcare settings, limited research has explored their complex interrelationships during active warfare conditions. Accordingly, we examined the relationship between personal resilience and burnout among hospital nurses working during the ongoing Iron Swords War in Israel. Specifically, we sought to assess the prevalence of burnout, anxiety, and stress among nurses working in Israeli hospitals during wartime conditions, evaluate the levels of personal resilience among the nursing workforce, identify risk and protective factors for burnout by examining the mediating effects of stress and resilience on the relationship between anxiety and burnout, and determine predictors of burnout among nurses, considering demographic characteristics, work-related factors, and psychological variables to inform targeted interventions.

**Methods**

**Study procedure and participants**

This cross-sectional study was conducted between June 2024 and April 2025, approximately 8–18 months after the October 7 attack that initiated the Iron Swords War. The study protocol was approved by the College of Law and Business Ethics Committee (approval no. 1423). After receiving approval, the second author provided the hospital's head nurses with a direct link to an electronic questionnaire that was distributed via WhatsApp to nurses. Participants were informed of the purpose of the study, the eligibility criteria, anonymity, and data protection and provided their consent electronically. The inclusion criteria comprised the following: (1) currently employed as nursing staff in an Israeli hospital, (2) fluent in Hebrew, and (3) working in core departments during the study period. Follow-up reminders were sent through the hospital’s head nurses at 8-week intervals to encourage participation, with data collection remaining open for 10 months to accommodate varying work schedules during the crisis period. Of the 5360 potential participants (i.e., hospital nurses who worked in core departments), 465 nurses returned the fully completed questionnaires (8.6% response rate). Participants were informed about anonymity, data protection, and privacy.

**Measures**

The online survey comprised four sections (Additional File No. 1):

1. Demographic details, including age, sex, family status, country of birth, number of workplaces, number of children, years of professional experience, number of monthly working hours, location of the main work hospital (north, south, or center of the country), whether the respondent was working night shifts, whether the respondent served in the military during the war, and whether the respondent had family members who served in the military during the war.
2. The Connor-Davidson 10-item Resilience Scale (CD-RISC-10), developed by Campbell-Sills and Stein [37]. The CD-RISC-10 consists of 10 statements describing various resilience aspects rated on a 5-point scale from 0 (not true at all) to 4 (true nearly all of the time), generating total scores from 0 to 40. Higher total scores indicate a greater ability to cope with adversity [38]. In the current study, Cronbach’s alpha was found to be 0.908, indicating high reliability.
3. The Depression, Anxiety, and Stress Scale (DASS-21), which measures depression, anxiety, and stress based on 21 items [39]. The degree to which respondents endorsed the symptoms over the course of the last week is rated on a scale that ranges from 0 (does not apply to me at all) to 3 (applies to me very much or most of the time). In the current study, we included 14 items from the original DASS-21 scale to measure anxiety and stress (omitted items measuring depression): Items 1, 4, 6, 8–10, and 12 measure stress symptoms, while Items 2, 3, 5, 7, 11, 13, and 14 measure anxiety symptoms. Anxiety and stress scores were calculated by summing the scores for the relevant items and multiplying the total by 2 to obtain the final score. The highest scores on each scale corresponded to more negative affective states. Scores for anxiety were classified as follows: normal (0–7), mild (8–9), moderate (10–14), severe (15–19), and extremely severe (≥20). In contrast, the scores for stress were classified as follows: normal (0–14), mild (15–18), moderate (19–25), severe (26–33), and extremely severe (≥34). In the current study, Cronbach’s alpha was found to be 0.801, indicating high reliability.
4. Copenhagen Burnout Inventory (CBI) [40]. The CBI is a self-reported measure of burnout that consists of 19 items describing different burnout aspects rated on a 5-point scale from 0 (never/almost never) to 4 (always). It contains three subscales measuring personal burnout, work-related burnout, and client-related burnout. In the current study, we included 14 items from the original CBI scale: five items measuring personal burnout (items 1–5), four items measuring work-related burnout (items 6–9), three items measuring client-related burnout (items 12–14), and two general items (items 10–11). Scores ranged from 0 to 100 and were classified as follows: always = 100 points, often = 75 points, sometimes = 50 points, seldom = 25 points, and never/almost never = 0 points. The total score was the average score on all items. Scores of 50–74 represent moderate burnout, 75–99 represent high burnout, and 100 represent severe burnout. In the current study, Cronbach’s alpha was found to be 0.797, indicating high reliability.

