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ORIGINAL RESEARCH

Job Satisfaction and Job Performance Among Critical Care Nurses: The Moderating Role of Work Engagement in Public Hospitals

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Background: Nurses are pivotal to healthcare delivery, particularly in critical care settings where their performance directly affects patient outcomes. While job satisfaction and work engagement are established predictors of job performance, their interactive effects remain underexplored in low-resource and high-stress contexts such as Jordan.

Aim: This study examined the moderating role of work engagement in the relationship between job satisfaction and job performance among critical care nurses in Jordan.

Methods: A descriptive cross-sectional design was employed with a convenience sample of 143 registered nurses from four public hospitals in Jordan. Data were collected using validated instruments: Demographic and Professional Characteristics Sheet, The Job Satisfaction Survey (JSS), the Utrecht Work Engagement Scale (UWES-9), and the Six-Dimension Scale of Nursing Performance (SDSNP). Descriptive statistics, Pearson's correlation, independent t-tests, and moderation analysis were conducted using SPSS v26.

Results: Participants reported moderate levels of job satisfaction (M = 2.90/4), work engagement (M = 3.58/6), and job performance in terms of both frequency (M = 3.31/4) and quality (M = 3.11/4). Job satisfaction positively correlated with work engagement ($r = 0.28$, $p < 0.001$) and job performance quality ($r = 0.21$, $p < 0.05$), but not frequency. Work engagement significantly moderated the relationship between job satisfaction and job performance frequency ($\beta = 0.25$, $p = 0.027$), but not quality.

Conclusion: Work engagement enhances the positive impact of job satisfaction on performance frequency, emphasizing its critical role in sustaining nurse productivity. Targeted strategies to improve both job satisfaction and engagement may enhance performance outcomes and healthcare quality in high-acuity environments.

Keywords: work engagement, job satisfaction, job performance, ICU, nursing

Introduction

Healthcare systems are distinguished by the urgency of care delivery and the complexity of patient needs, making the performance of frontline providers, especially nurses, pivotal to healthcare outcomes.[1] Among healthcare professionals, nurses constitute the largest workforce and maintain the closest interaction with patients, directly influencing the quality of care and patient safety.[2] Critical care nurses, in particular, are instrumental in improving clinical outcomes, reducing morbidity and mortality, minimizing complications and medical errors, and optimizing healthcare costs.[3,4] As such, their job performance is essential not only to individual patient care but also to the overall effectiveness and efficiency of healthcare organizations.[5]

Job satisfaction among nurses has been identified as a foundational determinant of job performance.[6,7] Defined as the affective orientation an individual hold toward their work environment, job satisfaction encompasses attitudes toward

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tasks, et al, supervisors, and institutional policies.[8,9] Higher job satisfaction is consistently associated with improved job performance, patient safety, and workforce retention, whereas dissatisfaction contributes to high turnover and diminished care quality.[3,10,11]

Equally critical is the concept of work engagement, defined as "a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption". These sub-factors represent one's internal drive to reach specific goals. Vigor refers to "high levels of energy and mental resilience while working and the willingness and ability to invest effort in one's work".[12] Nurses with high engagement levels tend to demonstrate enthusiasm, resilience, and sustained involvement in their roles, which in turn fosters productivity and job satisfaction.[13] Recent literature suggests that work engagement may act as a motivational mechanism linking job satisfaction with performance outcomes, particularly in high-stress environments like critical care units.[13,14]

These constructs (job satisfaction, work engagement, and job performance) are central to organizational psychology and nursing science. The Job Demands-Resources (JD-R) model offers a theoretical lens to understand their interrelationships.[15] According to Bakker and Demerouti (2018), job resources (eg, autonomy, support, feedback) foster engagement, while job demands (eg, workload, emotional exhaustion) can lead to burnout. When nurses perceive sufficient job resources, they are more likely to exhibit vigor, dedication, and absorption, which are the key indicators of engagement.[13] Additionally, the Social Exchange Theory (SET) explains the reciprocal relationship between job satisfaction and performance. SET posits that workplace relationships are built on a norm of reciprocity: when employees perceive fair treatment, support, and trust from their organization, they feel morally obligated to return the favor through positive attitudes and behaviors, such as improved performance, commitment, and reduced turnover. In nursing practice, this may manifest as greater patient advocacy, teamwork, and a willingness to go beyond minimum duties when nurses feel valued and supported by their supervisors and institutions. This theoretical framework underscores why emotionally and psychologically satisfied nurses are more likely to remain engaged and contribute meaningfully to organizational goals. Both frameworks support the proposition that work engagement may serve as a motivational bridge or moderator between satisfaction and performance, particularly in complex, high-stress environments like critical care units. Employees satisfied with their work environment are more likely to reciprocate with higher performance and organizational loyalty.[16] These psychological frameworks support the proposition that work engagement may act as a mediator or moderator in the satisfaction–performance relationship.

