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Burnout indicators among operators of Lebanon's national suicide prevention lifeline during the 2024 war: organizational correlates and implications for hotline practice

Dina Farran · Mahatab El Haj · Ghida Chiha · Rahaf El Fouani · Jinane Abi Ramia · Philip Noun · Lea Zeinoun · Mia Atoui · Rabih El Chammay

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Abstract

Background Suicide prevention hotlines provide critical support for individuals experiencing acute psychological distress and suicidal crises. Operators act as frontline responders and are routinely exposed to emotionally demanding interactions, increasing vulnerability to burnout, particularly in crisis and conflict settings. This study examined the prevalence and factors associated with burnout indicators among operators of Lebanon's National Lifeline during the 2024 war.

Methods A cross-sectional online survey was conducted in February 2025 among trained Lifeline operators active throughout the conflict period spanning September 2024 until the ceasefire. All 96 eligible operators were invited to participate, and 51 completed the survey (response rate: 53.1%). Burnout was assessed using the Maslach Burnout Inventory-Human Services Survey, measuring emotional exhaustion, depersonalization, and personal accomplishment. Adjusted logistic regression models examined associations between individual, organizational, and contextual factors and burnout outcomes. Sensitivity analyses were conducted using alternative burnout classifications and Firth penalized logistic regression.

Results Fifty-one operators participated, of whom nine (17.6%) met criteria for burnout. Participants reported moderate emotional exhaustion, moderate depersonalization, and relatively preserved personal accomplishment. Concurrent employment (holding an additional job alongside the Lifeline role) was associated with higher emotional exhaustion, whereas organizational and relational factors, including satisfaction with the role, perceived organizational support, supervision, clear communication, and professional development opportunities, were associated with more favourable burnout indicators. Sensitivity analyses showed a generally similar pattern of findings, although some associations varied according to the operational definition of burnout.

Conclusion Among crisis hotline operators working during an active conflict, burnout indicators were associated with organizational, relational, and occupational factors. Although the findings are exploratory, supervision, organizational support, communication processes, professional development opportunities, and operational flexibility

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Mia Atoui and Rabih El Chammay Joint senior authors.

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were associated with more favourable burnout indicators and warrant further investigation in longitudinal and intervention studies.

Keywords Burnout · Suicide prevention · Hotline · Armed conflict · Mental health workforce · Lebanon

Introduction

Lebanon, a lower-middle-income country with a population of approximately 5.7 million [1], faces substantial mental health challenges shaped by political instability, economic hardship, and stigma surrounding mental illness [2]. Although reported suicide rates appear relatively low, estimated between 1.87 and 2.4 deaths per 100,000 population [3], these figures likely underestimate the true burden due to underreporting associated with cultural, religious, and social stigma [4, 5]. Limitations in service availability, affordability, and accessibility continue to constrain the country's capacity to respond effectively to mental health needs and suicide prevention.

In recent years, Lebanon has experienced multiple overlapping crises that have further strained population mental health. The COVID-19 pandemic, the 2020 Beirut Port explosion, and a prolonged economic collapse that has devalued the national currency by over 90% [2] have contributed to widespread psychological distress. National survey data from 2022 indicated that 63% of respondents screened positive for at least one mental health disorder, with over 40% reporting symptoms of depression, anxiety, or post-traumatic stress disorder [2]. Within this fragile context, the 2024 war in Lebanon, characterized by widespread airstrikes, large-scale population displacement, and heightened insecurity across several regions of the country, further intensified distress and disrupted social and economic stability [6].

During such crises, emotional support and suicide prevention hotlines provide an essential and accessible entry point for individuals experiencing acute psychological distress or suicidal ideation. Since 2018, Lebanon's National Lifeline for Emotional Support and Suicide Prevention (telephone number 1564), operated by Embrace, a Lebanese non-governmental organization, in partnership with the National Mental Health Programme (NMHP) at the Ministry of Public Health, has served as the country's only dedicated suicide prevention hotline. Staffed primarily by trained volunteer operators under clinical supervision, the Lifeline provides 24/7 confidential emotional support in a context where stigma, cost, and limited service availability often deter formal help-seeking [7, 8]. Previous evaluations suggest that hotline engagement can significantly reduce caller distress over the course of calls [5]. In this context, operator well-being is critical to maintaining the quality, continuity, and safety of suicide prevention services, particularly during periods of heightened population distress.

Despite their essential role, crisis hotline operators are routinely exposed to emotionally intense interactions, including suicidal crises, trauma narratives, and sustained emotional demands. Such exposure, combined with the uncertainty inherent in remote crisis intervention and limited opportunities for follow-up with callers, may contribute to secondary traumatic stress, moral distress, and burnout [9, 10]. Burnout, commonly characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment [11], is well documented among helping professionals and may be particularly pronounced in crisis settings marked by instability, resource constraints, and heightened distress.