**Statistical analysis**

Data analysis was conducted using IBM SPSS Statistics 29.0 software, and reliability was examined using Cronbach’s alpha. An analysis of descriptive statistics was performed to explore the respondents’ demographics and characteristics. Descriptive statistics were used to summarize the included variables using numbers with percentages for categorical variables and means with standard deviations (SDs) for continuous variables. Spearman correlations were calculated to examine the associations between resilience, anxiety, stress, and burnout. Differences in anxiety and stress levels by the sociodemographic variables of respondents were tested with a chi-square test. Differences in burnout levels (which had a normal distribution) between the sociodemographic variables of respondents were tested using one-way ANOVA or t-tests. Mediation analysis was conducted using the PROCESS macro to examine the relationships among anxiety, stress, resilience, and burnout. Finally, a multiple linear regression model with burnout as an outcome was tested. A *p* value of less than 0.05 was considered statistically significant in all tests.

**Results**

Of the 465 nurses who responded to the survey, 289 were women (64.4%). In addition, 205 nurses (44.2%) reported working in the center of the country, 165 (35.6%) reported working in the north, and 94 (20.3%) reported working in the south. Of the 465 respondents, 17.9% served in the army during the war and 51% had family members (spouse or children) who served in the army during the war. Finally, 375 (80.6%) of the respondents reported extremely severe anxiety, while 165 (35.4%) reported extremely severe stress. Table 1 shows the differences in anxiety and stress levels by the respondents’ sociodemographic group.

Table 1 here

Analysis revealed significant differences in both anxiety and stress levels among nurses who worked night shifts compared to those who did not and among nurses who worked greater than 180 hours a week compared to those who worked less than 180 hours a week. In particular, 95% of the nurses who reported extremely severe anxiety and 92% of the nurses who reported extremely severe stress were working night shifts. In addition, 65% of the nurses who reported extremely severe anxiety and 58% of the nurses who reported extremely severe stress were working greater than 180 hours a week. Significant differences were also found in stress levels among nurses working in the center, north, and south of the country. For example, 79 (84%) of the nurses working in the south of the country, 153 (74%) of the nurses working in the center, and 121 (73%) of the nurses working in the north reported severe/extremely severe stress levels. Finally, the analysis revealed significant differences in both anxiety and stress levels between nurses who had family members who served in the army during the war and those who did not: 220 (94.4%) nurses who had family members who served in the army during the war reported severe/extremely severe anxiety levels, while 176 (75.5%) reported severe/extremely severe stress levels. Table 2 shows the levels of burnout and resilience among the respondents.

**Table 2.** Burnout and resilience levels among respondents (N = 465)

|  |  |  |
| --- | --- | --- |
|  | **N (%)** | **Mean ± SD** |
| **Burnout** |  |  |
| Low/Mild | 181 (38.9) | 53.5 ± 14.1 |
| Moderate | 248 (53.3) |  |
| High | 36 (7.7) |  |
|  |  |  |
| **Resilience** |  | 20.4 ± 8.2 |

Analysis revealed a moderate level of resilience (20.4 ± 8.2), with only 7.7% of the nurses reporting high burnout. Significantly higher levels of burnout were found among female respondents compared to male respondents (54.6 ± 14.8 and 51.8 ± 12.4, respectively; t(447) = 2.04, *p* = 0.042), among nurses who worked night shifts compared to those who did not (53.8 ± 13.3 and 44.6 ± 18.3, respectively; t(438) = −3.98, *p* < 0.001), and among nurses who worked greater than 180 hours a week compared to those who did not (54.7 ± 12.3 and 51.7 ± 16.6, respectively; t(446) = −2.19, *p* = 0.029).

Table 3 shows the correlations between the study dimensions: resilience, anxiety, stress, and burnout.

**Table 3.** Correlations between resilience, anxiety, stress, and burnout

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Resilience** | **Anxiety** | **Stress** | **Burnout** |
| **Resilience** | 1 |  |  |  |
| **Anxiety** | 0.054 | 1 |  |  |
| **Stress** | 0.069 | 0.563\* | 1 |  |
| **Burnout** | −0.282\* | 0.529\* | 0.498\* | 1 |

*\*p* < 0.01

Significant positive correlations were found between anxiety and stress, between anxiety and burnout, and between stress and burnout, while significant negative correlations were found between resilience and burnout. High self-reported resilience levels appeared to be associated with low levels of burnout.

