RESEARCH ARTICLES

# Workplace stressors and critical care nurses turnover intentions: Mediating role of emotional intelligence and sense of belonging


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## ABSTRACT

**Background:** Globally, healthcare systems struggle to retain critical care nurses (CCNs) due to high turnover intentions. The mediating roles of emotional intelligence and sense of belonging in mitigating moral distress, stress, and fatigue are insufficiently explored.

Objective: This study investigates how moral distress, work stress, and fatigue influence CCNs' turnover intentions through the mediating pathways of emotional intelligence and a sense of belonging.

Study design and methods: A multicentre, cross-sectional survey was conducted across eight public and private hospitals. The study enrolled 432 CCNs between May 20 and July 31, 2024. Each participant completed a validated, structured questionnaire that was self-administered and paper based. Descriptive statistics, ANOVA, independent samples t-tests, and path analysis were utilised for data analysis.

Results: CCNs reported high mean scores for fatigue (21.50), moral distress (65.10), and turnover intention (14.75). Path analysis indicated a direct significant positive effect of moral distress on fatigue (β=.69), work stress (β=.38), and indirectly on turnover intention (β=.12). Fatigue further intensified work stress (β=.40). Notably, significant moral distress was inversely associated with emotional intelligence (β=-.24) and positively with sense of belonging (β=.24). In turn, both emotional intelligence (β=-.31) and a sense of belonging (β=-.27) were negatively associated with turnover intentions.

Conclusions: This study elucidates the significant influence of adverse workplace factors, specifically moral distress, fatigue, and work stress, on the CCNs' turnover intentions. Such stressors erode core nursing competencies and present a tangible risk to patient care standards. Importantly, the results underscore the protective functions of emotional intelligence and a strong sense of belonging, which appear to attenuate the negative impact of these occupational stressors.

Implications for research, policy, and practice: By mitigating the impact of moral distress and cultivating a more supportive work environment, healthcare organisations can foster environments that reduce occupational stress, alleviate fatigue, and consequently decrease nurses' turnover intentions. Addressing these detrimental workplace dynamics is essential for enhancing the work environment for nurses and ensuring the provision of optimal patient care within healthcare settings.

**What is already known about the topic:**

- The demanding nature of the CCN role elevates professionals' susceptibility to adverse health outcomes, psychological distress, and turnover.


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- Emotional intelligence functions as a significant psychological buffer, promoting resilience and attenuating burnout.
- A strong sense of belonging, both within the team and organisations, is positively associated with job satisfaction, retention, and psychological well-being.

**What this paper adds:**

- This study provides empirical evidence for the mediating roles of emotional intelligence and sense of belonging in mitigating the negative effects of moral distress, work-related stress, and fatigue on CCNs' turnover intentions.
- Emotional intelligence operates dually: as a protective mechanism against psychological strain and as a relational catalyst enhancing sense of belonging.
- The deliberate fostering of emotional intelligence and institutional belonging is essential for maintaining workforce stability in demanding clinical settings.

**Keywords:** Critical care nurses, emotional intelligence, moral distress, sense of belonging, turnover intentions.

## INTRODUCTION

The global healthcare system is grappling with a significant nursing shortage, particularly in critical care settings.[1] A contributing factor to this crisis is the high rate of nurse turnover.[2] Critical care nurses (CCNs), who play a pivotal role in delivering complex, high-acuity care in intensive care units (ICUs) and emergency departments, are subjected to immense physical and emotional demands.[1,3] Such demanding work environments can exacerbate burnout and job dissatisfaction, ultimately leading to increased turnover rates. This shortage and the inherent challenges of CCNs can compromise patient care quality and safety.[4,5]

Moral distress (MD) arises when nurses are aware of the ethically correct course of action but are prevented from implementing it due to institutional or organisational constraints.[6] This distressing psychological state often stems from situations involving poor quality care or medically necessary but potentially harmful procedures.[7] Nurses experiencing MD may grapple with feelings of guilt, frustration, and anxiety, and may suffer from physical symptoms such as hypertension and headaches.[4] The impact of MD extends beyond individual nurses, potentially leading to job dissatisfaction, burnout, and decreased patient advocacy.[4,5] For healthcare organisations, MD can contribute to high turnover rates, compromised quality of care, and diminished patient satisfaction. Addressing and mitigating MD is essential for promoting the well-being of nurses and enhancing the overall quality of patient care.[5,7]