Evidence from conflict-affected settings indicates that mental health professionals working during war experience elevated levels of burnout, secondary trauma, and psychological strain [12, 13]. Identified risk factors include heavy workload, irregular schedules, insufficient supervision, economic stressors, and limited coping resources [14–16]. Younger age and limited professional experience have also been associated with increased vulnerability, whereas peer support, intrinsic motivation, and structured supervision have been identified as potentially protective factors [17–19]. However, most existing studies focus on licensed clinicians rather than hotline operators, particularly those working in volunteer-based crisis services within fragile or resource-constrained systems.

To date, little research has examined burnout among suicide prevention hotline operators in conflict-affected or low-resource settings. To address this gap, the present study examined burnout among operators of Lebanon's

National Lifeline during the 2024 war. Using the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), the study assessed emotional exhaustion, depersonalization, and personal accomplishment alongside individual, organizational, and contextual factors associated with burnout. The study aimed to generate evidence relevant to supporting crisis hotline operators in humanitarian and conflict settings and to contribute to the broader understanding of workforce well-being in suicide prevention services.

Methods

Study design and setting

This cross-sectional study assessed burnout among operators working on Lebanon's National Lifeline for Emotional Support and Suicide Prevention during the 2024 war. All 96 trained operators who were actively providing hotline services during the conflict period, beginning in September 2024, were invited to participate. Because the study aimed to recruit the entire eligible operator population, no formal a priori sample size or statistical power calculation was performed. Data were collected through an anonymous online survey administered in February 2025, approximately two months after the ceasefire. Participants were instructed to respond based on their experiences while working as Lifeline operators during the conflict period, from September 2024 until the ceasefire. Responses were intended to reflect experiences across the entire conflict period rather than a specific phase of the war. Participation was voluntary, and no identifying information was collected.

Burnout assessment

Burnout was measured using the MBI-HSS, a validated 22-item self-report instrument assessing three dimensions of occupational burnout: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA) [20]. Items are rated on a seven-point Likert scale ranging from "Never" to "Every day." In the present sample, the emotional exhaustion subscale demonstrated excellent internal consistency (Cronbach's $\alpha = 0.93$), and the personal accomplishment subscale demonstrated acceptable internal consistency ($\alpha = 0.80$), whereas the depersonalization subscale demonstrated lower internal consistency ($\alpha = 0.59$). Subscale scores were calculated following standard scoring procedures, with higher EE and DP scores and lower PA scores indicating greater burnout.

Burnout classification

Primary burnout classification followed established MBI cut-off thresholds: EE low (≤ 16), moderate (17–26), high (≥ 27); DP low (≤ 6), moderate [7–12], high (≥ 13); and PA low (≤ 31), moderate (32–38), high (> 38). Participants were classified as experiencing burnout if they reported moderate or high levels of EE and DP, together with low or moderate PA.

To assess the robustness of the findings, sensitivity analyses were conducted using sample-derived percentile thresholds. Because validated MBI-HSS cut-offs have not been established for crisis hotline operators, we retained the conventional three-level (low, moderate, and high) classification but derived sample-specific cut-offs based on the distribution of scores within the study sample. The 25th and 75th percentiles were used as the primary cut-points to define low, moderate, and high categories, with minor adjustments informed by the median where necessary to ensure meaningful group sizes and avoid sparse categories. This resulted in the following classifications: EE low = 0–10, moderate = 11–17, high ≥ 18; DP low = 0–1, moderate = 2–5, high ≥ 6; and PA low = 0–29, moderate = 30–36, high ≥ 37. Using these classifications, burnout was defined as moderate or high EE, moderate or high DP, and low or moderate PA. This exploratory approach was used only as a sensitivity analysis to assess whether findings were robust to alternative classifications of burnout dimensions. Established

MBI-HSS thresholds were retained as the primary analytical framework because they are widely used and facilitate comparison across studies. The sample-derived thresholds were not intended to represent externally validated burnout definitions.

Additional survey measures

In addition to the MBI, the survey included investigator-developed items assessing factors potentially associated with burnout across four domains:

1. **Emotional and relational factors**: perceived emotional difficulty of calls, frequency of challenging calls, and perceived personal emotional impact of caller experiences.
2. **Organizational and environmental factors**: satisfaction with supervisory support, peer support, presence of senior operators during shifts, opportunities for debriefing, equipment reliability, workload management, and work environment conditions.
3. **Motivational factors**: intrinsic motivations (e.g., sense of purpose, commitment to helping others), extrinsic motivations (e.g., recognition, perceived social impact), satisfaction with the operator role, and opportunities for professional development.
4. **Contextual and war-related factors**: perceived emotional impact of the war, changes in call volume or severity during and after the conflict, perceived adequacy of the organizational crisis response, and perceived changes in role-related challenges over time.

These items were designed by the research team to capture context-specific experiences relevant to crisis hotline work during the conflict period, drawing on the operational experience of Lebanon's National Lifeline, including input from service leadership and existing operational procedures, as well as literature on hotline work stressors. Because these measures were not formally validated and were primarily assessed using single items, they should be considered exploratory contextual indicators rather than validated measures of the underlying constructs.