A mediation analysis was conducted using the PROCESS macro [41] to examine whether stress mediates the relationship between anxiety and burnout and whether resilience mediates the effect of anxiety and stress on burnout. The model is presented in Figure 1.

B=0.5903, *p*<0.001

**Stress (M)**

**Burnout (Y)**

**Anxiety (X)**

B=0.5438, *p*<0.001

B=0.7166, *p*<0.001

B’=0.3210 [0.2192,0.4283]

**Resilience**

B=-0.448, *p*<0.001

Figure 1. Mediation model of the study dimensions

The analysis revealed that anxiety significantly predicted stress (B = 0.5903, standard error [SE] = 0.0330, t = 17.87, *p* < 0.001, 95% CI [0.5254, 0.6552]), stress significantly predicted burnout (B = 0.5438, SE = 0.0885, t = 6.15, *p* < 0.001, 95% CI [0.3699, 0.7177]), and anxiety also directly predicted burnout (B = 0.7166, SE = 0.0818, t = 8.76, *p* < 0.001, 95% CI [0.5559, 0.8773]). The indirect effect of anxiety on burnout through stress was statistically significant (B = 0.3210, BootSE = 0.0535, 95% CI [0.2192, 0.4283]), indicating partial mediation. In addition, the indirect effect of anxiety on burnout through resilience was not significant (B = 0.0226, 95% CI [–0.0251, 0.0661]), but resilience significantly reduced burnout (B = −0.4480, *p* < 0.001).

To examine predictors of burnout, a multiple linear regression model was tested. The model is presented in Table 4.

**Table 4.** Multiple regression model for study variables as predictors of burnout

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Dimension/Variable** | **B** | **β** | **t** | ***p* value** |
| Sex (ref.: male)Age 18-30 years (ref.)Age 31–40 yearsAge 41–50 yearsAge ≥ 51 yearsResilienceAnxietyStress | −2.95811.0660.7981.046−0.4850.6630.568 | −0.1000.0350.0250.026−0.2790.380.303 | −2.8400.8420.5910.67−7.9988.4826.759 | 0.0050.40.5550.503< 0.001< 0.001< 0.001 |

Multiple linear regression was conducted to examine the effects of sex, age group, resilience, anxiety, and stress on burnout levels. Age was dummy-coded into three variables using the 18–30 year age group as the reference group. The model was significant (F (7, 441) = 58.44, *p* < 0.001) and explained 48.1% of the variance in burnout (R2 = 0.481). Significant predictors of burnout were sex (β = −0.10, *p* = 0.005), resilience (β = −0.28, *p* < 0.001), anxiety (β = 0.38, *p* < 0.001), and stress (β = 0.30, *p* < 0.001). The age group did not significantly predict burnout.

**Discussion**

The current study assessed the prevalence of burnout, anxiety, and stress among nurses working in Israeli hospitals during wartime conditions and examined the role of resilience. Our results revealed a moderate prevalence of burnout among nurses working in hospital settings during wartime. Similar moderate burnout rates were found in the nursing profession during the COVID-19 pandemic [42].

Our findings align with those of a recent study that examined burnout and traumatic stress among nurses exposed to military trauma during the Russian invasion of Ukraine and found no indication of a high level of ongoing war-related traumatic stress, likely due to the nurses' adaptation to the continuous emergency [43]. Similarly, recent research examining healthcare workers in various high-stress environments found that physicians working near conflict zones maintained resilience levels comparable to those of their colleagues in less threatened areas while reporting higher levels of perceived danger [1]. This suggests that healthcare professionals may develop adaptive mechanisms that help to maintain psychological functioning even under extreme stress conditions. The mean resilience score in our study (20.4 ± 8.2) reflects this adaptive capacity, demonstrating that, despite unprecedented stressors, nursing staff maintained moderate levels of psychological resilience.