Substantial global evidence affirms the link between job satisfaction, work engagement and nurse performance, particularly in high stress health care environments. Studies across varied context, including China and Malaysia, report that satisfied and engaged nurse deliver higher-quality care and exhibit lower turnover intentions.[2,12] While regional research in the Middle East is emerging, many of the challenges such as administrative burden, limited autonomy and structural stressors[17,18] mirror those in Jordan.

Importantly, recent literature positions work engagement not only as an outcome of job satisfaction but also as a potential moderator. That is, even when job satisfaction is high, performance may vary depending on engagement levels. According to Khusanova, Kang and Choi,[19] engagement amplifies employees' willingness to invest their physical, emotional, and cognitive resources, thereby enhancing job performance. Engaged nurses report higher resilience, stronger interpersonal relationships, and better task focus—all of which contribute to more effective clinical care.[20] Despite this theoretical support, empirical evidence for this moderating role is still limited, particularly within nursing populations. Specifically in Jordan, critical care nurses confront high patient acuity, emotional exhaustion and staffing shortages.,[21] Al-Hamdan, Manojlovich and Tanima[22] documented a nurse turnover rates exceeding 36.6%,[22] attributing it dissatisfaction with pay, poor career progression, and unsustainable workloads. These factors compromise not only engagement and morale but also threaten care quality and safety.[23] These factors that also diminish engagement and morale. This issue is particularly pressing in intensive and critical care units, where nurses face demanding patient loads, emotional stress, and rapid clinical decision-making. These environments demand not only technical proficiency but also sustained engagement and psychological resilience.[10,24] Jordanian critical care nurses face unique stressors such as emotional exhaustion, high patient acuity, and inadequate staffing, which collectively compromise job satisfaction and engagement.[10] These occupational and systemic stressors contribute to a cycle of disengagement, dissatisfaction, and diminished performance.

Yet, little is known about how psychological constructs like job satisfaction and engagement influence nurse performance in these settings. Despite emerging regional research, the specific pathways linking job satisfaction and performance, particularly through engagement, remain underexplored in Arab countries. There is a notable lack of empirical studies examining these dynamics in critical care settings, where performance expectations and environmental stressors are uniquely high. Furthermore, no known studies in Jordan have examined how work engagement moderates the relationship between job satisfaction and job performance among critical care nurses. This oversight limits the development of evidence-based strategies aimed at enhancing nurse retention, improving job performance, and ultimately ensuring high-quality patient care.

This study seeks to address this critical gap by:

- Assessing the direct relationships between job satisfaction, work engagement, and job performance;
- Examining the moderating effect of work engagement on the relationship between job satisfaction and job performance; and
- Exploring contextual and demographic variables that may influence these constructs.

Specifically, this research focuses on nurses working in critical care units in Jordan, aiming to clarify how work engagement shapes the satisfaction–performance link.

Methods

Study Design

This study employed a descriptive cross-sectional correlational design to explore the relationships among job satisfaction, work engagement, and job performance among registered nurses working in critical care units in Jordan. The design allowed the researcher to examine multiple variables simultaneously and to assess associations among them without manipulating any variables.[25]

Study Setting

The study was conducted in four major governmental hospitals in central Jordan, under the jurisdiction of the Ministry of Health (MOH). These hospitals provide a significant portion of Jordan's public healthcare services: Al-Basheer Hospital in Amman, the largest public hospital in Jordan, includes four hospital wings and approximately 1,000 beds staffed by over 1,300 nurses; New Zarqa Governmental Hospital, with 464 beds and 369 nurses; Al-Salt Governmental Hospital, with 450 beds and 432 nurses; and Prince Faisal Hospital, with 169 beds and 174 nurses. These hospitals were chosen due to their size, diversity of critical care services, and representation of the general public healthcare context in Jordan.

Study Population and Sampling

The target population comprised all registered nurses working in critical care units across the selected governmental hospitals. A convenience sampling technique was used, with inclusion criteria as follows: Registered Jordanian nurses; Currently employed in a critical care unit; Having a minimum of one year of work experience at the current hospital; Willingness to participate voluntarily in the study.

The sample size was estimated using G*Power version 3.1.9.2.[26] Based on a significance level of $\alpha = 0.05$, power = 0.95, and a medium effect size of 0.15 for linear multiple regression with two predictors, the minimum required sample size was calculated to be 107. An additional 30% was recruited to account for non-response, resulting in a final target sample of 140 participants.