The variables were measured using individual survey items. Response formats included five-point Likert scales (e.g., satisfaction with supervisory support, satisfaction with the operator role, perceived organizational response to the war, and emotional impact of the war), binary yes/no items (e.g., training effectiveness), checklist-style items in which participants selected factors they perceived as helping prevent burnout (e.g., supervision, active listening, professional development), and categorical response options (e.g., perceived changes in work-related challenges and call volume). The complete questionnaire is available in Appendix (A) No composite scores were created from the investigator-developed measures. Although some items assessed positive experiences and others assessed negative experiences, each item was analysed individually according to its original coding; therefore, reverse scoring was not required. For the regression analyses, selected variables were recategorized or dichotomized using variable-specific coding rules to facilitate interpretation and reduce sparse cell counts. A detailed summary of the response formats, recoding procedures, and dichotomization applied to each explanatory variable, including the grouping of neutral responses where applicable, is provided in Appendix (B) Demographic variables included age, sex, marital status, educational level, duration of service as an operator, number of weekly shifts, and concurrent employment status, defined as holding an additional paid job alongside the Lifeline operator role.

Statistical analysis

All analyses were conducted using R statistical software. Variables included in the regression analyses were coded according to variable-specific recategorization rules described in Appendix B and, where appropriate, dichotomized to improve interpretability and minimize sparse-data issues. Descriptive statistics were used to summarize participant characteristics and burnout scores across EE, DP, and PA subscales. Univariate logistic regression models were used to estimate crude odds ratios (ORs) for associations between potential predictors

and burnout outcomes, including overall burnout status and individual subscale outcomes (moderate/high EE, moderate/high DP, and low PA).

Multivariable logistic regression models adjusted for age category and sex were subsequently fitted to explore associations between individual factors and burnout outcomes. Each adjusted model examined a single factor of interest while controlling for age and sex. The study was designed to examine a broad range of organizational, relational, motivational, and contextual factors potentially associated with burnout, and specific hypotheses regarding individual factors were not pre-specified. Accordingly, emphasis was placed on identifying patterns and directions of association rather than precise estimation of effect sizes or statistical significance. To assess the robustness of findings for the overall burnout outcome, an additional sensitivity analysis using Firth penalized logistic regression was conducted. This approach applies a penalized likelihood method to reduce bias in maximum likelihood estimation and is particularly useful in small samples with sparse outcome events.

Ethical considerations

This study was approved by the Institutional Review Board (IRB) of the Lebanese University. The study was conducted in accordance with the ethical principles of the World Medical Association Declaration of Helsinki for research involving human participants. Participation was voluntary and anonymous. Informed consent was obtained electronically prior to survey initiation, and participants were informed of their right to withdraw at any time without consequence.

Results

Characteristics of operators

A total of 51 operators completed the survey, corresponding to a response rate of 53.1%. Overall, 17.6% of participants ($n=9$) met criteria for burnout. As shown in Table 1, the sample was predominantly female (78.4%), young (64.7% aged 18–24 years), and single (98%). More than half held a Master's degree (54.9%), and 62.7% reported concurrent employment alongside their Lifeline role. Most operators worked one to two shifts per week (98%), each lasting approximately four hours, and 70.6% had less than three years of experience. Detailed item-level MBI responses are presented in Appendix C.

Descriptively, burnout indicators were more frequently observed among younger operators and those reporting concurrent employment. Among participants reporting moderate or high emotional exhaustion (EE) ($n=26$), nearly three-quarters (73.1%) were aged 18–24 and an equal proportion reported concurrent employment. Similar patterns were observed among those with moderate or high depersonalization (DP) ($n=17$) and low personal accomplishment (PA) ($n=16$). Among operators meeting full burnout criteria, most were aged 18–24 (88.9%), and two-thirds reported holding another job (66.7%) (Table 1).

Mean burnout subscale scores are presented in Table 2. The mean emotional exhaustion (EE) score was 19.6 (SD = 13.1), with 49.0% classified as low, 23.5% as moderate, and 27.5% as high. The mean depersonalization (DP) score was 5.4 (SD = 5.1), with most participants classified as low (66.7%), followed by moderate (23.5%) and high (9.8%). The mean personal accomplishment (PA) score was 34.4 (SD = 8.1); 35.3% reported high PA, 33.3% moderate, and 31.4% low.

Work and operational factors

Most operators reported experiencing emotional difficulty in their role (90.2%), and all participants with moderate or high emotional exhaustion or meeting overall burnout criteria reported emotional difficulty.

A substantial proportion of operators (78.4%) reported regularly handling calls they perceived as challenging, including 87.5% of those with low personal accomplishment. The war had a notable impact on operators' experiences: 92.1% reported that it negatively affected their emotional well-being and ability to manage calls, and a similar proportion indicated that their role became more challenging during the conflict compared with the pre-war period. Nearly half (49.0%) reported that these challenges persisted after the war. More than half (52.9%) observed an increase in call volume or severity following the conflict, and 56.9% reported feeling personally affected by callers' war-related experiences (Table 3).