Nurses working in critical care settings face significant physical and psychological demands, which can lead to increased stress, fatigue, and potential negative impacts on both their health and patient care.[8,9] To address these challenges and enhance the well-being of CCNs, organisations are increasingly interested in strategies that promote worker health and ensure patient safety.[7] Emotional intelligence (EI), the ability to understand and manage one's own and others' emotions, has emerged as a crucial competency for nurses.[10] By fostering empathy, compassion, and effective communication, EI can mitigate stress, improve job satisfaction, and enhance patient care, particularly in demanding environments like critical care settings.[10,11]

A strong sense of workplace belongingness, characterised by feelings of acceptance, inclusion, and support, is essential for the well-being and job satisfaction of healthcare professionals, including nurses.[12] When employees feel valued, respected, and connected to their organisations, they are more likely to experience increased job satisfaction, loyalty, and engagement.[12,13] It is widely recognised that uncivil behaviours encountered in the workplace can have detrimental effects on CCNs.[14] However, despite its recognised importance, there remains a significant gap in research on effective interventions to cultivate EI and a sense of belonging among CCNs.

### THEORETICAL FRAMEWORK

The pervasive challenge of CCNs turnover represents a critical failure in the alignment between healthcare systems and the professionals they employ. To deconstruct this phenomenon, we propose an integrated theoretical model that delineates the psychological pathway from chronic workplace stressors to voluntary exit. Our conceptual framework, illustrated in Figure 1, posits that certain work stressors, namely, high job demands (vs. resources) and personal values conflict, initiate a deleterious process of resource depletion.

Drawing on the Job Demands-Resources (JD-R) model,[15] we hypothesise that sustained job demands pose a potential stressor that can directly deplete emotional energy, a core tenet of Conservation of Resources (COR) Theory. Furthermore, Lazarus & Folkman's transactional model of stress and coping proposes that stress is not caused by a single event but by the transaction between an individual and their environment.[10] This dynamic process of appraisal is critical; stress arises when demands are perceived to

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outweigh coping resource.[16] According to COR theory, the subsequent depletion of emotional energy manifests in adverse states of work stress, fatigue, and MD, collectively eroding health and well-being. When such resource depletion becomes chronic, individuals engage in self-protective withdrawal, which we operationalise as turnover intention.[17]

This pathway, however, is not deterministic. The framework introduces two critical buffering systems. First, we position EI as a key individual-resource variable. Informed by Affective Events Theory and Emotional Competency Theory,[18] we propose that EI mitigates the impact of stressors on resource depletion by enabling more adaptive emotional regulation and coping, thereby reducing the intensity of work stress and MD. Second, we identify the organisational and team climate as a critical contextual moderator. Social Identity Theory asserts that a climate fostering a sense of belonging strengthens identification with the organisational in-group.[19] We hypothesise that this sense of belonging directly weakens the link between resource depletion (e.g. fatigue, MD) and turnover intention, providing a social reason to remain despite psychological costs.

In summary, our model moves beyond siloed theoretical explanations to offer a synthesised view of CCNs turnover. It charts a core negative pathway from stressors to exit, while theorising how both personal capacity (EI) and the social environment (climate/belonging) can interrupt this progression, offering clear, testable targets for intervention. The global nursing shortage underscores the urgent need to move beyond superficial acknowledgments toward a mechanistic understanding of its drivers.[1] This study examines the impact of MD, work-related stress, and fatigue, critical manifestations of resource depletion, on turnover intention among CCNs. Specifically, we assess the potential for mitigation through two theorised resources: EI as an internal regulatory resource and sense of belonging as an external social resource. By testing this integrated model in the high-acuity clinical environment, the findings aim to inform the design of targeted interventions that bolster psychological resources and peer support. This research is critically needed to address a significant empirical gap in the literature concerning the work environments of Yemeni hospitals, where such data are presently scarce.

### HYPOTHESIS

Drawing on the integrated theoretical framework of psychological resource depletion, the following hypotheses are formulated:

- **H1:** Workplace stressors (i.e., work stress, MD, fatigue) will exhibit significant positive direct effects on turnover intention.
- **H2:** Emotional intelligence and sense of belonging will independently mediate the relationship between workplace stressors and turnover intention.