Instruments

Data were collected using a self-administered online questionnaire, composed of the following sections:

1. Demographic and Professional Characteristics Sheet: Developed by the researcher, this section gathered data on age, gender, marital status, education, and years of professional and unit-specific experience.
2. Utrecht Work Engagement Scale (UWES-9): It measured work engagement;[27] which assesses three dimensions: vigor, dedication, and absorption. Each subscale contains three items rated on a 7-point Likert scale (0 = Never to 6 = Always). The scale has shown strong psychometric properties; Cronbach's alpha = 0.92, with subscale reliabilities ranging from 0.76 to 0.89.[27–29] Higher scores indicating higher engagement and lower scores indicating lower engagement, cut-off values were statistically specified to give a clear meaning for the calculated scores for high (4–6), moderate ($2 < x < 4$), and low ($0 < x < 2$) reported engagements[30,31]).
3. Six Dimension Scale of Nursing Performance (SDSNP): It used to assess the Job Performance. SDSNP is developed by Schwirian,[32] which evaluates leadership, critical care, teaching/collaboration, planning/evaluation, interpersonal communication, and professional development across 52 items. Each item is rated on a 4-point Likert scale. Internal consistency for the overall scale is high ($\alpha = 0.95$), with subscale reliabilities ranging from 0.65 to 0.85.[33]
4. Job Satisfaction Survey (JSS): It used to evaluate the Job Satisfaction. JSS is developed by Spector[34] was used to assess nine core dimensions of job satisfaction: pay, promotion, supervision, benefits, contingent rewards, operating procedures, et al, nature of work, and communication. In this study, we used the short version of the JSS, comprising seven items, with permission from the original authors of two prior studies (Kamal et al, 2012; Dargahi & Shaham, 2011) who had adapted it for healthcare contexts.[35,36] Each item was rated on a 4-point Likert-type scale with the following anchors: 4 = Very Dissatisfied, 3 = Dissatisfied, 2 = Satisfied, 1 = Very Satisfied. It is important to note that the original JSS does not prescribe formal cutoff scores or published mean norms to determine satisfaction levels. Therefore, to support interpretation, we adopted approximate cutoff ranges used in previous regional studies, purely for analytical clarity.[37] Higher mean scores indicate greater dissatisfaction, and lower mean scores reflect higher satisfaction. For this study, we report descriptive means rather than classifying levels of satisfaction categorically.[36,38]

In this study, we utilized the English version of the questionnaires. A pilot study was conducted with 40 nurses outside the primary sample to assess the validity and reliability of the instruments. The results demonstrated a Cronbach's alpha of 0.87, indicating good internal consistency. Face validity was confirmed by participating nurses, while content validity was established through expert review, with consensus on the appropriateness of all items. Construct validity was supported by correlation coefficients ranging from 0.69 to 0.89. Furthermore, the Kaiser-Meyer-Olkin (KMO) measure was 0.89, and Bartlett's test of sphericity was statistically significant, both confirming the suitability of the data for factor analysis and supporting the overall validity of the scale. The expected time to complete the online questionnaires was 15 minutes.

Ethical Considerations

Ethical approval for this study was obtained from the Institutional Review Board (IRB) of the primary investigator's university (Approval No: 25/2023), followed by formal permissions from the Jordan Ministry of Health and the respective hospital administrations. Participants' rights to anonymity and confidentiality were upheld through multiple safeguards: (1) a clear explanation of the study's purpose and significance, (2) the use of a participant consent form, (3) coded, sealed questionnaires, (4) assurance of the right to voluntarily withdraw at any point, and (5) a guarantee that only aggregated results would be shared. To address ethical concerns regarding voluntary participation, a consent form, study objectives, and confidentiality assurances were included with the questionnaire package. Participation was entirely voluntary and free from coercion. All data, including participants' WhatsApp numbers, were securely stored on the principal investigator's password-protected personal computer, accessible only by the researcher. Additionally, the researcher's WhatsApp number was provided to address any participant inquiries.

Data Collection Procedure

Data collection commenced following the receipt of IRB approval. The primary investigator (PI) visited the nurse managers at each hospital and explained the study's objectives and significance. The PI then proceeded to the designated

data collection units—including the Intensive Care Units (ICU), Cardiac Care Units (CCU), and Neonatal Intensive Care Units (NICU) to introduce herself to the responsible nurse managers and further clarify the study procedures.

After obtaining verbal approval and agreement from the nursing staff to participate, the nurses suggested distributing the study materials through their WhatsApp workgroups. Contact information for the unit managers was collected to facilitate communication with participants. An electronic, web-based questionnaire package was created using online software. This package included the informed consent form, study objectives, instructions for completing the questionnaires, and the study instruments. The invitation link was first sent to the unit managers via WhatsApp, who then shared it with their respective WhatsApp workgroups. A reminder message was sent by the managers to all participants one week after the initial invitation to encourage participation. Data collection was conducted from July 14, 2024, to August 4, 2024. A total of 210 eligible nurses were invited to participate. Of these, 143 completed the survey, yielding a response rate of 68.1%. The minimum required sample size was 140, which was successfully exceeded.

