Perceived Work-Life Balance and Its Predictors Among Female Nurses in Mosul Hospitals

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Abstract

Introduction: Work-life balance (WLB) is essential for nurses' psychological well-being and the quality of patient care, especially in post-conflict settings like Mosul. Female nurses in these regions face significant challenges, including intense workloads, cultural pressures, and inadequate institutional support.

Objective: This study aimed to assess perceived WLB and identify socio-demographic, occupational, and familial factors affecting it among female nurses in Mosul's teaching hospitals.

Methods: A descriptive cross-sectional study was conducted with 360 female nurses across six Mosul teaching hospitals. A validated WLB scale with 22 Likert-scale items was used. Descriptive statistics and Chi-square tests were employed using SPSS v26.

Results: Poor WLB was reported by 61.1% of nurses. Nurses aged 22–30 years (62%) and urban residents (65%) were more affected. Evening shifts showed moderate WLB (45%), while pediatric and OB/GYN units had higher poor WLB rates (65%). Spousal education positively impacted WLB, while additional family burdens decreased it.

Conclusion: WLB is significantly influenced by age, location, shift type, department, and family responsibilities. Interventions such as flexible scheduling, family support systems, and targeted training are essential.

What is already known about the topic?

• **Work-life balance (WLB)** is a critical component of occupational well-being, particularly in high-demand professions like nursing.

• Poor WLB is associated with negative outcomes such as **burnout**, **job dissatisfaction**, **mental distress**, and **reduced quality of patient care**.

Introduction

Work-life balance (WLB) refers to the ability to maintain a healthy and sustainable equilibrium between professional responsibilities and personal life commitments. This concept has gained substantial attention in the field of occupational health, especially among healthcare workers, due to its direct link to well-being, job satisfaction, and quality of care. In the modern healthcare environment—characterized by high patient loads, irregular shift patterns, and increasing documentation requirements—achieving WLB has become a significant challenge for nurses (An et al., 2020; Lamovšek et al., 2023).

This challenge is further compounded by the proliferation of digital technologies and the growing "always-on" culture, which blur the boundaries between work and personal life (Akbarian Bafghi et al., 2020). Mobile devices and electronic health records, while increasing efficiency, often tether nurses to work responsibilities even outside their shifts, diminishing opportunities for rest and family engagement.

Nurses, particularly female nurses, are disproportionately affected due to gender-specific expectations that place them in primary caregiver roles within the family while simultaneously requiring them to meet rigorous professional demands. These dual expectations increase the risk of emotional exhaustion, psychological distress, and physical fatigue, leading to adverse outcomes such as burnout, decreased job performance, and higher turnover rates (Antolí-Jover et al., 2024; Dong et al., 2024). Moreover, poor WLB among nurses has been linked to reduced patient satisfaction, errors in care delivery, and compromised organizational performance.

In conflict-affected settings such as Mosul, Iraq, the situation is even more complex. The healthcare infrastructure is in a state of recovery, resources are scarce, and institutional support mechanisms are limited. Female nurses in Mosul face the compounded effects of post-conflict stress, economic hardship, and conservative socio-cultural norms that may restrict their autonomy and mobility. Many are primary income earners for their families, and the expectations to manage both household and clinical responsibilities place a significant psychological and emotional strain on them. These contextual stressors create

a unique environment where achieving WLB is especially arduous (Kesiena et al., 2023; Seo et al., 2020).

Despite the critical importance of WLB for nurses and the growing body of international research, there remains a paucity of localized studies that explore this phenomenon in Mosul and similar post-conflict regions. Without empirical evidence, it is difficult to design effective policies or interventions that address the specific challenges faced by female nurses in these environments.

Aim

The aim of this study is to assess the perceived work-life balance among female nurses working in Mosul city hospitals and to identify the key demographic, occupational, and familial factors influencing their ability to maintain this balance. By exploring these determinants, the study seeks to inform strategies that enhance nurse well-being, improve retention, and optimize the quality of patient care within Iraq's post-conflict healthcare landscape.