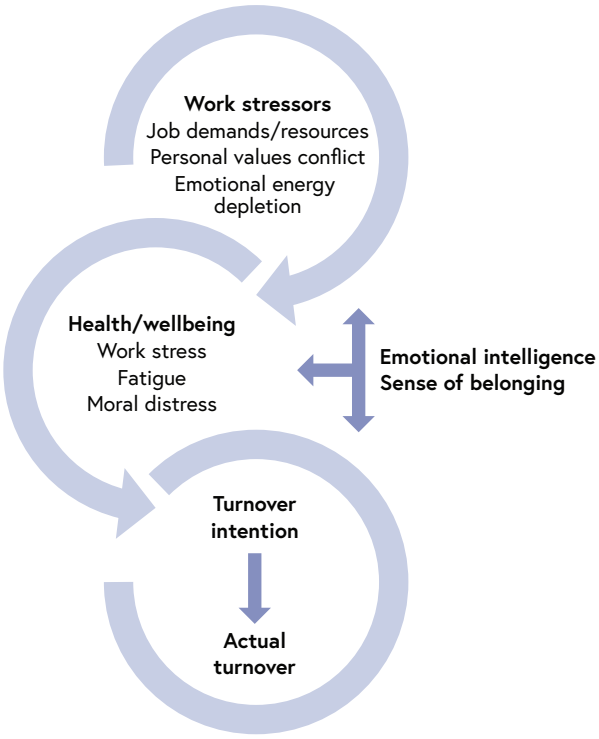


FIGURE. 1. CONCEPTUAL FRAMEWORK OF THE RELATION BETWEEN WORKPLACE STRESSORS AND CCNS TURNOVER INTENTION

- **H3:** Workplace stressors will have a significant positive indirect effect on turnover intention through the mediating pathway of reduced EI and sense of belonging.

## STUDY DESIGN AND METHODS

### SETTING AND SAMPLE

This study utilised a descriptive, multicentre, cross-sectional survey design. Participants were recruited from 20 ICUs across eight regional public and private hospitals in Sana'a. These facilities provide a broad spectrum of healthcare services, serving the local population of Yemen and a majority of the surrounding governorates. A convenience sample of 395 CCNs was recruited at their workplaces during scheduled shifts. Eligibility criteria mandated a minimum of six months of clinical experience in an ICU setting and the provision of informed consent. CCNs who held concurrent employment in both private and public (or teaching) hospitals were excluded to mitigate potential confounding effects related to divergent institutional practices.

### SAMPLE SIZE DETERMINATION

A prospective power analysis was conducted to determine the minimum required sample size. Guided by the methodological convention for path analysis, which recommends 10–20 cases per estimated parameter,[20] and with a model comprising 6 parameters, a minimum sample size of

60 to 120 was initially indicated. To ensure robust statistical power for detecting significant path effects and to account for potential model complexity beyond the specified parameters, we targeted a sample size substantially above this minimum. Furthermore, to compensate for an anticipated 10% nonresponse rate, the target sample was inflated accordingly. This comprehensive approach resulted in a final target sample of 395 participants, which adequately satisfies the requirements for the planned analytical techniques.

## DATA COLLECTION TOOLS AND METHODS

The study instruments were selected based on their robust psychometric properties, as established in prior research.[21-25] Their cross-cultural adaptation followed established guidelines for simultaneous development and translation frameworks for existing surveys.[26] We employed a forward-backward translation protocol, which involved an initial translation from English to Arabic. A blinded, independent translator then back translated this version into English. Subsequently, content validity was established through an expert panel of six content experts (four PhD-prepared nurses and two psychologists) and two Arabic language PhDs, who assessed linguistic and cultural appropriateness. Panel members rated each item's relevance, clarity, and appropriateness on a three-point scale (1=not necessary, 2=useful but not essential, 3=essential). We computed both item-level (I-CVI) and scale-level (S-CVI) content validity indices. All I-CVI and S-CVI values exceeded the recommended threshold of 0.80,[27] confirming strong content validity and resulting in the retention of all items. Subsequently, the internal consistency of the scales was assessed. Following the establishment of validity and reliability, summated scores were computed to represent the latent constructs for all subsequent analyses.

*Turnover intentions* were measured using the four-item scale developed by Alberts et al.[21] Respondents indicated their agreement with each item (e.g. "I am planning to look for a new job") on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The measure demonstrated strong internal consistency in the original development study (α=.93), which was replicated in the present sample (α=.82).

*Emotional intelligence* was measured using the 16-item Wong and Law Emotional Intelligence Scale (WLEIS).[22] CCNs responded on a seven-point Likert scale ranging from "1 (strongly disagree) to 7 (strongly agree)". The instrument comprises four distinct subscales: Self-emotions appraisal, others-emotions appraisal, use of emotion, and regulation of emotion, each containing four items. The WLEIS showed excellent internal consistency in the present sample (α=.90), aligning with the established reliability of the original instrument (α=.87).