Approximately two-thirds of operators (68.6%) reported that the organization's response during the war helped them cope and continue providing services, while the remainder reported that it was less helpful. Qualitative responses identified organizational practices perceived as supportive, including flexibility in work arrangements (e.g., remote call handling and adjusted shifts), regular supervisory check-ins and emotional support, and strong team cohesion characterized by empathy, active communication, and managerial responsiveness. Operators described these practices as helpful in managing stress and maintaining service provision during the conflict (Table 3).

Despite challenging conditions, satisfaction with supervisory support was high (96.1%), and most operators considered their training effective (92.2%). Peer support and supervisory support were perceived as helpful in reducing or preventing burnout by 72.5% and 82.4% of participants, respectively. Individual supervision and supervisor responsiveness were also identified as potentially helpful in reducing or preventing burnout by 74.5% and 84.3% of participants (Table 3).

Several motivational factors were perceived by operators as helpful in reducing or preventing burnout. Most operators identified intrinsic motivation (76.5%), extrinsic motivation (68.6%), and opportunities for professional development (80.4%) as potentially helpful. Operators frequently highlighted coping-related skills such as active listening (72.5%), maintaining emotional focus during calls (47.1%), and establishing a meaningful connection with callers (52.9%) as potentially helpful in reducing or preventing burnout.

Environmental and operational factors were less consistently endorsed but were nonetheless perceived by some operators as relevant to well-being. Functioning technical equipment, clear communication about shift responsibilities, wellness initiatives, and access to quiet workspaces were among the factors identified as potentially helpful in reducing or preventing burnout (Table 3).

Exploratory associations with burnout indicators and overall burnout using standard MBI cut-offs

All multivariable analyses were adjusted for age category and sex to account for potential demographic confounding. These exploratory analyses suggested several potential associations with individual burnout dimensions, particularly emotional exhaustion and personal accomplishment, whereas few factors were associated with the composite burnout outcome (Table 4). Holding an additional job was associated with higher odds of moderate or high emotional exhaustion (adjusted OR = 4.1, 95% CI: 1.1–17.1). Conversely, greater satisfaction with the operator role was associated with lower odds of moderate or high emotional exhaustion (adjusted OR = 0.1, 95% CI: 0.0-0.7). Perceiving the organization's wartime response as helpful was also associated with lower odds of moderate or high emotional exhaustion (adjusted OR = 0.1, 95% CI: 0.0-0.4).

Several additional factors were associated with lower odds of moderate or high emotional exhaustion, including intrinsic motivation (adjusted OR = 0.1, 95% CI: 0.0-0.7), a strong sense of connection with callers (adjusted OR = 0.2, 95% CI: 0.0-0.7), clear communication regarding shift responsibilities (adjusted OR = 0.3, 95% CI: 0.0-0.9), and the presence of a chief operator during shifts (adjusted OR = 0.1, 95% CI: 0.0-0.9).

Regarding personal accomplishment, operators who reported increased work-related challenges after the war compared with during the war were more likely to report low PA (adjusted OR = 4.0, 95% CI: 1.1–18.2). In contrast, access to professional development opportunities was associated with reduced odds of low PA (adjusted OR = 0.2, 95% CI: 0.0-0.8).

No factors were significantly associated with depersonalization or overall burnout status after adjustment for age and sex.

Sensitivity analyses using sample-derived burnout thresholds

Sensitivity analyses using sample-derived burnout thresholds produced a broadly similar pattern of associations to the primary analyses (Appendix D), although some associations differed in magnitude and statistical significance. For example, the association between concurrent employment and depersonalization was stronger and reached statistical significance under the sample-derived classification (adjusted OR = 5.7, 95% CI: 1.4–29.9).

To further assess the potential impact of sparse outcome events on the overall burnout outcome, a sensitivity analysis using Firth penalized logistic regression was conducted (Appendix E). Compared with the primary analyses, most associations were attenuated and accompanied by wide confidence intervals, reflecting the uncertainty associated with the small number of burnout cases. Supervisor responsiveness remained associated with lower odds of burnout (OR = 0.18, 95% CI: 0.03–0.94).

Discussion

This study examined burnout among operators of Lebanon's National Lifeline for Emotional Support and Suicide Prevention during the 2024 war, providing rare empirical evidence on helpline workforce well-being in an active conflict setting. Overall, 17.6% of operators met criteria for burnout. Although approximately half of operators reported moderate or high emotional exhaustion, most demonstrated low levels of depersonalization and relatively preserved personal accomplishment. This pattern suggests that, despite experiencing substantial emotional strain during the conflict, operators generally remained engaged with callers rather than becoming emotionally detached. Younger operators and those balancing additional employment appeared more likely to report elevated emotional exhaustion, while several organizational and relational factors were associated with more favourable burnout indicators. Taken together, the findings suggest that burnout indicators in crisis hotline settings may be associated with both exposure to emotionally demanding work and the organizational and operational context in which that work is delivered.