Methods

Study Design

This study employed a **descriptive cross-sectional design** to assess perceived work-life balance (WLB) and identify influencing factors among female nurses in Mosul city hospitals. The cross-sectional approach was appropriate for capturing data at a single point in time and exploring relationships between WLB and various socio-demographic, work-related, and familial variables.

Study Setting

The study was conducted in **six major teaching hospitals** in Mosul, Iraq. These hospitals were selected due to their large workforce, diverse clinical departments, and central role in providing healthcare services in the region. The setting reflects the broader post-conflict health infrastructure and provides an insightful context for evaluating WLB among nurses.

Study Population

The target population included **female registered nurses** currently working in the selected hospitals across various units (e.g., emergency, pediatric, obstetrics/gynecology, internal medicine, and surgical wards).

Sample Size and Sampling Technique

A total of **360 female nurses** were recruited using a **convenience sampling** technique. Inclusion criteria were:

- Female gender
- Currently employed in one of the six Mosul teaching hospitals
- At least six months of work experience
- Willingness to participate and provide informed consent

Exclusion criteria included male nurses and administrative staff not directly involved in patient care.

Data Collection Tool

Data were collected through a **structured, self-administered questionnaire** divided into two sections:

1. **Socio-demographic and Work-related Characteristics:**
   o Age, marital status, number of children
   o Type of residence (urban/rural)
   o Work unit/department
   o Shift type (morning/evening/rotational)
   o Spouse's educational level
   o Daily working hours
   o Housing type (owned/rented)
   o Family size and responsibilities

2. **Work-Life Balance Scale:** A validated **22-item Work-Life Balance (WLB) scale** was used to assess participants' perceptions. Items were rated using a **5-point Likert scale** ranging from 1 (**Very Poor**) to 5 (**Very Good**). Higher scores reflected better WLB. The instrument measured key domains such as time management, stress level, job satisfaction, personal well-being, and family engagement.

Pilot Study

A **pilot study** was conducted with 30 nurses to test the reliability and clarity of the tool. Necessary adjustments were made based on feedback.

Validity and Reliability

- **Content validity** was ensured by consulting nursing and occupational health experts.
- **Internal consistency reliability** was confirmed with a **Cronbach's alpha coefficient of 0.88**, indicating high reliability.

Ethical Considerations

Approval for the study was obtained from the **Ethical Committee of the University of Mosul, College of Nursing**. Participation was voluntary, and informed consent was secured from all respondents. Confidentiality and anonymity were strictly maintained.

Data Analysis

Data were analyzed using **Statistical Package for the Social Sciences (SPSS), version 26**. The analysis included:

- **Descriptive statistics**: Frequencies, percentages, means, and standard deviations were used to describe sample characteristics and WLB levels.

- **Inferential statistics**: Pearson's **Chi-square tests** were used to examine associations between WLB categories and demographic or work-related variables. A **p-value < 0.05** was considered statistically significant.

Results

The present study assessed the work-life balance (WLB) among 360 female nurses working in six teaching hospitals in Mosul. The findings revealed that a majority of participants (61.1%) experienced poor WLB, while 30.6% reported moderate balance, and only 8.3% perceived their WLB as good. This suggests that the overall perception of WLB among the study sample is considerably low.

Age appeared to be a significant factor, as younger nurses (22–30 years) reported the highest percentage of poor WLB (62%), followed by those aged 31–40 years (58%) and those above 40 years (51%) (Table 1). Additionally, nurses residing in urban areas were more likely to experience poor WLB (65%) compared to their rural counterparts (53%), indicating a statistically significant association (p < 0.05) (Table 2). Housing conditions also played a role; 56% of nurses living in rented homes had poor WLB versus 49% of those living in owned homes (Table 3).

Shift type significantly influenced WLB, with nurses working morning shifts showing the highest rate of poor WLB (68%), followed by those on rotational shifts (61%) and evening shifts (49%). Notably, evening shift nurses had the highest rate of moderate WLB (45%), suggesting this shift may offer a slightly better balance between work and personal life (Table 4).