Data Analysis

The data were checked for completeness and accuracy. Missing or invalid responses were excluded, and outliers were identified and removed using statistical methods (such as box plots). Coding and data entry were done before starting the data analysis process. Then, the assumptions for using parametric statistical tests were checked before starting the process (each individual in the sample is independent of others, normally distributed, homogeneity of variance). IBM SPSS version 26 was used to analyze the data (SPSS 26). Descriptive statistics (means, standard deviation, and frequencies) were used to present the characteristics of Jordanian registered nurses who participated in the study.

An independent-sample *t*-test was used to determine whether significant differences existed in job satisfaction and performance levels based on marital status, educational attainment, shift pattern, and gender. Pearson's r was used to test the relationship between continuous demographics and job satisfaction and job performance. Also, Pearson's correlation was used to test the relationship between job satisfaction and job performance, the relationship between job performance and work engagement, and the relationship between job satisfaction and work engagement. Moderation analysis was performed (using regression test) to determine the moderating role of work engagement in the relationship between job satisfaction and job performance.

Results

Sociodemographic and Professional Characteristics

A total of 143 nurses participated in the study. The mean age of participants was 28.7 years old (SD = 7.1 years). More than half of the participants were females (n = 80, 55.9%). In terms of marital status, the majority of the participants were unmarried (n = 92, 64.3%). When asked about their educational attainment, most participants responded that they had completed an undergraduate degree (ie, Bachelor of Science) (n = 124, 86.7%). The mean length of practicing as a nurse was six years (SD = 6.4 years), while the mean length of working in their current hospital department was 3.6 years (SD = 3.9 years). In terms of shift pattern, more than half of the participants worked on a rotating shift (n = 78, 54.5%). There is a wide range in the number of patients cared for by participants per shift, with an average number of 6 patients (SD = 12 patients). Lastly, the average monthly income was 694.1 JD (SD = 1,104.9 JD). Table 1 shows the sociodemographic and professional characteristics of participants.

The Level of Job Satisfaction, Work Engagement and Job Performance

Results showed that participants had a moderate level of job satisfaction (m = 2.90 out of 4, SD = 0.35) (Table 2). The item with the highest score was item 5 ("I feel proud when I tell others that I am an important part of hospital staff") (m = 3.21 out of 4, SD = 0.59). On the other hand, the item with the lowest score was item 6 ("I feel satisfied about my salary".) (m= 2.45 out of 4, SD = 0.85).

Results also showed that participants had moderate levels of work engagement (m = 3.58 out of 6, SD = 0.95) (Table 2). The item with the highest score was item 7 ("I'm proud of the work that I do".) (m = 4.18 out of 6, SD = 1.47) while the item with the lowest score was item 5 ("When I get up in the morning, I feel like going to work".) (m = 3.21 out of 6, SD = 1.25).

Table 1 Sociodemographic and Professional Characteristics (n = 143)

	Mean	**SD**
Age	28.7	7.1
Length of experience as a registered nurse (in years)	6.0	6.4
Length of experience in current hospital (in years)	3.6	3.9
Patient load	6	12
Monthly income	694.1	1104.9
	Frequency (*n*)	**Percentage (%)**
Sex		
Male	63	44.1
Female	80	55.9
Marital Status		
Unmarried	92	64.3
Married	51	35.7
Education		
Bachelor's	124	86.7
Postgraduate	19	13.3
Shift		
Day	43	30.1
Night	22	15.4
Rotation	78	54.5

Table 2 The Descriptive Statistics of Job Satisfaction, Work Engagement, and Job Performance (n=143)

Item No.		**Mean**	**SD**
Job Satisfaction			
1	I feel satisfied as a nurse.	2.85	0.68
2	My current profession provides me with the chance to develop.	2.89	0.70
3	I want appreciation when I do my job very well.	3.18	0.67
4	I feel accomplished in the nursing profession.	3.05	0.56
5	I feel proud when I tell others I am an important part of hospital staff.	3.21	0.59
6	I feel satisfied about my salary.	2.45	0.85
7	I am not satisfied with my profession in terms of facilities.	2.69	0.72
Total		2.90	0.35

(*Continued*)

Table 2 (Continued).