Nevertheless, our analysis revealed extreme levels of anxiety and stress among the hospital nurses participating in our study. Previous evidence indicated that war-related stress significantly impacts hospital personnel's mental health, leading to elevated stress and depressive symptoms during conflict and persistent post-traumatic symptoms [44]. The elevated levels of stress and anxiety observed among nurses during the Iron Swords War are attributable to a confluence of unique and intense stressors. This heightened burden stems from a significant surge in both patient volume and acuity. Hospitals during the Iron Swords War received a high influx of casualties with diverse and severe injuries, alongside patients experiencing acute trauma requiring immediate care. Furthermore, the inherent personal risk associated with working in a conflict zone profoundly contributed to this distress. In some facilities, nurses operated under direct threat, including missile attacks, which necessitated the relocation of clinical operations to fortified areas. Compounding these dangers, wartime nursing is often characterized by severe human resource shortages. Many staff members are deployed for military reserve duty, compelling active nurses to work extended shifts, including night shifts, under immense pressure. These challenging professional circumstances exist concurrently with significant personal stress and concern for family members. Notably, our analysis indicates particularly high levels of stress and anxiety among nurses with a family member serving in the military reserves. This combination of demanding professional conditions and pervasive personal anxieties creates an exceptionally taxing environment for healthcare providers.

Furthermore, mediation analysis revealed that stress partially mediates the relationship between anxiety and burnout. These results are consistent with recent findings that demonstrated similar mediating relationships in a study of infectious disease nurses, where perceived stress accounted for 30.61% of the relationship between anxiety and burnout [35].

In this context, resilience is clearly a crucial element that enables health professionals to effectively manage stressful situations, including public health crises. The findings of the current study indicate a moderate level of resilience among nurses during wartime and an inverse relationship between nurses' resilience and their levels of burnout. This observation aligns with the existing literature. A large-scale post-pandemic study of nurses found moderate levels of burnout following the COVID-19 pandemic [45]. The study investigated the associations among social support, resilience, and burnout after the pandemic and revealed a negative correlation between resilience and occupational burnout and between social support and burnout. The protective influence of resilience observed in our study is further supported by the research of Joachim et al. [1], which showed that, despite working in areas with varying degrees of objective danger during the Iron Swords War, physicians’ personal resilience partially mediated the relationship between environmental stressors and psychological outcomes. The protective influence of social support and personal resilience on nurses, a sector that frequently experiences high levels of burnout, has been found to be highly significant in recent studies [46-47]. A study investigating the experiences of nurses who worked during wartime found that emotional support for nurses is hugely important both during and after periods of conflict [48]. Additionally, formal recognition of nurses' professional and national contributions was identified as an effective strategy for encouraging and supporting them. This convergent evidence across different healthcare professional groups and settings underscores the importance of resilience as a protective factor in healthcare environments characterized by high stress and uncertainty.

In light of these findings, it is crucial to allocate resources and involve employees in developing intervention programs aimed at reducing stress and tension while enhancing personal resilience [49]. Addressing these factors can effectively mitigate nurse burnout levels and support the ability of nurses to cope with burnout in both the short and long term. Diverse programs can be developed to prevent burnout among nurses. For example, an artificial intelligence-based burnout prevention program that incorporated an application used by nurses demonstrated reduced nurse burnout levels and stress, alongside increased job satisfaction [50]. Furthermore, a favorable work environment significantly helps to mitigate nurse burnout. Key defining elements of such an environment include a reduced nurse-to-patient ratio, enhanced nurse participation in decision-making processes, and appropriate resource allocation. These factors have been recognized as instrumental in lowering nurse turnover, reducing intentions to leave the profession, and decreasing the incidence of burnout among nursing staff [51].

The implications of our findings extend beyond the immediate context of the Iron Swords War. The demographic factors identified in our study as predictors of burnout (sex, night shift work, longer working hours, and family military service) are consistent with broader patterns observed in healthcare resilience research. These findings suggest that targeted interventions should address both environmental stressors and individual resilience factors, with particular attention to vulnerable subgroups within the healthcare workforce.

**Limitations of the study**

Several limitations should be considered when interpreting the findings of this study. First, the cross-sectional design provides only a snapshot of nurses' psychological states during a specific period of the Iron Swords War and cannot establish causal relationships between variables or capture the dynamic nature of psychological responses over time. Longitudinal studies are needed to understand the trajectory of burnout, resilience, and psychological distress throughout different phases of the conflict and recovery periods. Second, this study relied exclusively on self-reported measures, which may be subject to several biases. Participants may have under- or over-reported their symptoms, particularly given the sensitive nature of mental health topics and the ongoing crisis context. Third, the low response rate raises concerns about selection bias and limits the generalizability of findings to the broader population of Israeli nurses. Nurses who chose to participate may have differed systematically from non-respondents in terms of their psychological state, coping mechanisms, or demographic characteristics. Fourth, the specific nature of the Iron Swords War, including its intensity, duration, and proximity to civilian areas, may not be representative of other healthcare crises. Despite these limitations, this study provides valuable insights into nurses' psychological responses during an unprecedented crisis and offers important directions for future research and intervention development.