The 12-item *Workplace Belongingness* Scale was used to assess CCNs perceived sense of belonging in their workplace. This instrument employs a 5-point Likert scale, ranging from "1 (strongly disagree) to 5 (strongly agree)", where higher scores indicate a stronger sense of belonging. All items on the scale are positively worded.[23] In this study, it demonstrated excellent internal consistency (Cronbach's α=.86)

*Work-related stress* among CCNs was evaluated using the 10-item Perceived Stress Scale (PSS). Items are rated on a 5-point Likert scale from 0 (never) to 4 (very often). Consistent with the standard scoring protocol, responses for items 4, 5, 7, and 8 were reverse-scored prior to summing all items to generate a total stress score.[24] The scale has previously demonstrated strong internal consistency (α=0.86). In the present study, it also exhibited excellent reliability (Cronbach's α=.88).

*Moral distress* was assessed using a revised 21-item Moral Distress Scale.[28] Responses on this Likert-type instrument range from 0 (never) to 4 (very frequently), measuring the frequency of MD experienced in critical care settings across five factors: "lack of competence in the work," "ignoring," "futile care," "absolute follow the physician's orders and unsafe care," and "providing care under personal and organisational pressures." The original validation study reported strong internal consistency for the overall scale (α > 0.73). In the current sample, this excellent reliability was replicated (Cronbach's α=.93).

The Shortened Fatigue Questionnaire (SFQ) was used to assess fatigue.[25] The instrument comprises of four items: "I tire easily," "I feel tired," "I feel fit," and "I feel physically exhausted." Participants rated each item on a 7-point Likert scale ranging from 1 ("yes, that is true") to 7 ("no, that is not true"). To calculate the total score, responses to the third item ("I feel fit") were reverse scored, after which the scores for all four items were summed. The instrument has previously demonstrated strong internal consistency (α=0.88). In the current sample, the SFQ showed excellent reliability, with a Cronbach's α of .94.

To ensure consistent data collection procedures, three nurses from both the ICU and emergency department were purposively selected to represent a range of clinical shifts. Following a standardised training session on the study protocol, these nurse-data collectors were responsible for participant recruitment. They obtained informed consent by detailing the study's purpose, ensuring anonymity and confidentiality, and advising participants of their right to withdraw without penalty. Subsequently, the nurses distributed the questionnaires, the first page of which contained a written consent form. Upon return, each questionnaire was immediately reviewed for completeness. Any with missing data were promptly returned to the participant for completion. Data collection took place between May 20 and July 31, 2024.

### DATA ANALYSIS

The data analysis proceeded in two primary stages. Initial data management and statistical analyses were performed in IBM SPSS Statistics (Version 26). Subsequently, the hypothesised structural equation model was tested using Amos Graphics (Version 24) (SPSS Inc., Chicago, IL, USA).

Prior to primary analysis, all continuous variables underwent rigorous screening for univariate normality. This was assessed through both statistical tests "Kolmogorov–Smirnov" and the examination of skewness and kurtosis indices. The observed values for skewness (range: -1.22 to 0.66) and kurtosis (range: -0.13 to 1.07) fell well within the conventional thresholds of ±2,[29] thus supporting the assumption of normality and the use of parametric tests.

Descriptive statistics, including frequencies and percentages for categorical variables; means and standard deviations for continuous variables, were computed to characterise the sample. To examine group differences in key demographic and study variables, independent samples t-tests and one-way Analysis of Variance (ANOVA) were employed. Where ANOVA results indicated significant omnibus effects, Tukey's Honestly Significant Difference (HSD) post-hoc test was applied to control for Type I error while making pairwise comparisons. Practical significance was quantified using Cohen's d for two-group comparisons and Eta-squared for multiple groups explained. Bivariate associations between continuous variables of interest were quantified using Pearson's correlation coefficient ($r$).

The core research objective and hypothesis, which proposed a theoretically derived mediating mechanism, was tested using path analysis within a structural equation modelling (SEM) framework. To rigorously test the significance of the proposed indirect (mediation) effects, we employed a bootstrapping procedure with 5,000 resamples. The final measurement model demonstrated a good fit to the data, as indicated by the following indices: Chi-square=6.996, DF=3, p=.072, CMIN/DF=2.332, GFI=.994, NFI=.991, RFI=.956, IFI=.995, TLI=.974, CFI=.995, and RMSEA=.058. All statistical tests were two-tailed, with a pre-determined significance level of α=0.05.

### ETHICAL AND INSTITUTIONAL APPROVALS

This study adhered to the Declaration of Helsinki [30] and received ethical approval from Al-Razi University (grant numbers: RU/02/FMHS/2023). The Research Ethics Committee reviewed and approved the study protocol on December 01, 2023. Approval was also obtained from relevant hospital authorities. All participating CCNs received comprehensive study information and provided written informed consent before completing the anonymous questionnaire. Data access was strictly limited to the research team, ensuring participant non-identifiability.