Item No.		Mean	SD
Work engagement			
1	At my work, I feel bursting with energy.	3.43	1.23
2	At, my job, I feel strong and vigorous.	3.74	1.30
3	I am enthusiastic about my job.	3.57	1.34
4	My job inspires me.	3.69	1.46
5	When I get up in the morning, I feel like going to work.	3.21	1.25
6	I feel happy when I am working intensely.	3.23	1.37
7	I am proud of the work that I do.	4.18	1.47
8	I am immersed in my work.	3.74	1.38
9	I get carried away when I am working.	3.45	1.32
Total		3.58	0.95
Quality of Job performance			
Dimensions		***Mean***	***SD***
1	Interpersonal relations	3.12	0.60
2	Leadership	3.09	0.60
3	Critical care	3.16	0.61
4	Teaching	3.06	0.59
5	Planning	3.12	0.64
6	Professional development	3.14	0.63
Frequency of job performance			
Item No.		***Mean***	***SD***
1	Teach a patient's family members about the patient's needs.	3.37	0.91
2	Coordinate the plan of nursing care with the medical plan of care.	3.38	0.81
3	Give praise and recognition for achievement to those under his/her direction	3.08	0.83
4	Teach preventive health measures to patients and their families.	3.25	0.84
5	Identity and use community resources in developing a care plan for a patient and his/her family.	3.07	0.84
6	Identify and include in nursing care plans anticipated changes in patient's conditions.	3.26	0.80
7	Evaluate results of nursing care.	3.24	0.85
8	Promote the inclusion of patient's decision and desires concerning his/her care.	3.20	0.81
9	Develop a plan of nursing care for a patient.	3.36	0.79
10	Initiate planning and evaluation of nursing care with others.	3.15	0.83
11	Perform technical procedures: eg oral suctioning, tracheostomy care, IV therapy, catheter care, dressing changes.	3.40	0.84

(*Continued*)

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Table 2 (Continued).

Item No.		Mean	SD
12	Adapt teaching methods and materials to the understanding of the particular audience: eg, age of patient, educational background and sensory deprivation.	3.25	0.79
13	Identify and include immediate patient needs in the plan of nursing care.	3.36	0.80
14	Develop innovative methods and materials for teaching patients.	3.15	0.90
15	Communicate a feeling of acceptance of each patient and a concern for the patient's welfare.	3.24	0.75
16	Seek assistance when necessary.	3.38	0.71
17	Help a patient communicate with others.	3.15	0.87
18	Use mechanical devices: eg, suction machine, Gomco, cardiac monitor, respirator	3.41	0.81
19	Give emotional support to family of dying patient.	3.31	0.83
20	Verbally communicate facts, ideas, and feelings to other health care team members.	3.34	0.79
21	Promote the patients' rights to privacy.	3.59	0.62
22	Contribute to an atmosphere of mutual trust, acceptance, and respect among other health team members.	3.43	0.69
23	Delegate responsibility for care based on assessment of priorities of nursing care needs and the abilities and limitations of available health care personnel.	3.31	0.78
24	Explain nursing procedures to a patient prior to performing them.	3.50	0.76
25	Guide other health team members in planning for nursing care.	3.35	0.76
26	Accept responsibility for the level of care under his/her direction.	3.38	0.71
27	Perform appropriate measures in emergency situations.	3.50	0.69
28	Promote the use of interdisciplinary resource persons.	3.36	0.75
29	Use teaching aids and resource materials in teaching patients and their families.	3.20	0.82
30	Perform nursing care required by critically ill patients.	3.41	0.85
31	Encourage the family to participant in the care of the patient.	3.34	0.80
32	Identify and use resources within the health care agency in developing a plan of care for a patient and his/her family.	3.22	0.83
33	Use nursing procedures as opportunities for interaction with patients.	3.32	0.75
34	Contribute to productive working relationships with other health team members.	3.36	0.75
35	Help a patient meet his/her emotional needs.	3.31	0.78
36	Contribute to the plan of nursing care for a patient.	3.38	0.74
37	Recognize and meet the emotional needs of a dying patient.	3.30	0.79
38	Communicate facts, ideas, and professional opinions in writing to patients and their families.	3.20	0.91
39	Plan for the integration of patient needs with family needs.	3.26	0.80
40	Function calmly and competently in emergency situations.	3.39	0.77
41	Remain open to the suggestions of those under his/her direction and use them when appropriate.	3.33	0.73
42	Use opportunities for patient teaching when they arise.	3.24	0.86
Total		3.31	0.56

Note: All values represent descriptive statistics (Mean ± SD). No inferential statistics (p-values) were computed for individual items. See Results section for corresponding significance tests.

Two characteristics of job performance were measured in the study. One is the character of frequency (Table 2) (ie, how often a particular skill is performed), and the other is quality (Table 2) (ie, how satisfactory the level of performance on a particular skill). Results showed that nurses frequently performed (m = 3.31 out of 4, SD = 0.56) and performed well on specific nursing tasks (m = 3.11 out of 4, SD = 0.56). On the other hand, the dimensions of job performance were measured for the nurse participants. The dimension with the highest score is Critical Care (m = 3.16 out of 4, SD = 0.61), while the dimension with the lowest score is Teaching (m = 3.06 out of 4, SD = 0.59) (See Table 2).