**Nursing Implications**

The findings of this study have important implications for nursing practice, education, and healthcare policy during crisis situations. Our results demonstrate that 80.6% of nurses experienced extremely severe anxiety and 35.4% reported extremely severe stress during the Iron Swords War, indicating an urgent need for comprehensive support systems. Healthcare administrators should prioritize the implementation of targeted interventions for the high-risk groups identified in our study. Nurses working night shifts exhibited significantly higher levels of anxiety and stress, with 95% of those reporting extremely severe anxiety and 92% of those reporting extremely severe stress working night shifts. Similarly, nurses working more than 180 hours per week demonstrated elevated psychological distress. These findings suggest the need for optimized scheduling systems that consider both operational demands and staff well-being.

Given that 51% of nurses had family members serving in the military during the war, healthcare institutions should develop specialized support programs for this vulnerable population. This could include flexible scheduling arrangements and access to family support services.

The moderate resilience levels observed in our study suggest that, while nurses demonstrate adaptive capacity, there is room for improvement through targeted resilience-building interventions. Nursing education programs should incorporate resilience training as a core component, focusing on stress management techniques and adaptive coping strategies. Regular resilience assessments could help to identify nurses at risk and enable early interventions.

The strong inverse relationship between resilience and burnout underscores the importance of organizational support for resilience development. Healthcare institutions should invest in evidence-based programs to reduce stress, creating supportive work environments with adequate nurse-to-patient ratios, enhanced participation in decision-making processes, and appropriate resource allocation that significantly contributes to reducing burnout and promoting resilience.

**Conclusions**

This study provides important insights into the psychological challenges faced by nurses working in Israeli hospitals during the Iron Swords War. Our findings stress that risk factors such as night shift work, longer work hours, and military service of family members during wartime significantly exacerbate psychological distress. Notably, the study revealed that, while stress partially mediated the relationship between anxiety and burnout, resilience had a direct and significant protective effect on burnout. These findings align with existing literature emphasizing the unique stressors experienced by healthcare professionals in high-pressure environments, particularly during periods of crisis or conflict. Given the substantial impact of anxiety and stress on nurses' well-being and the critical role of resilience in mitigating burnout, our study underscores the urgent need for targeted interventions. Healthcare institutions should prioritize the development and implementation of programs that aim to reduce occupational stressors, enhance personal resilience, and foster supportive work environments. Strategies such as optimizing shift patterns, ensuring adequate staffing, and providing comprehensive psychological support, especially for nurses with family members in military service, are paramount. Investing in such initiatives will not only improve the quality of life for nurses but also strengthen the capacity of the healthcare system to deliver essential care during times of crisis.