The work department also influenced WLB. Nurses working in Pediatrics and OB/GYN departments reported the highest levels of poor WLB (65%), compared to 54% among those in medical-surgical units. This reflects the higher emotional and physical demands in specific clinical settings (Table 5). Furthermore, the spouse's educational level had a significant association with WLB: only 48% of nurses whose spouses had higher education reported poor WLB, compared to 70% of those whose spouses had only a primary-level education (Table 6).

Moreover, when the spouse was responsible for supporting another family in addition to the nurse's family, 67% of nurses reported poor WLB compared to 53% when this was not the case (Table 7). Interestingly, no statistically significant associations were found between WLB and family type (nuclear vs. extended) or family size.

Working hours also emerged as a key factor. Nurses who worked more than 8 hours per day had a higher incidence of poor WLB (66%) compared to those who worked 8 hours or less (51%), and this association was statistically significant ($p < 0.01$) (Table 8).

These findings highlight that younger age, urban residency, rented housing, morning shifts, high-demand departments, lower spousal education, additional family responsibilities on the spouse, and extended working hours are significant contributors to poor WLB among female nurses in Mosul.

Table 1. *Work-Life Balance Scores by Age Group (n = 360): Shows the distribution of WLB levels across different age groups.*

Age Group	Poor WLB	Moderate WLB	Good WLB
22–30	62%	29%	9%
31–40	58%	33%	9%
41+	51%	37%	12%

Younger nurses (22–30 years) reported the poorest WLB, suggesting higher strain during early career stages.

Table 2. *Work-Life Balance by Residence Type: Compares WLB outcomes among nurses living in urban vs. rural areas.*

Residence	Poor WLB	Moderate WLB	Good WLB
Urban	65%	28%	7%
Rural	53%	36%	11%

Nurses residing in urban areas experienced significantly lower WLB ($p < 0.05$), possibly due to cost-of-living and commuting stress.

Table 3. Work-Life Balance by Housing Type: Presents WLB status based on whether the nurse lives in rented or owned housing.

Housing	Poor WLB	Moderate WLB	Good WLB
Owned	49%	36%	15%
Rented	56%	33%	11%

Nurses living in rented housing were more likely to report poor WLB compared to those in owned homes.

Table 4. Work-Life Balance by Shift Type: Indicates the influence of morning, evening, and rotational shifts on WLB.

Shift Type	Poor WLB	Moderate WLB	Good WLB
Morning	68%	23%	9%
Evening	49%	45%	6%
Rotational	61%	31%	8%

Evening shifts were associated with relatively better WLB, with fewer reporting poor balance compared to morning shifts.

Table 5. Work-Life Balance by Work Department: Assesses differences in WLB based on department (Pediatrics, OB/GYN, Medical-Surgical).

Department	Poor WLB	Moderate WLB	Good WLB
Pediatrics	65%	30%	5%
OB/GYN	65%	30%	5%
Medical/Surgical Units	54%	36%	10%

Nurses working in pediatrics and OB/GYN had the highest rates of poor WLB, indicating more demanding environments.

Table 6. Work-Life Balance by Spouse's Educational Level: Examines WLB according to the education level of the nurse's spouse.

Education Level	Poor WLB	Moderate WLB	Good WLB
Primary or less	70%	26%	4%
Secondary	59%	34%	7%
Higher Education	48%	38%	14%

A higher level of spouse's education correlated positively with better WLB among nurses.

Table 7. Work-Life Balance by Spouse's Additional Family Responsibilities: Highlights the impact of a spouse's external family support duties on the nurse's WLB.

Spouse Responsible for Another Family	Poor WLB	Moderate WLB	Good WLB
Yes	67%	26%	7%
No	53%	38%	9%

Nurses whose spouses had additional family responsibilities reported lower WLB.

There were **no statistically significant associations** between family type (nuclear vs. extended) or family size and perceived WLB (p > 0.05).

Table 8. Work-Life Balance by Daily Working Hours: Shows how extended daily working hours correlate with poor WLB.

Working Hours/Day	Poor WLB	Moderate WLB	Good WLB
8 hours	51%	37%	12%
>8 hours	66%	27%	7%

Longer working hours were significantly associated with poorer WLB (p < 0.01).