In terms of the frequency of nursing performance, the three tasks or skills that were most frequently performed were (1) item 21 ("Promote the patient's rights to privacy".) (m = 3.59 out of 4, SD = 0.62), followed by (2) item 24 ("Explain nursing procedures to a patient prior to performing them".) (m = 3.50 out of 4, SD = 0.76), and (3) item 27 ("Perform appropriate measures in emergency situations".) (m = 3.50 out of 4, SD = 0.69). On the other hand, the least frequently performed tasks or skills were (1) item 5 ("Identify and use community resources in developing a plan of care for a patient and his/her family".) (m = 3.07 out of 4, SD = 0.84), followed by item 3 ("Give praise and recognition for achievement to those under his/her direction".) (m = 3.08 out of 4, SD = 0.83), item 10 ("Initiate planning and evaluation of nursing care with others".) (m = 3.15 out of 4, SD = 0.83), item 14 ("Develop innovative methods and materials for teaching patients".) (m = 3.15 out of 4, SD = 0.90), and item 17 ("Help a patient communicate with others".) (m = 3.15 out of 4, SD = 0.87).

In terms of the quality of nursing performance, the items that were very well performed were item 11 ("Perform technical procedures such as oral suctioning, tracheostomy care, IV therapy, catheter care, and dressing changes".) (m = 3.26 out of 4, SD = 0.78), followed by item 47 ("Maintain high standards of performance".) (m = 3.24 out of 4, SD = 0.79), and item 13 ("Identify and include immediate patient needs in the plan of nursing care".) (m = 3.23 out of 4, SD = 0.77). On the other hand, tasks or skills that were not performed well were item 5 ("Identify and use community resources in developing a plan of care for a patient and his/her family".) (m = 2.93 out of 4, SD = 0.85), followed by item 31 ("Encourage the family to participate in the care of the patient".) (m = 3.01 out of 4, SD = 0.87), item 32 ("Identify and use resources within the health care agency in developing a plan of care for a patient and his/her family".) (m = 3.01 out of 4, SD = 0.82), item 17 ("Help a patient communicate with others".) (m = 3.03 out of 4, SD = 0.78), item 19 ("Give emotional support to a family of dying patient".) (m = 3.03 out of 4, SD = 0.87), item 29 ("Use teaching aids and resource materials in teaching patients and their families".) (m = 3.03 out of 4, SD = 0.78), item 38 ("Communicate facts, ideas, and professional opinions in writing to patients and their families".) (m = 3.03 out of 4, SD = 0.79), and item 43 ("Use learning opportunities for ongoing personal and professional growth".) (m = 3.03 out of 4, SD = 0.80) (See Table 2).

The Relationship Between Main Variables; Job Satisfaction, Work Engagement and Job Performance

Table 3 shows the relationship between job satisfaction and work engagement; the results showed that job satisfaction has a significant, positive, but weak relationship with work engagement ($r = 0.28$, $p < 0.001$). Participants with high levels of work engagement had high levels of job satisfaction. Job performance frequency ($r = 0.48$, $p < 0.001$) and quality ($r = 0.49$, $p < 0.001$) had a significant, positive, and moderately strong relationship with work engagement. Participants with high levels of work engagement had high levels of frequency and quality of job performance. Results showed that job satisfaction had a significant, positive, and weak relationship with quality of job performance ($r = 0.21$, $p < 0.05$) but not with its frequency ($r = 0.107$, $p = 0.202$). Participants who had high levels of job satisfaction also had high levels of job performance quality (See Table 3).

The Job Satisfaction and Job Performance Based on Sociodemographic Characteristics

Independent *t*-test was used to determine whether significant differences existed in job satisfaction and job performance levels based on marital status, educational attainment, shift pattern, and gender. No significant differences were found in job performance scores based on the demographic variables (Table 4). However, female participants had significantly higher mean scores on job satisfaction (M=2.96, SD= 0.33) than their male counterparts (M= 2.83, SD=0.36) (P= 0.03) (See Table 4).

Table 3 The Relationship Between Main Study's Variables

Variables	**Job Satisfaction**
Work Engagement	***r* = 0.28 (*p* < 0.001)**
Variables	**Work engagement**
Job performance (quality)	***r* = 0.49 (*p* < 0.001)**
Job performance (frequency)	***r* = 0.48 (*p* < 0.001)**
Variables	**Job satisfaction**
Job performance (quality)	***r* = 0.21 (*p* < 0.05)**
Job performance (frequency)	***r* = 0.107 (*p* =0.202)**

Note: Significant results p<0.05.

Table 4 The Job Satisfaction and Job Performance Based on Sociodemographic Characteristics

Categorical Variables		**Job Satisfaction**		**Job Performance Quality**		**Job Performance (Frequency)**	
		T	***P***	**T**	***P***	***T***	***p***
Marital status		0.28	0.32	0.72	0.76	0.34	0.73
Educational attainment		0.20	0.44	0.23	0.19	0.24	0.81
Shift pattern		−1.15	0.10	−0.29	0.14	0.33	0.72
Gender		−2.21	0.03	0.05	0.96	0.80	0.42
Continuous Variables		**Job satisfaction**		**Job performance (frequency)**		**Job performance (quality)**	
Age	R	0.009		0.012		−0.008	
	P-value	0.916		0.891		0.920	
Experience in nursing	R	0.037		0.020		0.047	
	P-value	0.663		0.810		0.582	
Patient Load	R	−0.079		−0.206*		−0.177*	
	P-value	0.363		0.017		0.041	
Income	R	0.180*		−0.053		0.056	
	P-value	0.033		0.534		0.514	
Experience in department	R	0.004		0.174*		0.096	
	P-value	0.961		0.049		0.283	

Note: *significant relationship.

