

## Level Of Stress In Female Healthcare Professionals Working In Intensive Care Unit And Impact On Family Life

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### Abstract

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**Keywords:** Job Stress, Healthcare Professionals, Impact On Family Life, Impact On Personal Life, Quality of life, JScore, IPFL Score, SL Score, SF Score

Received on 10 Mar 2026

Accepted on 25 Mar 2026

Published on 08 Apr 2026

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**Background:** Intensive care units (ICUs) are high-pressure environments where female healthcare professionals face substantial occupational stress, potentially affecting personal and family well-being.

**Objective:** To assess the level of occupational stress among female ICU healthcare professionals and evaluate its impact on family life, sexual well-being, and overall health status.

**Methodology:** A cross-sectional study was conducted among 150 female ICU healthcare professionals in multiple hospitals of District Attock, Punjab, Pakistan, from August-2025 to January-2026. Participants completed a structured questionnaire measuring Job Stress (JScore), Impact on Family Life (IPFL Score), Sexual Well-being (SL Score), and general Health Status (SF Score). Data were analyzed for correlations between occupational stress and the measured domains.

**Results:** The mean JScore ranged from  $6.83 \pm 1.52$  to  $7.86 \pm 1.46$  across socio-demographic categories, indicating moderate to high stress levels uniformly among participants. Strong positive correlations were observed

between JScore and SL Score ( $r = 0.87$ ) and SF Score ( $r = 0.83$ ). In contrast, IPFL Score showed a weak, non-significant correlation with JScore ( $r = -0.16$ ), suggesting limited direct impact on family life.

**Conclusion:** Female ICU healthcare professionals experience moderate to high occupational stress, which adversely affects sexual well-being and overall health, while the impact on family life remains minimal. These findings underscore the need

for targeted interventions, including stress management programs, mental health support, and workplace policies that promote holistic well-being.

## **Introduction**

The intensive care unit (ICU) is one of the most complex and high-pressure environments in modern healthcare systems(1). Healthcare professionals working in ICUs are continuously exposed to critically ill patients, life-threatening conditions, and rapid decision-making requirements, all of which contribute to significant occupational stress(2). This environment demands constant vigilance, advanced technical skills, and emotional resilience, predisposing healthcare workers to high levels of psychological stress and burnout (3). Occupational stress, if persistent, is recognized as a major contributor to burnout syndrome, which adversely affects both the mental and physical well-being of healthcare professionals and compromises patient care quality (4).

Female healthcare professionals may be particularly vulnerable to stress due to the dual burden of professional responsibilities and societal expectations related to family roles (5). Evidence suggests that women in healthcare often experience higher levels of burnout compared to their male counterparts, partly due to additional caregiving responsibilities and limited work-life balance(6). The psychological demands of ICU work frequently extend beyond the workplace, leading to emotional exhaustion, irritability, and difficulty maintaining a balance between professional duties and personal life(7).

ICU professionals are also required to engage in emotionally challenging situations, including communicating poor prognoses, discussing end-of-life decisions, and handling unexpected patient deaths. These emotionally intense interactions significantly contribute to cumulative stress and psychological burden. Prolonged exposure to such stressors may lead to burnout, characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, ultimately impairing job performance and increasing the likelihood of medical errors(8).

A critical consequence of occupational stress among ICU healthcare workers is its spillover into family life. Studies have demonstrated a strong association between work-related stress and work–family conflict, where professional demands interfere with family responsibilities. Recent evidence indicates that a substantial proportion of ICU nurses experience moderate to high levels of work–family conflict, which is significantly associated with depression and burnout (9). This conflict reduces quality family time, disrupts interpersonal relationships, and contributes to feelings of guilt and neglect among healthcare professionals(10).

Furthermore, stress and interpersonal conflicts experienced in healthcare settings can create a “spillover effect,” negatively impacting personal relationships and psychological well-being outside the workplace (11). Female healthcare professionals, in particular, may experience intensified role conflict due to competing demands of work and family life. Research has shown that work–family conflict and role-related stress are significantly associated with depression and emotional exhaustion among female healthcare workers (12). These findings highlight the multidimensional impact of occupational stress on both professional functioning and personal well-being.

Given the increasing burden of stress and burnout among ICU healthcare professionals and the unique challenges faced by women, it is essential to assess the magnitude of this issue and its broader implications. Understanding the level of stress and its impact on family life is crucial for developing targeted interventions, supportive workplace policies, and coping strategies aimed at improving both mental health and quality of life.

Therefore, the present study aims to evaluate the level of stress among female healthcare professionals working in ICU settings and to assess the impact of this stress on their family and personal life.