The higher levels of burnout indicators observed among younger operators are consistent with international evidence suggesting that early-career helping professionals may have fewer coping resources and less experience managing emotionally charged interactions [21]. However, concurrent employment remained independently associated with higher emotional exhaustion after adjustment for age and sex, suggesting that balancing multiple occupational roles may be an important correlate of emotional exhaustion beyond demographic differences alone. This association may reflect cumulative workload pressures within a context of economic instability, where operators combine crisis hotline work with additional employment, although the cross-sectional design does not allow the direction of this relationship to be established. This interpretation is consistent with broader literature reporting associations between financial strain, competing job demands, and burnout among mental health and crisis support workers [22].

At the same time, several organizational and relational factors were associated with more favourable burnout indicators. Meaningful engagement with the role, perceived institutional support, and aspects of supervision and workplace support were associated with more favourable burnout indicators across different burnout dimensions. These findings are consistent with evidence reporting associations between prosocial motivation, a sense of purpose, and more favourable occupational well-being among helping professionals [23, 24], as well as associations between supportive organizational environments and occupational well-being [25]. In this study, relational engagement with callers was also associated with more favourable burnout indicators, alongside associations observed for organizational factors including supervision, communication clarity, and opportunities for professional development.

The observed associations between organizational factors and burnout indicators should be interpreted cautiously. Given the cross-sectional design, the direction of these associations cannot be established; operators experiencing greater emotional exhaustion or other burnout indicators may, for example, have perceived organizational support and workplace conditions less positively than their peers. In addition, the majority of observed associations related to individual burnout dimensions rather than overall burnout syndrome. Emotional exhaustion, depersonalization, and reduced personal accomplishment capture distinct aspects of occupational well-being and may have different clinical and operational implications. Findings involving depersonalization should be interpreted with particular caution given the comparatively lower internal consistency of this subscale in the present sample, which may have reduced measurement precision. Given the small number of participants meeting criteria for overall burnout, the present findings may be more informative regarding factors associated with elevated burnout indicators than with burnout syndrome itself.

This interpretation is further supported by the sensitivity analyses, which indicated that some observed associations varied according to outcome definition. While the overall pattern of findings was generally similar across analyses, some associations varied in magnitude and statistical significance. Several caller-engagement indicators emerged as significant only in the sensitivity analyses. These findings suggest that some associations may be sensitive to how burnout dimensions are operationalized, particularly in small samples. Taken together, these findings reinforce the exploratory and hypothesis-generating nature of the analyses and the need for prospective longitudinal studies to clarify the direction and robustness of these relationships and examine how burnout indicators evolve before, during, and after periods of crisis.

Qualitative responses further contextualized the findings and provided additional insight into organizational conditions that operators perceived as relevant to their well-being. Operators identified flexible work arrangements, supervisory support, and team cohesion as supportive during the war. These accounts were broadly consistent with the quantitative findings and identified organizational support structures that may warrant further investigation in crisis settings.

Beyond the immediate organizational context, these findings identify potentially relevant considerations for crisis hotline services, particularly in low- and middle-income and conflict-affected settings where helplines often serve as primary entry points to mental health support. The findings may inform consideration of structured duty-of-care frameworks that position operator well-being as a component of service infrastructure. Potential organizational approaches warranting further investigation include strengthening supervision structures, fostering peer support, ensuring clear communication processes, providing opportunities for professional development, and maintaining flexible operational arrangements during periods of crisis. However, the present findings are hypothesis-generating, and intervention studies are needed to determine whether such approaches effectively reduce burnout among crisis hotline operators. Practical considerations informed by the quantitative and qualitative findings are summarized in Table 5.

If supported by future longitudinal and intervention research, implementation of such approaches would require sustained institutional commitment, including dedicated resources for supervision, training, and workforce support, alongside ongoing monitoring of staff well-being and service performance. In fragile and conflict-affected settings, further evaluation is needed to determine whether such organizational approaches can contribute to operator well-being and service continuity.

Strengths and limitations

This study has several strengths. It provides rare empirical data on burnout among crisis hotline operators working during active conflict, a population that remains underrepresented in the literature despite their central role in mental health response systems. The use of standardized burnout measures alongside contextual survey data offers a more comprehensive understanding of operator experiences in a real-world crisis setting. In addition, examining both individual and organizational factors enables a more nuanced interpretation of burnout as a multidimensional phenomenon associated with both personal and structural influences.