**References**

1. Joachim MV, Joachim DA, Korn L, Shapiro Y, Laviv A, Zigdon A. Emotional resilience and sense of danger among doctors in hospitals during periods of heightened tensions and warfare in Israel. Isrs J Health Policy Res. 2024;13(1):68.‏ <https://doi.org/10.1186/s13584-024-00655-3>.
2. Leiter MP, Maslach C. Nurse turnover: the mediating role of burnout. J Nurs Manag. 2009;17(3):331–9. https://doi.org/10.1111/j.1365-2834.2009.01004.x.
3. Maslach C, Jackson SE. The measurement of experienced burnout. J Organ Behav. 1981;2:99–113. <https://doi.org/10.1002/job.4030020205>.
4. Awa WL, Plaumann M, Walter U. Burnout prevention: a review of intervention programs. Patient Educ Couns. 2010;78(2):184–90. <https://doi.org/10.1016/j.pec.2009.04.008>.
5. Woo T, Ho R, Tang A, Tam W. Global prevalence of burnout symptoms among nurses: a systematic review and meta-analysis. J Psychiatr Res. 2020;123:9–20. <https://doi.org/10.1016/j.jpsychires.2019.12.015>.
6. Søvold LE, Naslund JA, Kousoulis AA, Saxena S, Qoronfleh MW, Grobler C, Münter L. Prioritizing the mental health and well-being of healthcare workers: an urgent global public health priority. Front Public Health. 2021;9:679397. <https://doi.org/10.3389/fpubh.2021.679397>.
7. Zisook S, Doran N, Mortali M, Hoffman L, Downs N, Davidson J, et al. Relationship between burnout and major depressive disorder in health professionals: a HEAR report. J Affect Disord. 2022;312:259–67. <https://doi.org/10.1016/j.jad.2022.06.047>.
8. Wood AE, Prins A, Bush NE, Hsia JF, Bourn LE, Earley MD, et al. Reduction of burnout in mental health care providers using the provider resilience mobile application. Community Ment Health J. 2017;53(4):452–9. <https://doi.org/10.1007/s10597-016-0076-5>.
9. Chemali Z, Ezzeddine L, Gelaye B, Dossett ML, Salameh J, Bizri M, et al. Burnout among healthcare providers in the complex environment of the Middle East: a systematic review. BMC Public Health. 2019;19:1337. <https://doi.org/10.1186/s12889-019-7713-1>.
10. Gillet N, Huyghebaert-Zouaghi T, Réveillère C, Colombat P, Fouquereau E. The effects of job demands on nurses’ burnout and presenteeism through sleep quality and relaxation. J Clin Nurs. 2020;29:583–92. <https://doi.org/10.1111/jocn.15116>.
11. García-Sierra R, Fernández-Castro J, Martínez-Zaragoza F. Relationship between job demand and burnout in nurses: does it depend on work engagement? J Nurs Manag. 2016;24:780–8. https://doi.org/10.1111/jonm.12382.
12. Nesje K. Professional commitment: does it buffer or intensify job demands? Scand J Psychol. 2017;58:185–91. https://doi.org/10.1111/sjop.12349.
13. Diehl E, Rieger S, Letzel S, Schablon A, Nienhaus A, Escobar Pinzon LC, Dietz P. The relationship between workload and burnout among nurses: the buffering role of personal, social and organisational resources. PLoS One. 2021;16(1):e0245798. <https://doi.org/10.1371/journal.pone.0245798>.
14. Bilal H, Sari HY. Relationship between burnout and patient safety attitudes in pediatric nurses in a hospital in Turkey. Enferm Clin (Engl Ed). 2020;30:37–41. <https://doi.org/10.1016/j.enfcle.2019.08.004>.
15. Jun J, Ojemeni MM, Kalamani R, Tong J, Crecelius ML. Relationship between nurse burnout, patient and organizational outcomes: systematic review. Int J Nurs Stud. 2021;119:103933. [https://doi.org/10.1016/j.ijnurstu.2021.103933 21](https://doi.org/10.1016/j.ijnurstu.2021.103933%2021).
16. Santarone K, McKenney M, Elkbuli A. Preserving mental health and resilience in frontline healthcare workers during COVID-19. Am J Emerg Med. 2020;38:1530–1. https://doi.org/10.1016/j.ajem.2020.04.030.
17. Jiang J, Liu Y, Han P, Zhang P, Shao H, Peng H, Duan X. Psychological resilience of emergency nurses during COVID-19 epidemic in Shanghai: a qualitative study. Front Public Health. 2022;10:1–11. <https://doi.org/10.3389/fpubh.2022.1001615>.
18. Ron P, Shamai M. The impact of ongoing national terror on the community of hospital nurses in Israel. Community Ment Health J. 2014;50(3):354–61. https://doi.org/[10.1007/s10597-013-9645-z](https://doi.org/10.1007/s10597-013-9645-z%22%20%5Ct%20%22_blank).