Pearson's r was used to test the relationship between continuous demographics and job satisfaction and performance. Results showed that the quality of job performance has a significant negative relationship with patient load (r = −0177, p < 0.05). In contrast, the frequency of job performance has a significant negative relationship with patient load (r = −0.206, $p < 0.05$) and positive relationship with experience in the current department ($r = 0.17$, $p < 0.05$). Job satisfaction has a significant positive relationship with income ($r = 0.180$, $p < 0.05$) (See Table 4).

Table 5 Moderating the Role of Work Engagement on the Relationship Between Job Satisfaction and Frequency of Job Performance

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	4.873	1.151		4.233	0.000*
JS	0.873	0.388	0.551	2.249	0.026*
WE	0.459	0.338	0.780	1.359	0.176
Interaction	0.249	0.112	1.511	2.233	0.027*
Dependent Variable: Job performance frequency					

Note: *Significant.

Table 6 Moderating the Role of Work Engagement on the Relationship Between Job Satisfaction and Quality of Job Performance

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2.242	1.172		1.913	0.058
JS	0.036	0.395	0.022	0.090	0.928
WE	0.128	0.344	0.216	0.372	0.710
Interaction	0.049	0.114	0.296	0.433	0.665
Dependent Variable: Job performance quality					

Moderating the Role of Work Engagement on the Relationship Between Job Satisfaction and Job Performance

Moderation analysis was performed to determine the moderating role of work engagement in the relationship between job satisfaction and job performance (Tables 5 and 6). The model explained 28% of the frequency of job performance and 24% of its quality. Results showed that work engagement was a significant moderator in the relationship between job satisfaction and the frequency of job performance (See Table 5 but not in the relationship between job satisfaction and the quality of job performance (See Table 6).

As noted in the Figure 1, the impact of job satisfaction on job performance frequency was positive among participants with high work engagement but unfavorable among people with low work engagement, participants with high levels of work engagement had high levels of job satisfaction (See Figure 1).

Discussion

The findings of this study revealed that nurses reported moderate levels of job satisfaction (M = 2.90), work engagement (M = 3.58), and job performance in both frequency (M = 3.31) and quality (M = 3.11). Work engagement showed a moderate, significant positive correlation with both the frequency and quality of job performance, and a weak but significant correlation with job satisfaction. Job satisfaction was weakly but significantly associated with job performance quality, but not with its frequency. Moderation analysis confirmed that work engagement significantly moderated the relationship between job satisfaction and job performance frequency, though it did not moderate the satisfaction–quality performance link. This discrepancy may be explained by task complexity and measurement limitations. Frequency reflects consistent task execution, which engagement may enhance through increased energy and focus. In contrast, quality may be influenced by contextual factors such as clinical competence, autonomy, and feedback, which were not directly captured in this study's variables. Hence, engagement alone may not be sufficient to affect perceived quality of performance. Additionally, sociodemographic factors such

