ORIGINAL ARTICLE

Exploring Factors Affecting Work-Life Balance Perceptions Among Female Nurses: A Cross-Sectional Study in Mosul City Hospitals

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ABSTRACT

Introduction: Work-life balance (WLB) is a growing concern in healthcare, particularly among female nurses in post-conflict settings like Mosul. These nurses face unique challenges, including limited resources, unstable work conditions, socio-cultural pressures, and economic constraints, which impact their well-being and job performance. Despite extensive research on WLB in developed settings, there is limited data on female nurses working in post-conflict environments. **Aim:** This study explores the factors influencing WLB among female nurses in Mosul, Iraq, examining demographic, workplace, and personal determinants affecting their ability to balance professional and personal responsibilities. **Methods:** A cross-sectional study was conducted across six government hospitals in Mosul from December 1, 2023, to January 31, 2024. A convenience sample of 360 female nurses participated. Data was collected using the 22-item Work-Life Balance (WLB) Scale, with responses analyzed using SPSS v26.0. Descriptive statistics, Chi-square tests, regression models, and correlation analyses were performed to identify key factors influencing WLB. **Results:** Younger nurses (22–30 years) and those working in high-demand wards (Pediatrics, Obstetrics/Gynecology) reported poorer WLB scores (Chi-Sq = 29.415, P < 0.001). Evening shift nurses showed moderate WLB (Chi-Sq = 40.242, P < 0.001), while work experience negatively impacted WLB (β= -0.129, P = 0.001). Housing status, marital support, and urban residency also influenced WLB. **Conclusion:** The study underscores the urgent need for flexible work policies, supportive workplace environments, and financial assistance to improve WLB among female nurses. Future research should focus on the long-term impacts of poor WLB on nurse retention and patient care outcomes.
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Keywords: Work-life balance, female nurses, post-conflict healthcare, occupational stress, nursing workforce, Mosul, Iraq

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INTRODUCTION

Work-life balance (WLB) has become increasingly significant in today's fast-paced world, driven by technological advancements, evolving workforce expectations, and a 24/7 work culture (1). While technology enhances efficiency, it also blurs the boundaries between work and personal life, fostering an "always-on" work environment (2). Employees now seek workplaces that offer flexibility and recognize their multifaceted roles beyond their professional duties (3). Despite extensive research on WLB in healthcare, studies focusing on female nurses in post-conflict settings like Mosul remain scarce (4). These nurses face unique challenges, including limited resources, unstable conditions, safety concerns, and socio-cultural pressures exacerbating work-life balance difficulties (5). Many are primary earners, juggling demanding hospital roles with household responsibilities, which leads to high stress and burnout that impacts well-being and patient care (6). To address these issues, organizations can adopt supportive policies, including onsite childcare (CC), elderly care assistance (AE), home help services (HH), flexible hours (FH), remote work (RW), and comprehensive leave (L) policies. These initiatives can improve job satisfaction, reduce burnout, and retain skilled nurses, ultimately strengthening healthcare systems in post-conflict regions like Mosul.

MATERIAL AND METHODS

Study Design and Setting

This cross-sectional study was conducted across six government hospitals in Mosul, Iraq—Al Salam, Al-

Khansa, Ibn-Sina, Mosul General, Al-Jamhory, and Ibn Al-Atheer Teaching Hospitals. Data collection occurred from December 1, 2023, to January 31, 2024, ensuring a representative sample of female nurses while minimizing workload fluctuations.

Study Sample

Three hundred sixty female nurses were selected using a convenience sampling method. Inclusion criteria require participants to be actively employed, available during the study, and willing to participate. Exclusion criteria included male nurses, part-time or temporary employees, those on extended leave, newly hired staff, and nurses in administrative roles.

Data Collection Tools

The study employed the Work-Life Balance (WLB) Scale, a structured 22-item instrument designed to assess key dimensions of WLB, including communication, time management, work-life boundaries, support systems, flexibility, stress levels, and productivity. Each item was rated on a 5-point Likert scale, ranging from:

5 = Strongly Agree
4 = Agree
3 = Neutral
2 = Disagree
1 = Strongly Disagree

The total score ranged from 22 to 110, with higher scores indicating a more favorable perception of work-life balance. For interpretation, total WLB scores were classified into five distinct categories:

Excellent WLB: 95–110
Good WLB: 80–94
Moderate WLB: 65–79
Poor WLB: 50–64
Very Poor WLB: below 50

These classifications allowed for standardized comparisons across participants and facilitated identifying groups most at risk for poor work-life balance outcomes.