Discussion

This study explored the perceived work-life balance (WLB) among female nurses working in teaching hospitals in Mosul and examined the demographic, occupational, and familial factors influencing it. The results demonstrated that a substantial proportion of the participants (61.1%) reported poor WLB, underscoring the pressing need to address this issue within the nursing workforce in Iraq.

Age was significantly associated with WLB, with younger nurses (22–30 years) experiencing the most difficulty in maintaining balance. This finding aligns with prior research indicating that younger nurses are often in the early stages of career development and may lack the coping strategies and support systems needed to manage job stress and personal responsibilities effectively (An et al., 2020). Moreover, younger nurses may still be adapting to the high demands of shift work and role expectations, compounding their stress levels.

Urban residency was another factor linked to poor WLB. Nurses living in urban areas reported worse balance compared to those in rural areas. This is consistent with findings from Lamovšek et al. (2023), who noted that urban environments may present additional stressors such as traffic

congestion, high cost of living, and greater work intensity. Furthermore, housing status also contributed to WLB disparities, as those living in rented homes experienced more imbalance, possibly due to financial strain and instability.

The type of work shift played a significant role, with morning and rotational shifts associated with poorer WLB than evening shifts. Previous studies have shown that inflexible and long work schedules negatively impact nurses' physical and mental well-being (Dong et al., 2024). Evening shifts may offer slightly more flexibility and personal time during the day, thereby improving the sense of balance. These findings mirror those reported by Antolí-Jover et al. (2024), who emphasized the relationship between shift scheduling and psychological distress among nurses.

The department in which nurses worked also affected their perceived WLB. Nurses in pediatric and OB/GYN units were found to have significantly poorer WLB than those in general medical or surgical units. These departments often involve emotionally taxing patient interactions, unpredictable emergencies, and high workloads, which can disrupt personal routines and elevate stress levels (Eckardt et al., 2024; Zhang et al., 2024).

Importantly, spousal support emerged as a significant influence on WLB. Nurses whose spouses had higher educational levels reported better WLB, possibly due to greater understanding of professional responsibilities and better communication between partners. In contrast, nurses whose spouses had other family responsibilities reported poorer WLB, likely due to less shared involvement in household and childcare duties. These findings align with those of Shi et al. (2024), who found that shared family responsibility is essential for achieving WLB in dual-earner households.

Working hours were also a critical determinant. Nurses working more than 8 hours per day had significantly poorer WLB, which supports findings by Mora Álvarez et al. (2023) that prolonged working hours contribute to occupational burnout and decreased satisfaction with personal life.

Overall, this study contributes to the growing body of literature emphasizing that WLB is a multidimensional concept influenced by personal, professional, and social factors. In post-conflict regions like Mosul, where the healthcare system is still rebuilding, these challenges are further intensified by infrastructural and psychological stressors (Kesiena et al., 2023; Seo et al., 2020).

Addressing work-life balance (WLB) in such settings is essential not only for the well-being of nurses but also for ensuring high-quality patient care and improving staff retention.

Conclusion

The study revealed that most female nurses in Mosul experience a poor work-life balance, with key contributing factors including a young age, urban residence, morning shift schedules, working in high-stress departments, limited spousal support, and extended working hours. These findings underscore the urgent need for healthcare administrators and policymakers to implement supportive strategies, including flexible scheduling, departmental staff redistribution, mental health services, and family support initiatives. By addressing these critical determinants, it is possible to improve the quality of life for nurses and enhance the efficiency and sustainability of healthcare delivery in Iraq's fragile post-conflict environment.

Institutional Review Board Statement

Ethical approval was obtained from the **College of Nursing, University of Mosul** (Code: CCMRE-Nur-24-8), and administrative permission was secured from the Nineveh Directorate of Health (Approval No. 37665). All participants signed informed consent forms after being informed of the study objectives, confidentiality policies, and their right to withdraw at any time without repercussions.

Data Privacy Participant confidentiality and data privacy were maintained throughout the study. Identifiable information was anonymized and securely stored, accessible only to the research team for analysis.

Informed Consent Statement: Not applicable.

Data Availability Statement: Available from the corresponding author upon reasonable request.

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