Table 1 Demographic and work characteristics of lifeline operators according to burnout dimensions and overall burnout status

Variable	All ($n=51$)	EE≥moderate ($n=26$)	DP≥moderate ($n=17$)	Low PA ($n=16$)	Burnout ($n=9$)
Demographics					
Age (years)					
18–24	33 (64.7)	19 (73.1)	11 (64.7)	10 (62.5)	8 (88.9)
25–34	16 (31.4)	7 (26.9)	6 (35.3)	5 (31.2)	1 (11.1)
≥35	2 (3.9)	0 (0.0)	0 (0.0)	1 (6.2)	0 (0.0)
Sex (female)	41 (80.4)	21 (80.8)	12 (70.6)	12 (75.0)	7 (77.8)
Relationship status					
Single	50 (98.0)	26 (100.0)	16 (94.1)	15 (93.8)	9 (100.0)
Widowed/divorced/ separated	1 (2.0)	0 (0.0)	1 (5.9)	1 (6.2)	0 (0.0)
Education level					
High school	1 (2.0)	0 (0.0)	0 (0.0)	1 (6.2)	0 (0.0)
Bachelor's	22 (43.1)	11 (42.3)	7 (41.2)	5 (31.2)	3 (33.3)
Master's	28 (54.9)	15 (57.7)	10 (58.8)	10 (62.5)	6 (66.7)
Work characteristics					
Duration as operator					
<6 months	10 (19.6)	6 (23.1)	3 (17.6)	4 (25.0)	2 (22.2)
6–12 months	20 (39.2)	8 (30.8)	7 (41.2)	3 (18.8)	3 (33.3)
1–3 years	16 (31.4)	12 (46.2)	6 (35.3)	7 (43.8)	4 (44.4)
≥3 years	5 (9.8)	0 (0.0)	1 (5.9)	2 (12.5)	0 (0.0)
Shifts per week					
1–2	50 (98.0)	25 (96.2)	17 (100.0)	16 (100.0)	9 (100.0)
3–4	1 (2.0)	1 (3.8)	0 (0.0)	0 (0.0)	0 (0.0)
Concurrent employment	32 (62.7)	19 (73.1)	13 (76.5)	8 (50.0)	6 (66.7)
Hours per week					
<10 h	6 (18.8)	4 (21.1)	1 (7.7)	2 (25.0)	0 (0.0)
10–20 h	4 (12.5)	2 (10.5)	2 (15.4)	0 (0.0)	0 (0.0)
≥20 h	22 (68.8)	13 (68.4)	10 (76.9)	6 (75.0)	6 (100.0)

Table 2 Burnout levels among Lifeline operators according to the maslach burnout inventory-human services survey (MBI-HSS) ($n=51$)

Burnout Dimension	Mean (SD)	High *n* (%)	Moderate *n* (%)	Low *n* (%)
Emotional Exhaustion (EE)	19.59 (13.11)	14 (27.5)	12 (23.5)	25 (49.0)
Depersonalization (DP)	5.39 (5.05)	5 (9.8)	12 (23.5)	34 (66.7)
Personal Accomplishment (PA)	34.35 (8.07)	18 (35.3)	17 (33.3)	16 (31.4)

Several limitations should nevertheless be acknowledged. First, the cross-sectional design precludes causal inference between organizational, occupational, or individual factors and burnout outcomes. Temporal relationships could not be established, and reverse causality cannot be ruled out. Second, the use of a self-administered online survey introduces potential response biases, including social desirability and recall bias. Burnout was assessed retrospectively following the conflict period, which may have influenced participants' reporting of their experiences. Although the MBI-HSS demonstrated excellent internal consistency for the emotional exhaustion subscale and acceptable internal consistency for the personal accomplishment subscale in the present sample, the depersonalization subscale showed comparatively lower internal consistency (Cronbach's $\alpha=0.59$), which may have reduced measurement precision for this dimension. In addition, many of the contextual variables examined were developed for the purpose of this study and had not undergone formal psychometric validation. Most were measured using single-item indicators, precluding assessment of internal consistency and increasing the potential for measurement error. Although these items were designed to capture context-specific organizational, relational, and operational experiences while minimizing respondent burden, they may not fully capture the complexity of

Table 3 Work-related, organizational, relational, and motivational factors among lifeline operators, overall and according to burnout indicators (%)

Variable	All ($n=51$)	EE≥moderate ($n=26$)	DP≥moderate ($n=17$)	Low PA ($n=16$)	Burnout ($n=9$)
Work and Operational Factors					
Emotional difficulty	90.2	100.0	94.1	93.8	100.0
Challenging calls	78.4	76.9	82.4	87.5	77.8
Negative impact of war on well-being and call management	92.1	96.1	100.0	100.0	100.0
Increased challenges during vs. before the war	92.1	96.1	88.3	81.3	88.9
Increased challenges after vs. during the war	49.0	50.0	47.0	68.8	66.7
Increase in call volume/severity after the war	52.9	53.8	47.1	43.8	55.6
Personally affected by callers' war experiences	56.9	57.7	47.0	56.3	55.6
Organizational response perceived as helpful	68.6	50.0	52.9	62.5	55.6
Training perceived as effective	92.2	88.5	88.2	93.8	100.0
Organizational and Work Environment Factors					
Satisfaction with supervisory support	96.1	92.3	100.0	100.0	100.0
Presence of chief operator during shifts	82.4	73.1	70.6	87.5	88.9
Clear communication about shift responsibilities	58.8	46.2	52.9	56.3	55.6
Debriefing with supervisors after calls	74.5	65.4	76.5	62.5	77.8
Availability of operators on shift	45.1	46.2	41.2	50.0	33.3
Quiet work environment	60.8	53.8	64.7	43.8	55.6
Functioning technical equipment	43.1	46.2	35.3	43.8	55.6
Participation in wellness activities	19.6	19.2	35.3	18.8	44.4
Support, Coping, and Relational Factors					
Receiving support from supervisors	82.4	76.9	94.1	75.0	100.0
Receiving support from peers	72.5	76.9	70.6	75.0	88.9
Engaging in active listening	72.5	61.5	76.5	56.3	77.8
Maintaining emotional focus during calls	47.1	42.3	41.2	50.0	44.4
Building connection with callers	52.9	38.5	47.1	62.5	55.6
Collaborating with callers	51.0	50.0	47.1	37.5	55.6
Access to mental health support	39.2	34.6	35.3	31.3	44.4
Managing callers at imminent risk	37.3	34.6	41.2	31.3	55.6
Motivational and Professional Factors					
Satisfaction with operator role	82.3	69.3	88.2	81.3	77.8
Intrinsic motivation	76.5	61.5	88.2	68.8	77.8
Extrinsic motivation	68.6	61.5	76.5	68.8	77.8
Opportunities for professional development	80.4	84.6	88.2	62.5	88.9