Validity and Reliability

A panel of 20 experts reviewed the tool for content validity. Reliability was assessed through a test-retest method, and Cronbach's alpha, which exceeded 0.83, indicated strong internal consistency. A pilot study with 20 nurses tested feasibility and clarity before full implementation.

Statistical Analysis

Data was analyzed using SPSS v26.0, with descriptive statistics summarizing demographics and WLB scores. Inferential tests included correlation analysis, Chi-square tests, regression models, and normality assessments. Ethical considerations ensured participant confidentiality.

Study Limitations

Several limitations should be considered when interpreting the findings of this study. First, convenience sampling may have introduced selection bias, as participants who were more available or willing to respond may differ systematically from those who were omitted. This could influence the representativeness of the sample.

Second, the study relied exclusively on self-reported data, which are inherently subject to reporting bias, including social desirability and recall biases. Participants may have over- or under-reported their experiences or perceptions of work-life balance due to personal interpretation, fear of judgment, or misunderstanding of the questions.

Third, the cross-sectional design precludes any causal inferences. While associations between variables were identified, the temporal direction of these relationships cannot be determined.

Furthermore, the study was conducted solely in public teaching hospitals in Mosul, which may limit the generalizability of the results. Work environments, organizational cultures, and resource availability vary significantly across geographic regions, hospital types, and private healthcare settings. Therefore, the findings may not fully reflect nurses' experiences in different contexts.

Despite these limitations, the study provides important insights into work-life balance among nurses in a high-demand setting and underscores the need for supportive policies and tailored interventions.

Ethical Approval

Participants were introduced to the study during an orientation session, where the objectives, procedures, potential risks, and anticipated benefits were clearly explained. Each participant received a detailed information leaflet highlighting that participation was voluntary and would not affect their employment status or professional standing. To ensure confidentiality, all responses were anonymized using numerical identifiers, and access to the collected data was strictly limited to the research team. Participants were allowed to ask questions before signing a written informed consent form. No financial incentives or material compensation were provided for participation in the study. However, participants were offered access to the study findings and recommendations as a form of professional feedback and educational value. Ethical approval for this study was granted by the Collegiate Committee for Medical Research Ethics, University of Mosul (Reference: CCMRE-Nur-23-7), on November 8, 2024.

RESULTS

Three hundred sixty female nurses from Mosul Teaching Hospital participated in the study. As shown in Table I , the majority (60.28%) were aged between 22 and 30. Most nurses (88.89%) resided in urban areas, and 60% lived in owned housing. Regarding spouses' educational levels, half held a diploma and the other half held a bachelor's degree. Regarding family structure, 56.67% lived in nuclear families, and 43.33% lived in extended families. Notably, 50% of nurses had less than five years of experience, and 56.67% worked evening shifts. Most nurses were assigned to pediatric (33.33%) and obstetrics/gynecology (33.33%) wards, often associated with high workload and stress.

Table I: Socio-demographic characteristics of the study sample

Age	**No**	**%**
22 – 30	217	60.28
31 – 40	106	29.44
41 – 50	37	10.28
Nurse Residence	**No**	**%**
City	320	88.89
Countryside	40	11.11
Nurse Housing Type	No	%
Owned	216	60.00
Rented	144	31.67
Spouse's Educational Level	**No**	**%**
Diploma	180	50.00
Bachelor's	180	50.00
Nurse-Family Type	**No**	**%**
Nuclear	204	56.67
Extended	156	43.33
Number of Family Members	**No**	**%**
1 – 5	180	50.00
6 – 12	180	50.00
Nurse Year of Services	**No**	**%**
Less than 5	180	50.00
6 – 15	180	50.00
Nurse Daily Working Hours	**No**	**%**
Morning Shift	156	43.33
Evening Shift	204	56.67
Nurse Work Place	**No**	**%**
Operating Ward	24	6.67
Internal Medicine Ward	60	16.67
Pediatric Ward	120	33.33
Obstetrics and Gynecology Ward	120	33.33
Surgery Ward	12	3.33
Intensive Care Unit	24	6.67

As detailed in Table II, a substantial proportion of nurses reported poor perceptions and practices related to work-life balance (WLB). Specifically, 63.3% found balancing work and personal life challenging, and 60% felt frequently exhausted due to work demands. Half of the participants (50%) believed they could not achieve WLB, and only 36.7% thought they had a good WLB. Despite this, 66.7% expressed job satisfaction, and 70% believed their job positively influenced their personal life. However, only 40% felt they spent enough time with their families, and 46.7% reported satisfaction with their family relationships. Additionally, 56.7% noted difficulty disconnecting from work, and 63.3% experienced a noticeable drop in productivity when boundaries were unclear.