### Materials and Methods

This cross-sectional study was conducted in multiple hospitals of District Attock, Punjab, Pakistan, from August 2025 to January 2026. A total of 150 female healthcare professionals were recruited based on predefined inclusion criteria, with the sample size determined by feasibility and the availability of eligible participants during the study period. A non-probability convenience sampling technique was utilized for participant selection. Only female healthcare professionals actively working in intensive care units (ICUs) were included, while male healthcare professionals and staff from other hospital departments were excluded.

Data were collected using a structured questionnaire comprising sections on demographic characteristics, job-related stress, impact on personal and family life, impact on sexual life, and health-related quality of life assessed through the Short Form Health Survey. Scoring categories were developed for each domain to quantify responses based on participants' answers.

Strict ethical protocols were followed throughout the data collection process to ensure participant confidentiality and privacy. The study was conducted in accordance with the ethical principles outlined in the World Medical Association Declaration of Helsinki. Informed consent was obtained from all participants prior to their inclusion in the study, ensuring their voluntary participation and understanding of the research objectives.

Data analysis was performed using IBM SPSS Statistics. Quantitative variables were summarized using means and standard deviations, while qualitative variables were presented as frequencies and percentages. The Job Stress Score were compared across different categories were asses using one way ANOVA. Correlation analysis was conducted to assess the relationship between job stress and its impact on personal and family life, sexual life, and health-related quality of life.

### Results

A total of 150 female healthcare professionals working in ICU settings were included in the study. The majority of participants were aged 36–40 years (41.3%) . Nurses and doctors each comprised 38% of the cohort, with smaller proportions of occupational therapists (8.7%) and LHV's (15.3%). Most participants had 5–15 years of ICU experience, and the majority were married (78%) with 1–3 children (68.7%). The mean Job Stress Scores (JScore) were relatively consistent across all socio-demographic categories, ranging from  $6.83 \pm 1.52$  to  $7.86 \pm 1.46$ , and no statistically significant differences were observed with respect to age, designation, experience, marital status, or number of children (all  $p > 0.05$ ). These findings indicate that occupational stress levels were generally uniform among female ICU healthcare professionals, irrespective of socio-demographic characteristics (Table 1).

**Table 01: Demographic Characteristics and Job Stress Assessment Among Female ICU Healthcare Professionals**

Variable	Category	n (%)	Job Stress Score	
			Mean (SD)	P-value
Age (years)	30-35	55 (36.7)	6.95 (1.55)	0.41
	36-40	62 (41.3)	6.85 (1.49)	
	41-45	26 (17.3)	7.04 (1.37)	

	46-50	07 (4.7)	7.86 (1.46)	
<b>Designation</b>	Nurse	57 (38)	6.87 (1.42)	0.80
	Doctors	57 (38)	7.05 (1.58)	
	Occupational Therapist	13 (8.7)	7.23 (1.42)	
	LHV	23 (15.3)	6.83 (1.52)	
<b>Experience (years)</b>	5-10	55 (36.7)	6.94 (1.55)	0.41
	11-15	62 (41.3)	6.85 (1.49)	
	16-20	26 (17.3)	7.04 (1.37)	
	21-25	07 (4.7)	7.85 (1.46)	
<b>Marital Status</b>	Married	117 (78)	6.95 (1.45)	0.71
	Divorced	30 (20)	7.06 (1.72)	
	Widowed	03 (02)	6.33 (0.57)	
<b>Children</b>	1-3	103 (68.7)	6.92 (1.52)	0.85
	4-6	41 (27.3)	7.04 (1.49)	
	7-10	06 (04)	7.16 (0.98)	

A **strong positive correlation** was observed between **SL Score and JScore** ( $r = 0.87$ ,  $p = 0.001$ ) and between **SF Score and JScore** ( $r = 0.83$ ,  $p = 0.001$ ), indicating that higher occupational stress is significantly associated with poorer sexual well-being and health status. In contrast, **IPFL Score showed a weak negative and non-significant correlation** with JScore ( $r = -0.16$ ,  $p = 0.46$ ), suggesting no meaningful association between occupational stress and impact on family life. Overall, occupational stress demonstrated significant associations with sexual well-being and health status, but not with family life impact (Table 2).

**Table 2: Correlation of Occupational Stress with Impact on Family Life, Sexual Well-being, and Health Status Among Female ICU Healthcare Professionals**

Variable	Correlation with JScore (r)	P-value
<b>IPFL Score</b>	-0.16	0.46
<b>SL Score</b>	0.87	0.001
<b>SF Score)</b>	0.83	0.001

*JScore, Occupational Stress Score; IPFL, Impact on Family Life; SL, Sexual Well-being; SF, Health Status.*

The scatter plots demonstrate varying relationships between Occupational Stress (JScore) and domain-specific scores. A **strong positive linear association** was observed between **SF Score and JScore** ( $R^2 = 0.586$ ;  $r = 0.83$ ,  $p < 0.001$ ). Similarly, **SL Score showed a strong positive correlation** with JScore ( $r = 0.87$ ,  $p = 0.001$ ). In contrast, **IPFL Score demonstrated a weak and non-significant negative association** with JScore ( $r = -0.16$ ,  $p = 0.46$ ), with no clear linear trend observed (Figure 01).