the underlying constructs. Consequently, associations involving these variables should be interpreted as exploratory and warrant confirmation using validated measures in future research. Third, the relatively small sample size ($n=51$), coupled with the limited number of participants meeting criteria for burnout, restricted statistical power and increased the potential for sparse-data bias and unstable regression estimates. No formal a priori sample size calculation was undertaken because the study sought to recruit the entire eligible operator population; consequently, the study was not designed or powered to detect specific associations. Although adjusted analyses were conducted to explore potential associations, the resulting effect estimates should be interpreted cautiously. To address this concern, a Firth penalized logistic regression sensitivity analysis was conducted for the overall burnout outcome; however, all regression findings remain exploratory and hypothesis-generating. Fourth, the response rate of 53.1% raises the possibility of non-response bias. Operators experiencing higher levels of burnout may have been less likely to participate because of fatigue or disengagement, whereas those who were more engaged with the service may have been more inclined to respond. Because information on non-responders was not available, the direction and magnitude of any such bias could not be assessed. Consequently, the representativeness of the sample, the estimated prevalence of burnout, and the generalizability of the findings should be interpreted with caution. In addition, a large number of exploratory associations were examined across multiple

Table 4 Factors associated with burnout outcomes among lifeline operators based on standard MBI-HSS classifications

Predictor	Moderate/High Emotional Exhaustion aOR (95% CI)	Moderate/High Depersonalization aOR (95% CI)	Low Personal Accomplishment aOR (95% CI)	Burnout aOR (95% CI)
Concurrent employment (yes vs. no)	**4.1 (1.1–17.1)**	2.7 (0.7–12.1)	0.3 (0.1–1.3)	1.9 (0.4–10.7)
Satisfaction with operator role (higher vs. lower)	**0.1 (0.0-0.7)**	2.2 (0.4–18.3)	0.8 (0.1–4.9)	1.2 (0.2–9.5)
Organizational response to war perceived as helpful	**0.1 (0.0-0.4)**	0.3 (0.1–1.3)	0.7 (0.2–2.6)	0.4 (0.1–2.3)
Intrinsic motivation	**0.1 (0.0-0.7)**	3.3 (0.7–24.7)	0.5 (0.1–2.1)	1.5 (0.2–11.7)
Building connection with callers	**0.2 (0.0-0.7)**	0.6 (0.1–2.1)	1.8 (0.5–6.7)	0.8 (0.1-4.0)
Clear communication about shift responsibilities	**0.3 (0.0-0.9)**	0.6 (0.2–2.2)	0.8 (0.2–2.9)	0.7 (0.1–3.7)
Presence of chief operator during shifts	**0.1 (0.0-0.9)**	0.3 (0.0-1.8)	2.2 (0.4–18.6)	1.9 (0.2–41.2)
Increased work-related challenges after vs. during war	0.8 (0.2–2.7)	0.7 (0.2–2.7)	**4.0 (1.06–18.2)**	1.7 (0.3–9.4)
Opportunities for professional development	1.4 (0.3–6.5)	2.5 (0.4–19.7)	**0.19 (0.0-0.8)**	1.4 (0.1–29.6)

Note: Because only nine participants met the study definition of burnout, the regression estimates for the overall burnout outcome should be interpreted cautiously and viewed as exploratory

Abbreviations:role="presentation" dir="ltr" role="presentation" dir="ltr"aOR, adjusted odds ratio; CI, confidence interval; EE, emotional exhaustion; DP, depersonalization;role="presentation" dir="ltr"PA, personal accomplishment

Adjusted odds ratios control for participant age category and sex. Selected predictors are presented to improve readability. Because of the limited number of participants meeting criteria for burnout, the adjusted odds ratios should be interpreted as exploratory indicators of possible associations rather than precise estimates of effect size