19. Denning M, Goh ET, Scott A, Martin G, Markar S, Flott K, et al. What has been the impact of Covid-19 on safety culture? A case study from a large metropolitan healthcare trust. Int J Environ Res Public Health. 2020;17(19):7034. <https://doi.org/10.3390/ijerph17197034>.
20. Mahmoudi S, Barkhordari‐Sharifabad M, Pishgooie AH, Atashzadeh‐Shoorideh F, Lotfi Z. Burnout among Iranian nurses: a national survey. BMC Nurs. 2020;19(1):1–9. <https://doi.org/10.1186/s12912-020-00461-7>.
21. Kieft RA, De Brouwer BBJM, Francke AL, Delnoij DMJ. How nurses and their work environment affect patient experiences of the quality of care: a qualitative study. BMC Health Serv Res. 2014;14:1–10.‏ <https://doi.org/10.1186/1472-6963-14-249>.
22. Dall’Ora C, Ball J, Reinius M, Griffiths P. Burnout in nursing: a theoretical review. Hum Resour Health. 2020;18(1):41. <https://doi.org/10.1186/s12960-020-00469-9>.
23. De la Fuente-Solana EI, Pradas-Hernández L, Ramiro-Salmerón A, Suleiman-Martos N, Gómez-Urquiza JL, Albendín-García L, Cañadas-De la Fuente GA. Burnout syndrome in paediatric oncology nurses: a systematic review and meta-analysis. Healthcare (Basel). 2020;8:309. <https://doi.org/10.3390/healthcare8030309>.
24. Sung CW, Chen CH, Fan CY, Chang JH, Hung CC, Fu CM, et al. Mental health crisis in healthcare providers in the COVID-19 pandemic: a cross-sectional facility-based survey. BMJ Open. 2021;11:e052184. <https://doi.org/10.1136/bmjopen-2021-052184>.
25. Zhu H, Yang X, Xie S, Zhou J. Prevalence of burnout and mental health problems among medical staff during the COVID-19 pandemic: a systematic review and meta-analysis. BMJ Open. 2023;13(7):e061945. <https://doi.org/10.1136/bmjopen-2022-061945>.
26. Hao S. Burnout and depression of medical staff: a chain mediating model of resilience and self-esteem. J Affect Disord. 2023;325:633–9. <https://doi.org/10.1016/j.jad.2022.12.153>.
27. Kleinpell R, Moss M, Good VS, Gozal D, Sessler CN. The critical nature of addressing burnout prevention: results from the critical care societies collaborative's national summit on prevention and management of burnout in the ICU. Crit Care Med. 2020;48:249–53. https://doi.org/10.1097/CCM.0000000000003964.
28. Wei H, Roberts P, Strickler J, Corbett RW. Nurse leaders' strategies to foster nurse resilience. J Nurs Manag. 2019;27(4):681–7. https://doi.org/[10.1111/jonm.12736](https://doi.org/10.1111/jonm.12736%22%20%5Ct%20%22_blank).
29. Safiye T, Vukčević B, Gutić M, Milidrag A, Dubljanin D, Dubljanin J, Radmanović B. Resilience, mentalizing and burnout syndrome among healthcare workers during the COVID-19 pandemic in Serbia. Int J Environ Res Public Health. 2022;19(11):6577. https://doi.org/10.3390/ijerph19116577.
30. Al-Harrasi S, Sabei SA, Omari OA, Abrawi UA. Nurses' job burnout and resilience in neonatal intensive care units. J Perinat Neonatal Nurs. 2024;38(2):201–11. https://doi.org/10.1097/JPN.0000000000000817.
31. Baugh A, Reiser V, Zhao J, Klein SJ, Rosenzweig MQ. Burnout and resiliency among advanced practice providers in oncology care. J Adv Pract Oncol. 2024;15(2):95–101. https://doi.org/10.6004/jadpro.2024.15.2.2.
32. Foster K, Roche M, Delgado C, Cuzzillo C, Giandinoto JA, Furness T. Resilience and mental health nursing: an integrative review of international literature. Int J Ment Health Nurs. 2019;28(1):71–85. https://doi.org/[10.1111/inm.12548](https://doi.org/10.1111/inm.12548%22%20%5Ct%20%22_blank).
33. Profit J, Sharek PJ, Amspoker AB, Kowalkowski MA, Nisbet CC, Thomas EJ, et al. Burnout in the NICU setting and its relation to safety culture. BMJ Qual Saf. 2014;23(10):806–13. https://doi.org/[10.1136/bmjqs-2014-002831](https://doi.org/10.1136/bmjqs-2014-002831%22%20%5Ct%20%22_blank).
34. Fazekas C, Zieser M, Hanfstingl B, Saretzki J, Kunschitz E, Zieser-Stelzhammer L, et al. Physician resilience and perceived quality of care among medical doctors with training in psychosomatic medicine during the COVID-19 pandemic: a quantitative and qualitative analysis. BMC Health Serv Res. 2024;24:249. https://doi.org/[10.1186/s12913-024-10681-1](https://doi.org/10.1186/s12913-024-10681-1%22%20%5Ct%20%22_blank).