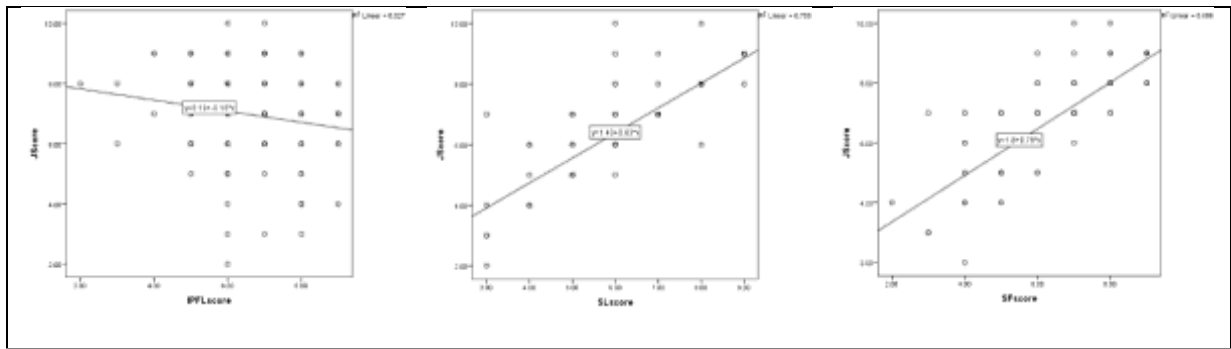


Figure 01: Linear Relationship Between IPFL Score, SL Score, SF Score and Occupational Stress (JScore) Among Female ICU Healthcare Professionals

## Discussion

The present study assessed the level of occupational stress among female healthcare professionals working in ICU settings and examined its impact on family life, sexual well-being, and overall health status. Our findings reveal several important insights into the multidimensional effects of ICU work-related stress on female healthcare workers.

The mean Job Stress Scores (JScore) in this cohort ranged from  $6.83 \pm 1.52$  to  $7.86 \pm 1.46$  across different socio-demographic categories, with no statistically significant differences observed based on age, professional designation, years of experience, marital status, or number of children. This suggests that occupational stress is uniformly experienced among female ICU professionals, regardless of demographic or professional characteristics. These results are consistent with previous studies indicating that the inherent demands of ICU work, rather than individual socio-demographic factors, are the primary drivers of occupational stress (2,3).

Correlation analysis revealed a strong positive association between occupational stress and both sexual well-being (SL Score,  $r = 0.87$ ,  $p = 0.001$ ) and general health status (SF Score,  $r = 0.83$ ,  $p = 0.001$ ). This indicates that higher stress levels are significantly linked with poorer health outcomes and diminished sexual well-being. These findings align with prior research demonstrating that prolonged occupational stress negatively affects both physical and psychological health, contributing to fatigue, sleep disturbances, decreased libido, and overall reductions in quality of life among healthcare professionals (13–15).

In contrast, the impact of occupational stress on family life (IPFL Score) was weak and statistically non-significant ( $r = -0.16$ ,  $p = 0.46$ ). This finding may reflect coping mechanisms employed by female healthcare workers to buffer the effects of professional stress on their family responsibilities, such as delegation of household tasks, social support, or adaptive strategies to maintain family functioning. It is also possible that cultural factors and societal norms influence the perception of family-related stress, resulting in a weaker measurable association despite the high professional stress load (16,17).

Overall, the findings indicate that while ICU-related stress significantly impairs personal health and sexual well-being, its direct effect on family life is limited, possibly due to coping strategies, social support, or cultural factors moderating the work–family spillover. This highlights the complex nature of occupational stress and suggests that interventions should focus not only on work–life balance but also on promoting physical and mental health.

These results underscore the need for targeted interventions, including stress management programs, counseling services, and supportive workplace policies, to mitigate the adverse effects of ICU stress on female healthcare professionals and enhance their overall well-being and professional performance.

## Conclusion

Female ICU healthcare professionals experience moderate to high occupational stress, as indicated by the Job Stress Score (JScore). Higher stress levels were reflected in poorer outcomes on sexual well-being (SL Score) and overall health status (SF Score), while the impact on family life (IPFL Score) appeared limited. These findings emphasize the need for targeted interventions, including stress management programs, mental health support, and supportive workplace policies, to enhance the well-being and professional performance of female ICU healthcare professionals.

**Disclaimer:** None to declare.

**Conflict of Interest:** None to declare.

**Funding Source:** None to declare.

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