Table 5 Practical considerations for lifeline operations informed by study findings

Study Finding	Practical Implication
Supervisory responsiveness and supervisory presence were associated with more favourable burnout indicators.	Ensure regular access to supervision and supervisory support during shifts, particularly during periods of crisis and increased workload.
Positive perceptions of the organizational response to the war were associated with lower emotional exhaustion.	Integrate staff-support mechanisms, clear communication channels, and workforce well-being considerations into organizational crisis-response planning.
Clear communication regarding shift responsibilities was associated with more favourable burnout indicators.	Establish clear communication pathways, role expectations, and escalation procedures to reduce uncertainty during crisis operations.
Opportunities for professional development were associated with more favourable personal accomplishment.	Provide ongoing training and professional development opportunities that enhance operator competence, confidence, and sense of accomplishment.
Relational engagement with callers was associated with more favourable burnout indicators.	Support the development of active listening, empathic engagement, and relationship-building skills through training and supervision.
Qualitative findings highlighted the value of flexible work arrangements, remote call-taking, and team cohesion during the war.	Maintain operational flexibility and foster peer connectedness during emergencies to support workforce sustainability and service continuity.

Note: These practical considerations should be interpreted as hypothesis-generating operational considerations informed by the study findings and existing literature, rather than evidence-based interventions that have been demonstrated to reduce burnout

burnout outcomes and sensitivity analyses, increasing the risk of type I error. Consequently, statistically significant findings should be interpreted cautiously until replicated in larger studies. Fifth, although models adjusted for age and sex, unmeasured factors such as prior mental health status, caregiving responsibilities, financial hardship, or direct exposure to war-related trauma may have influenced burnout outcomes and burnout indicators. In addition, objective workload indicators such as call volume, average call duration, shift workload, and the proportion of high-risk or suicide-related calls were not available. These factors may be associated with operator well-being and could potentially confound the observed relationships between organizational factors and burnout indicators. Future research should integrate objective operational metrics with self-reported measures to better understand the relationship between workload characteristics and burnout indicators among crisis hotline operators. Finally, the findings were derived from a single national suicide prevention service operating within the unique humanitarian context of Lebanon. Organizational structures, supervision models, volunteer training

programmes, and crisis-response systems vary substantially across countries and services, which may further limit the external generalizability of these findings. Nevertheless, many of the organizational challenges and structural stressors identified are likely to be relevant to crisis response environments more broadly.

Conclusion

This study provides rare empirical evidence on burnout among suicide prevention hotline operators working during active conflict, identifying potentially relevant considerations for workforce sustainability in crisis mental health services. The findings suggest that burnout indicators are associated with several organizational, relational, and occupational factors, including supervision, communication clarity, professional development opportunities, operational flexibility, workload, and motivation. Given the cross-sectional and exploratory nature of the study, these associations should be interpreted as hypothesis-generating rather than evidence of causal effects.

Beyond the Lebanese context, these findings identify organizational and workforce factors that may warrant further investigation in conflict-affected and resource-constrained settings, where helplines often serve as critical entry points to mental health care. In particular, supervision systems, workforce support mechanisms, and adaptive operational practices represent potential areas for further evaluation in relation to operator well-being and service sustainability.

Future longitudinal research should examine burnout trajectories and evaluate whether organizational interventions can improve operator well-being and support the continuity and quality of crisis hotline services during periods of heightened population distress.

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Author contributions DF conceptualized and designed the study, led the data analysis and interpretation, and drafted the manuscript. MEH, RF and GC contributed to analysis. JA, PN, LZ and MA reviewed the manuscript. REC provided senior oversight and revised the manuscript. All authors read and approved the final manuscript.

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Data availability The datasets generated and/or analyzed during the current study are not publicly available.

Declarations

Ethics approval and consent to participate This study was approved by the Institutional Review Board (IRB) of the Lebanese University. Participation was voluntary and anonymous. Informed consent was obtained electronically prior to survey initiation, and participants were informed of their right to withdraw at any time without consequence.

Consent for publication Not applicable.

Competing interests The authors declare no competing interests.

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Authors and Affiliations

Dina Farran[1] · Mahatab El Haj[1] · Ghida Chiha[1] · Rahaf El Fouani[2,3] · Jinane Abi Ramia[2,3] · Philip Noun[4] · Lea Zeinoun[1] · Mia Atoui[1] · Rabih El Chammay[2,5]

✉ Dina Farran
Dina.farran@embracelebanon.org

[1] Embrace, Beirut, Lebanon

[2] National Mental Health Program, Lebanese Ministry of Public Health, Beirut, Lebanon

[3] Department of Clinical, Neuro and Developmental Psychology; WHO Collaborating Center for Research and Dissemination of Psychological Interventions, Amsterdam Public Health Research Institute, Vrije Universiteit Amsterdam, Amsterdam, the Netherlands

[4] Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Beirut, Lebanon

[5] Psychiatry Department, Faculty of Medicine, Saint Joseph University, Beirut, Lebanon