## RESULTS

### CCNS CHARACTERISTICS AND ASSOCIATION WITH WORKPLACE STRESSORS AND TURNOVER INTENTION

Most CCNs in this study were aged 30 years or older (63.5%), females (51.9%), held a bachelor's degree (61.0%), and were married (57.0%). Most had five or fewer years of experience in critical care settings 170 (43.0%). Notably, a large majority (80.8%) reported that their monthly income was insufficient, with this being more common among those working in public and teaching hospitals (65.8%). Furthermore, nearly half of the nurses (48.9%) were assigned a heavy workload, defined in this context as caring for three critically ill patients concurrently. This patient load exceeds the standard nurse-to-patient ratio of 1:1 or 1:2, which is widely advocated in ICUs to ensure patient safety and quality of care.

CCNs aged over 40 years exhibited significantly higher scores for sense of belonging and lower turnover intentions ($p$=.035 and .002, respectively). Female nurses reported significantly higher levels of fatigue compared to male nurses ($p$=.021). Nurses with the marital status of divorced or widowed experienced significantly higher MD, as indicated by the significant difference between marital status and MD ($p$=.019). Nurses with more than 10 years of expertise demonstrated a significantly higher sense of belonging and lower turnover intentions ($p$=.048 and .011, respectively). Those reporting insufficient monthly income exhibited significantly higher turnover intentions ($p$=.007). Nurses employed in private hospitals reported significantly higher sense of belonging, EI, and lower turnover intentions ($p$=<.001, .010, and .036, respectively). Finally, nurses caring for three critical patients reported significantly higher fatigue, lower sense of belonging, and higher turnover intentions ($p$=.044, .014 and <.001, respectively). The observed effects, while statistically significant, are modest in magnitude, suggesting limited practical or clinical relevance (see Appendix).

#### Correlation matrix between workplace stressors and turnover intention

Table 1 presents the bivariate correlation matrix among the study variables. As anticipated in H1, turnover intention was positively associated with all measured workplace stressors, demonstrating significant, albeit weak, correlations with work stress ($r$=.225, $p$ < .001), MD ($r$=.217, $p$ < .001), and fatigue ($r$=.225, $p$ < .001). Further, the results offered preliminary evidence for the mediating mechanisms proposed in H2 and H3. Turnover intention exhibited moderate negative correlations with two key protective factors: sense of belonging ($r$=-.404, $p$ < .001) and EI ($r$=-.426, $p$ < .001). Notably, MD demonstrated strong associations with both work stress ($r$=.649, $p$ < .001) and fatigue ($r$=.687, $p$ < .001), and a similarly strong correlation emerged between fatigue and work

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## TABLE 1. CORRELATION MATRIX BETWEEN STUDY VARIABLES

| Variable | items | Score | Mean | SD | Correlation coefficient (r) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 |
| 1. Work stress | 10 | 0–40 | 25.49 | 5.31 | 1 | | | | | |
| 2. Moral distress | 21 | 0–84 | 65.10 | 3.85 | 0.649** | 1 | | | | |
| 3. Fatigue | 4 | 4–28 | 21.49 | 3.27 | 0.655** | 0.687** | 1 | | | |
| 4. Sense of belonging | 12 | 12–60 | 43.65 | 5.26 | –0.246** | –0.152** | –0.286** | 1 | | |
| 5. Emotional intelligence | 16 | 16–112 | 65.77 | 14.76 | –0.166** | –0.268** | –0.220** | 0.431** | 1 | |
| 6. Turnover intentions | 4 | 4–20 | 14.75 | 3.51 | 0.225** | 0.217** | 0.225** | –0.404** | –0.426** | 1 |

Notes: **Correlation is significant at the 0.01 level; α=Cronbach's alpha; SD=Standard deviation

stress ($r$=.655, $p$ < .001). Finally, EI appeared to function as a potential buffer. It was positively and moderately correlated with sense of belonging ($r$=.431, $p$ < .001) and showed significant, though weaker, inverse relationships with work stress ($r$=-.166, $p$ < .001), MD ($r$=-.268, $p$ < .001), and fatigue ($r$=-.220, $p$ < .001).