Table II: Work-Life Balance Perceptions and Practices Among Participants

	Factors	**No**	**%**
1	I often feel exhausted by my work responsibilities	216	60.0
2	I find it challenging to balance my work and personal life	228	63.3
3	I feel unable to achieve a balance between work and life	180	50.0
4	I am satisfied with my current job	240	66.7
5	I feel my job positively affects my personal life	252	70.0
6	I enjoy my work and its impact on my personal life	240	66.7
7	I feel I spend enough time with my family	144	40.0
8	I am happy with my family relationships	168	46.7
9	My family supports my career ambitions	228	63.3
10	I manage my time effectively between work and family	144	40.0
11	I often feel rushed or pressured for time in my daily activities	216	60.0
12	I set aside time for personal interests away from work	180	50.0
13	I establish clear boundaries between work and personal life	168	46.7
14	I often check work-related messages during my time	204	56.7
15	I find it difficult to disconnect from work during official hours	216	60.0
16	I have a good work-life balance that contributes to my overall well-being	132	36.7
17	I make time for exercise and self-care despite my work commitments	204	56.7
18	Work-related stress negatively affects my health	204	56.7
19	I adjust my schedule as needed to maintain balance	168	46.7
20	I feel less stressed when I maintain clear boundaries	228	63.3
21	Maintaining work-life boundaries improves my overall health	204	56.7
22	I notice a drop in productivity when my boundaries are unclear	228	63.3

Further analysis (Table III) revealed significant relationships between WLB and several demographic and occupational factors. Age is strongly associated with WLB scores (Chi-Square = 29.415, $p < 0.001$), where nurses aged 22–30 reported the highest proportion of poor WLB. In contrast, family type did not significantly affect WLB (Chi-Square = 0.990, $p = 0.804$). Working hours were significantly associated with WLB perceptions (Chi-Square = 40.242, $p < 0.001$). Nurses on evening shifts reported more moderate WLB scores, suggesting possible adaptation to shift routines, although they also exhibited high rates of poor WLB, emphasizing the strain of irregular hours.

Regression analysis (Table IV) further identified key predictors of WLB. Years of work experience was a significant negative predictor ($\beta = -0.129$, $p = 0.001$), indicating that longer tenure may intensify work-life conflicts. Marital status and managerial roles approached

significance (p = 0.059 and p = 0.065, respectively), suggesting a potential moderating effect on WLB. Other variables, including educational level, place of work, number of night shifts, and weekly working hours, did not demonstrate significant associations.

Table III: Distribution of Work-Life Balance (WLB) Scores by Age, Nurse-Family Type, and Daily Working Hours

WLB	Age			Total
	22 - 30	31 - 40	41 - 50	
Excellent	10	9	8	27
Good	15	10	6	31
Moderate	58	13	11	82
Poor	134	74	12	220
	217	106	37	360
Chi-Sq = 29.415, DF = 6, P-Value = 0.000				
WLB	**Nurse-Family Type**			**Total**
	Nuclear	**Extended**		
Excellent	13	14		27
Good	17	14		31
Moderate	48	34		82
Poor	126	94		220
	204	156		360
Chi-Sq = 0.990, DF = 3, P-Value = 0.804				
WLB	**Nurse Daily Working Hours**			**Total**
	Morning Shift	**Evening Shift**		
Excellent	11	16		27
Good	21	10		31
Moderate	12	70		82
Poor	112	108		220
	156	204		360
Chi-Sq = 40.242, DF = 3, P-Value = 0.000				

Table IV: Impact of Marital Status, Education, and Work Experience on Work-Life Balance among Female Nurses

Variables	B	SE B	β	P-value
Marital status	0.247	0.131	0.063	0.059
Education status, degrees	-0.170	0.180	-0.031	0.346
Years of work experience	-0.027	0.008	-0.129	0.001
Position, manager	0.247	0.134	0.070	0.065
Place of Work	0.131	0.108	0.039	0.227
Monthly night shifts	0.010	0.024	0.013	0.692
Weekly hours worked	0.000	0.003	0.002	0.945