35. Huang Y, Wang Z, Li Y, Zhao Z, Wang W, Cai C, et al. Anxiety and burnout in infectious disease nurses: the role of perceived stress and resilience. BMC Nurs. 2025;24:3. <https://doi.org/10.1186/s12912-024-02649-7>.
36. Peleg O, Gendelman L. Internally displaced people amidst war: the Israeli narrative. Lancet. 2023;402(10417):2071–2. [https://doi.org/10.1016/S0140-6736(23)02521-7](https://doi.org/10.1016/S0140-6736%2823%2902521-7).
37. Campbell-Sills L, Stein MB. Psychometric analysis and refinement of the Connor-Davidson resilience scale (CD-RISC): validation of a 10-item measure of resilience. J Trauma Stress. 2007;20:1019–28. <https://doi.org/10.1002/jts.20271>.
38. Cheng, C, Dong D, He J, Zhong X, Yao S. Psychometric properties of the 10-item Connor–Davidson Resilience Scale (CD-RISC-10) in Chinese undergraduates and depressive patients. J Affect Disord. 2020;261:211–20. <https://doi.org/10.1016/j.jad.2019.10.018>.
39. Lovibond SH. Lovibond PF. Manual for the depression anxiety & stress scales. 2nd ed. Sydney: Psychology Foundation; 1995.
40. Kristensen TS, Borritz M, Villadsen E, Christensen KB. The Copenhagen Burnout Inventory: a new tool for the assessment of burnout. Work & Stress. 2005;19(3):192–207. <https://doi.org/10.1080/02678370500297720>.
41. Hayes AF. Introduction to mediation, moderation, and conditional process analysis: a regression-based approach. 3rd ed. New York: The Guilford Press; 2022.
42. Martin B, Kaminski-Ozturk N, O'Hara C, Smiley R. Examining the impact of the COVID-19 pandemic on burnout and stress among U.S. nurses. J Nurs Regul. 2023;14(1):4–12. [https://doi.org/10.1016/S2155-8256(23)00063-7](https://doi.org/10.1016/S2155-8256%2823%2900063-7).
43. Zasiekina L, Martyniuk A. War-related continuous traumatic stress as a potential mediator of associations between moral distress and professional quality of life in nurses: a cross-sectional study in Ukraine. BMC Nurs. 2025;24(1):16. <https://doi.org/10.1186/s12912-024-02668-4>.
44. Ben-Ezra M, Palgi Y, Wolf JJ, Shrira A. Psychiatric symptoms and psychosocial functioning among hospital personnel during the Gaza War: a repeated cross-sectional study. Psychiatry Res. 2011;189(3):392–5. <https://doi.org/10.1016/j.psychres.2011.02.004>.
45. Moisoglou I, Katsiroumpa A, Malliarou M, Papathanasiou IV, Gallos P, Galanis P. Social support and resilience are protective factors against COVID-19 pandemic burnout and job burnout among nurses in the post-COVID-19 era. Healthcare (Basel). 2024;12(7):710. <https://doi.org/10.3390/healthcare12070710>.
46. Phillips K, Knowlton M, Riseden J. Emergency department nursing burnout and resilience. Adv Emerg Nurs J. 2022;44(1):54–62. <https://doi.org/10.1097/TME.0000000000000391>.
47. Galanis P, Moisoglou I, Katsiroumpa A, Vraka I, Siskou O, Konstantakopoulou O, Kaitelidou D. Moral resilience reduces levels of quiet quitting, job burnout, and turnover intention among nurses: evidence in the post COVID-19 era. Nurs Rep. 2024;14(1):254–66. <https://doi.org/10.3390/nursrep14010020>.
48. Segev R. Learning from critical care nurses' wartime experiences and their long-term impacts. NursCrit Care. 2023;28(2):253–60. <https://doi.org/10.1111/nicc.12819>.
49. de Wijn AN, van der Doef MP. A meta-analysis on the effectiveness of stress management interventions for nurses: capturing 14 years of research. Int J Stress Manag. 2022;29(2):113–29. <https://doi.org/10.1037/str0000169>.
50. Cho A, Cha C, Baek G. Development of an artificial intelligence-based tailored mobile intervention for nurse burnout: single-arm trial. J Med Internet Res. 2024;26:e54029. <https://doi.org/10.2196/54029>.
51. Bruyneel A, Bouckaert N, Maertens de Noordhout C, Detollenaere J, Kohn L, Pirson M, et al. Association of burnout and intention-to-leave the profession with work environment: a nationwide cross-sectional study among Belgian intensive care nurses after two years of pandemic. Int J Nurs Stud. 2023;137:104385. <https://doi.org/10.1016/j.ijnurstu.2022.104385>.