### Mediation model

To test the proposed mediation model, we examined the direct, indirect, and total effects within the path model (Figure 2, Table 2). The findings provide strong evidence for the mediating pathways. First, the path analysis offered partial support for Hypothesis 1 (H1), which posited a direct effect of workplace stressors on turnover intention. While the direct paths from individual stressors to turnover intention within the complex model were not all significant, the model confirmed that MD operates as a primary driver within the stressor network, exerting a significant direct positive effect on both fatigue (β=.69, 95% CI=.49-.83, p=.001) and work stress (β=.38, 95%CI=.25-.55, p=.001). Fatigue, in turn, was a significant direct predictor of work stress (β=.40 95% CI=.16-.53, p=.008).

Second, concerning the independent mediating roles (H2), the model revealed that MD had a significant direct negative effect on EI (β=-.24, 95%CI=-.39-.00, p=.050). In turn, EI was a potent, direct negative predictor of turnover intention (Total Effect: β=-.42, p < .001). Similarly, both MD (β=.24, 95%CI=.02-.38, p=.036) and work stress (β=-.15, 95%CI=-.27- -.03, p=.014) had significant direct effects on sense of belonging, which itself was a significant negative predictor of turnover intention. Crucially, the indirect effects through both mediators were statistically significant. Specifically, EI (β=-.31, 95% CI=-.39- -.21, p< .001) and sense of belonging (β=-.27, 95% CI=-.36- -.16, p=.001) significantly buffered the adverse effects of the stressors, thereby reducing turnover intention. These findings fully support H2.

Third, regarding the indirect effect pathways (H3), the analysis confirms that workplace stressors exert a significant positive indirect effect on turnover intention through the serial depletion of EI and sense of belonging. The model elucidates a clear cascade: MD directly increases fatigue (β=.69, 95%CI=.49-.83, p=.001) and work stress (β=.38, 95%CI=.25-.55, p=.001). The decomposed indirect effects were significant, demonstrating that MD increases turnover intention through its negative impact on EI (β=.07, p=.034).

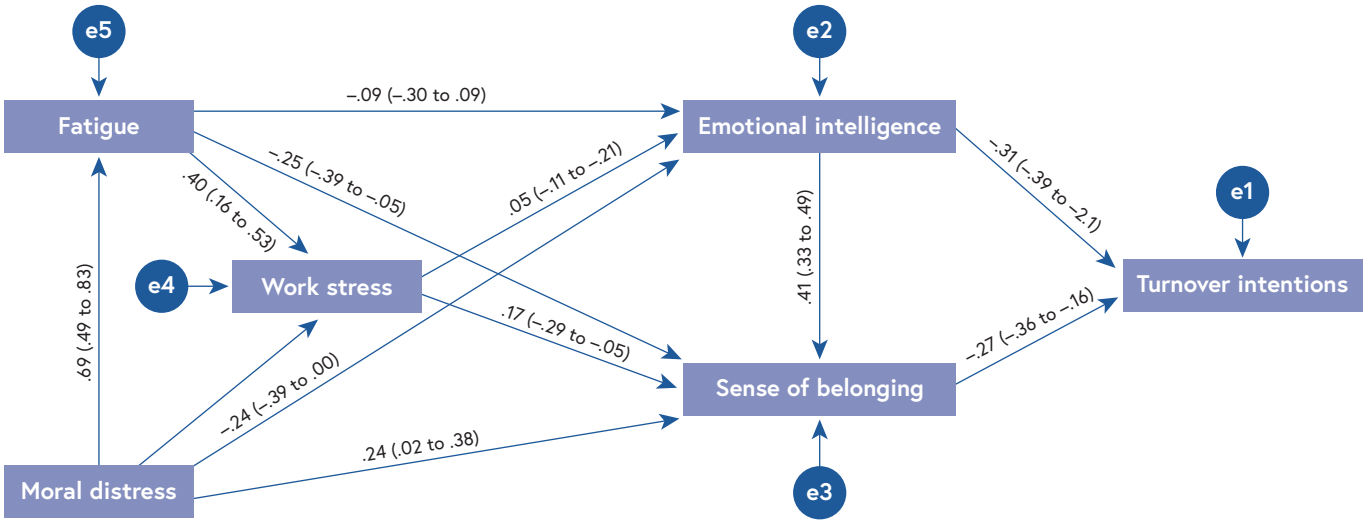


FIGURE 2. MEDIATION MODEL OF EMOTIONAL INTELLIGENCE AND SENSE OF BELONGING BETWEEN WORKPLACE STRESSORS AND TURNOVER INTENTIONS OF CCNS