DISCUSSION

This study comprehensively examined work-life balance (WLB) among female nurses in Mosul teaching hospitals, revealing critical insights into how socio-demographic, occupational, and personal factors shape their ability to balance professional and personal responsibilities. The findings showed that a majority (61.1%) of nurses reported poor WLB, with only 7.5% achieving an excellent level. These results align with global literature indicating persistent dissatisfaction among nurses regarding their work-life dynamics. For instance, studies by Brooks et al. and Almalki et al. reported significant WLB-related dissatisfaction, with implications for staff retention and healthcare quality (7,8). Similarly, large-scale investigations in Sweden and Europe also identified high turnover intentions due to poor WLB (9,10).

In Mosul's context, such challenges are likely exacerbated by resource limitations and sociopolitical instability. These stressors underscore the need for policy and institutional responses to improve nurse well-being and professional sustainability.

Socio-demographic Factors

Age emerged as a significant determinant of WLB, with younger nurses (22–30 years) experiencing disproportionately poor balance. This trend mirrors international findings where early-career professionals report higher stress levels, often due to limited experience, high job demands, and inadequate coping mechanisms. Younger nurses face the dual burden of adapting professionally while navigating personal transitions such as marriage or family formation. These findings align with studies noting the importance of job control, role clarity, and predictability in reducing adverse work-life spillover effects.

Contrastingly, older nurses often possess better-developed coping strategies and greater autonomy, which may explain their improved WLB. Interventions like mentorship programs, professional role definition, and workload support may benefit younger nurses.

Urban residence also appeared to affect WLB negatively. Nurses residing in cities reported poorer balance, likely due to increased work intensity, long commutes, and fewer social support opportunities. While rural settings may lack resources, they often provide more cohesive community support and manageable work environments, which could buffer against WLB-related strain.

Workplace Factors

Workplace characteristics, especially shift timing and department assignment, significantly influenced nurses' WLB. Surprisingly, nurses working evening shifts reported relatively better WLB than their morning shift counterparts. This may be attributed to less hectic workflows and greater control over personal time during mornings.

Nurses stationed in high-intensity units—notably pediatrics and obstetrics/gynecology—reported the poorest WLB. These departments involve constant emotional engagement and high patient turnover, which increases mental fatigue and disrupts work-life boundaries. Conversely, departments such as internal medicine and operating rooms presented more structured, predictable routines, which improved WLB. These findings underscore the need for departmental support systems, stress management resources, and staffing adjustments in high-pressure units. Prior research

confirms that structured environments and emotional support improve job satisfaction and reduce burnout (11,12).

Personal and Family-Related Factors

The study found a nuanced relationship between personal/family factors and WLB. While the family structure (nuclear vs. extended) and the number of family members showed no significant impact, other elements like housing stability and spousal support played essential roles.

Nurses owning their homes may experience greater security and stability, reducing financial stress and facilitating mental well-being. Moreover, having a supportive and educated spouse significantly enhances WLB. Such partners are often more attuned to the emotional toll of nursing work and more capable of contributing meaningfully to domestic responsibilities.

The quality of interpersonal relationships, equitable task distribution, and emotional support within families appeared more critical than family size or type. These findings suggest that healthcare institutions should consider integrating family-friendly policies, such as flexible scheduling and dependent care support, into their workforce strategies. Studies by Kelly et al. and Wilson et al. confirm that such policies reduce work-family conflicts and enhance overall well-being (14-18).

CONCLUSION

This study highlights key factors influencing work-life balance (WLB) among nurses, revealing that younger nurses, urban residents, and those in rented housing experience poorer WLB. Work-related factors, such as evening shifts and high-demand wards (Pediatrics and Obstetrics/Gynecology), also contribute to WLB challenges. Personal and family dynamics, including a spouse's education and financial responsibilities, also play a significant role. To address these issues, organizations should implement flexible scheduling, workplace support programs, and economic incentives for housing. Training initiatives should promote time management and family involvement, while policy interventions should focus on urban challenges, childcare, and shift workload distribution. Future research should explore workload intensity, team dynamics, and the long-term impact of poor WLB on nurses' well-being and patient care to develop more effective solutions.

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