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**TABLE 2. STANDARDISED INDIRECT, AND TOTAL EFFECTS OF STUDY VARIABLES**

| Variables | Indirect effects | | | Total effects | | |
|---|---|---|---|---|---|---|
| | β | 95%CI | *p* | β | 95%CI | *p* |
| MD –> WS | 0.27* | 0.17 to 0.35 | 0.002 | 0.65 | 0.53 to 0.74 | 0.001 |
| MD –> EI | –0.03* | –0.22 to 0.08 | 0.602 | –0.27 | –0.36 to –0.16 | <0.001 |
| MD –> SB | –0.39* | –0.50 to –0.26 | <0.001 | –0.15 | –0.27 to –0.02 | 0.016 |
| MD –>TI | 0.12* | 0.06 to 0.18 | <0.001 | | | |
| Ft –> EI | 0.02* | –0.03 to 0.10 | 0.473 | –0.07 | –0.29 to –0.08 | 0.380 |
| Ft –> SB | –0.10* | –0.18 to –0.01 | 0.027 | –0.34 | –0.46 to –0.14 | 0.005 |
| Ft –> TI | 0.11* | 0.03 to 0.18 | 0.008 | | | |
| WS –> SB | 0.02* | –0.04 to 0.09 | 0.575 | –0.15 | –0.27 to –0.03 | 0.014 |
| WS –> TI | 0.03* | –0.04 to 0.09 | 0.445 | | | |
| EI –> TI | –0.11* | –0.16 to –0.06 | <0.001 | –0.42 | –0.48 to –0.34 | <0.001 |
| MD –> EI –>TI | 0.07 | 0.01 to 0.12 | 0.034 | | | |
| MD –>SB –>TI | –0.06 | –0.10 to –0.01 | 0.020 | | | |
| Ft –>EI –>TI | 0.03 | –0.02 to 0.10 | 0.322 | | | |
| Ft –>SB –>TI | 0.07 | 0.02 to 0.12 | 0.014 | | | |
| WS –>EI –>TI | –0.01 | –0.04 to 0.02 | 0.548 | | | |
| WS –>SB –>TI | 0.03 | 0.01 to 0.06 | 0.003 | | | |
| EI –>SB –>TI | –0.03 | –0.04 to –0.02 | <0.001 | | | |

Notes: *=total indirect effect; MD=moral distress; Ft=fatigue; WS=work stress; EI=emotional intelligence; SB=sense of belonging; TI=turnover intention

Furthermore, both fatigue and work stress exerted significant positive indirect effects on turnover intention through the mediating pathway of a reduced sense of belonging (β=.07, p=.014 and β=.03, p=.003, respectively). It is noteworthy, however, that not all indirect pathways were significant; the specific paths from fatigue and work stress through EI were non-significant (p > .05). Nevertheless, the preponderance of evidence, particularly the significant serial pathways, provides robust support for H3.

## DISCUSSION

This study is the first in the region to delineate the complex interrelationships among MD, work stress, fatigue, sense of belonging, EI, and turnover intention in CCNs. The primary objective was to test a theoretical model positioning EI and sense of belonging as critical mediators between workplace stressors and turnover intention. The findings confirm the hypothesised model, revealing a nuanced network of direct and indirect pathways that elucidate the psychological mechanisms underpinning CCNs' retention.

The findings revealed several salient demographic associations. Notably, CCNs over the age of 40 reported a stronger sense of belonging, a finding that may reflect the cumulative benefits of established professional networks, organisational socialisation, and the development of role-specific expertise and coping strategies.[31,32] These factors likely foster a more resilient professional identity, which buffers against turnover intention. Furthermore, female nurses reported higher levels of fatigue, a result consistent with literature highlighting the dual burden of professional and traditional domestic responsibilities.[33] We also observed that divorced or widowed nurses experienced heightened MD, potentially due to the compounding effects of significant personal loss, social isolation, and financial strain, which may deplete the emotional resources necessary to navigate ethical dilemmas. This finding is consistent with extant literature demonstrating that spousal loss, whether through divorce or bereavement, is associated with more severe manifestations of MD and burnout, which in turn correlate with poorer overall health outcomes.[34]

At the organisational level, our data aligns with and extends the existing corpus of evidence on nurse retention. For instance, our finding that employment in private hospitals positively influenced sense of belonging, EI, and turnover intentions underscores the profound role of organisational structures in nurse well-being. This corroborates the work of Nantsupawat et al., who identified the work environment as a pivotal factor in retention and burnout.[1] The protective role of a supportive environment can be explained by its capacity to provide crucial resources; recent evidence suggests that social support at work facilitates psychological recovery, thereby reducing exhaustion and enhancing job satisfaction.[35] Similarly, the detrimental impact of insufficient income on job satisfaction and retention, as noted in previous studies was also observed in our cohort.[31,36]

A central finding of this study is the pivotal role of MD as a driver of negative outcomes. Our mediation analyses reveal that MD operates indirectly by impairing two key protective resources: EI and sense of belonging. This suggests that recurrent ethical dilemmas do not just cause immediate psychological pain but also gradually deplete the very capacities CCNs need to cope effectively. A parallel pathway was identified for fatigue, which amplifies work stress, leading to a similar diminishment of EI and sense of belonging, thereby increasing turnover intention. These findings regarding the direct effect of MD align with a robust body of prior research demonstrate a strong correlation between MD and intent to leave the workplace.[5,7,37,38]

Interestingly, EI and sense of belonging were positively correlated, indicating a potential synergistic relationship. This synergy can be interpreted as a virtuous cycle: Nurses with higher EI may be more adept at building and maintaining the social bonds that foster a sense of belonging,[39] which in turn provides a supportive context and psychological safety for the exercise of emotional skills. The specific competencies underpinning EI, including empathy, self-awareness, and effective communication and conflict resolution skills, are fundamental to fostering a supportive and collaborative work environment.[10]

These findings can be powerfully interpreted through the lens of Lazarus and Folkman's Transactional Model of Stress and Coping.[10] Within this framework, EI can be viewed as a key personal resource that shapes the primary appraisal of a stressor (e.g. judging an ethical constraint as a "challenge" rather than a "threat") and the secondary appraisal of one's coping capabilities. CCNs with high EI are likely better equipped to reframe challenging ethical situations, regulate the attendant negative emotions, and employ constructive strategies,[38] thereby mitigating distress. This aligns with nursing-specific research linking EI and a positive work environment to higher compassion satisfaction, a key buffer against burnout and fatigue.[40] Furthermore, the role of EI in reducing turnover intention may be explained by its ability to foster affective organisational commitment, an established mediator in this relationship.[41]

## LIMITATIONS

While the multicentre design and high response rate bolster the generalisability and robustness of these findings, several methodological limitations must be acknowledged. Primarily, the cross-sectional nature of the data prohibits the determination of causal relationships among the variables studied. Furthermore, the reliance on convenience sampling and self-reported measures introduces the potential for selection bias and common method variance, which may influence the observed associations. The specific context of the participating Yemeni hospitals, though diverse, means the findings may not be fully generalisable to all nursing populations, particularly those in different healthcare systems or cultural settings. The external validity of these insights is thus bounded by the study's sampling frame. Notwithstanding these constraints, this investigation provides a critical, foundational examination of a previously underexplored facet of Yemeni nursing practice. The novel theoretical model and the empirical relationships identified offer a valuable platform for future longitudinal or experimental research to establish causality and explore the transferability of these findings.

## IMPLICATIONS FOR RESEARCH, POLICY, AND PRACTICE

This study yields critical, actionable implications. For research, this work opens pivotal avenues. The correlational evidence for EI and belonging necessitates experimental and longitudinal designs to establish causality. Furthermore, the demographic finding of widespread insufficient income suggests socioeconomic factors may critically interact with psychological variables, demanding future inquiry into these moderating relationships across diverse cultural and institutional contexts to advance a nuanced, global model of nurse retention.

For policy, the findings mandate a dual-pronged strategy: mitigating occupational stressors (work stress, fatigue, MD) while proactively cultivating psychological resources. Evidence indicates that enhancing EI and fostering a sense of belonging are not merely beneficial but function as essential buffers against turnover intention. Consequently, policy must transcend generic wellness initiatives to institutionalise systematic assessments of MD and fatigue, informing targeted interventions like predictive staffing and flexible scheduling.

For practice, these results provide a validated framework for nurse leaders to build unit-specific resilience. This entails integrating EI training as a core competency, creating forums for moral discourse, and designing workflows that intrinsically foster a collective sense of belonging and shared purpose.

## CONCLUSION

This investigation provides a more nuanced framework for understanding turnover intention among CCNs. We establish that work stress, fatigue, and MD do not operate in isolation but form a synergistic cluster of depletion that actively erodes retention. Crucially, however, this pathway is not deterministic. Our analysis reveals a critical buffering mechanism, wherein an internal resource (EI) and an external resource (a perceived sense of belonging) significantly moderate the impact of these stressors. By modelling this interplay, this study moves beyond correlational evidence to propose a testable, dual-pronged

model of resilience. The central implication is that effective retention strategies must evolve. Rather than focusing solely on the mitigation of negative workplace factors, interventions must proactively foster these specific psychological assets. Thus, the future of CCN retention lies not merely in alleviating systemic pressures, but in concurrently equipping the workforce with the emotional and social competencies required to navigate them successfully.

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