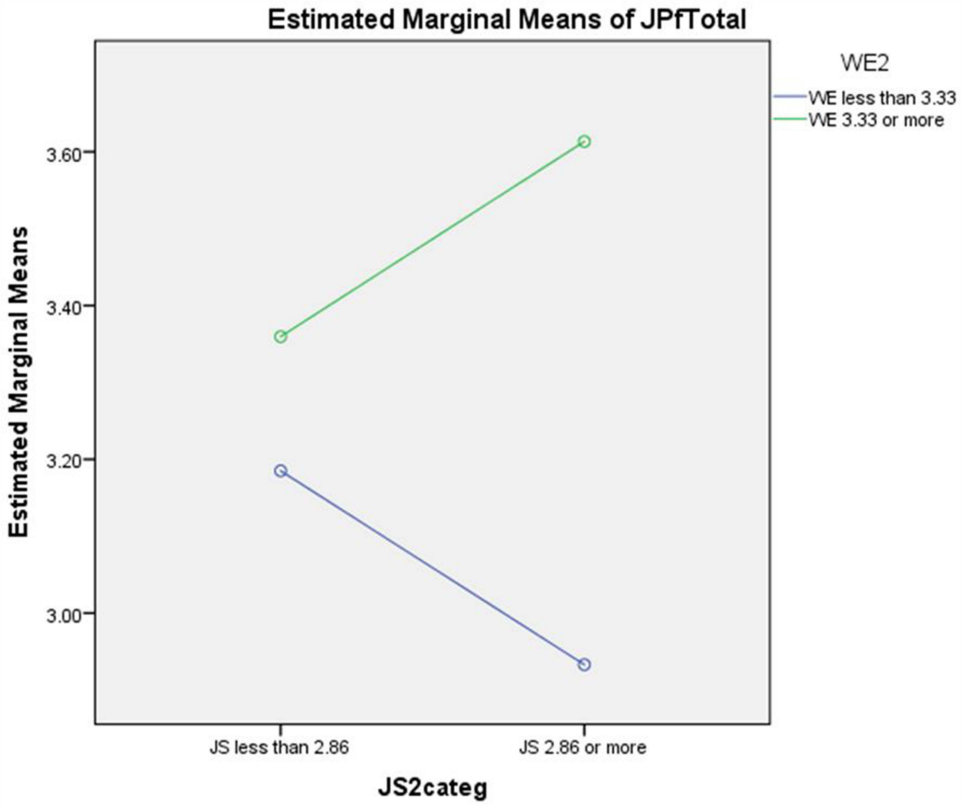

Figure 1 The impact of job satisfaction on frequency of job performance with moderation of work engagement.

as gender, income, and patient load were found to influence job satisfaction and performance. Female nurses and those with higher incomes reported greater satisfaction, while higher patient loads were negatively correlated with performance indicators.

Levels of Job Satisfaction, Job Performance, and Work Engagement

This study identified moderate levels of job satisfaction, job performance, and work engagement among Jordanian critical care nurses. These findings align with previous regional studies, such as those by Alfuqaha, Al-Hairy, Al-Hemsi, Sabbah, Faraj and Assaf[37] and Alotaibi,[39] both of which reported moderate job satisfaction levels among nurses. Similarly, Kurt and Demirbag[38] observed that nurses across various clinical settings often express moderate satisfaction with their roles. However, these findings contrast with several international studies reporting low satisfaction levels[24,40] as well as others that reported high levels of satisfaction.[10,36] These differences in findings may be explained by variations in study settings and working environments across different healthcare systems.

Work engagement was also found to be moderate, consistent with Alali,[41] who observed similar engagement levels among ICU nurses. However, variations in reported engagement may be influenced by the specific demands and dynamics of critical care environments. Notably, the frequency and quality dimensions of job performance also scored moderately high, suggesting that nurses perceive themselves as competent but with potential for improvement, especially in educational and interpersonal domains. This supports the assertion by Al-Ajarmeh, Rayan, Eshah and Al-Hamdan[21] that while nurses in critical settings perform well, continuous professional development remains essential. Although numerous initiatives are being implemented within Ministry of Health settings to improve nurses' work environments and job satisfaction, the persistence of only moderate levels suggests that these efforts may not yet be sufficiently addressing the root causes of dissatisfaction or disengagement. This highlights the need for a more targeted, evidence-based approach that considers organizational culture, workload, and professional development opportunities to enhance job satisfaction, work engagement, and overall performance among critical care nurses.

Relationship Among Job Satisfaction, Work Engagement, and Job Performance

The study revealed a weak positive correlation between job satisfaction and work engagement, affirming prior findings by Wei, Sewell, Woody and Rose[20] and Yildiz and Yildiz,[14] which emphasized engagement as a motivational factor enhancing satisfaction and productivity. A moderate correlation between work engagement and job performance quality and frequency indicates that engagement plays a key role in enabling effective practice. Conversely, job satisfaction alone showed a weak correlation with job performance, particularly its frequency dimension, echoing Lu, Zhao and While[9] and Bellali, Panayiotou, Liamopoulou, Mantziou, Minasidou and Manomenidis[42] those who highlighted the complexity of performance predictors beyond satisfaction alone. This unexpected lack of association may be due to the complexity of performance, where intrinsic motivation (ie, engagement) is a more proximal driver of action than general satisfaction. Alternatively, performance frequency may be less sensitive to emotional states and more governed by organizational expectations or routine clinical protocols.

Notably, the findings underscore that nurses with high engagement are more likely to translate satisfaction into consistent and quality-driven performance. This supports the conclusions of Ghazawy, Mohamed, Sameh and and Refaei[1] and Bernales-Turpo, Quispe-Velasquez, Flores-Ticona, Saintila, Ruiz Mamani, Huancahuire-Vega, Morales-García and Morales-García,[43] who found engagement essential for task-oriented performance in demanding settings. Thus, job satisfaction is necessary but not sufficient—nurses must also be engaged and supported.

These insights suggest that while job satisfaction provides a foundational emotional state, it is the presence of sustained engagement that catalyzes actual performance outcomes in critical care environments. This distinction is especially important in high-stress settings, where emotional resilience and intrinsic motivation, hallmarks of work engagement, are critical for maintaining care quality. Therefore, interventions aiming to improve nurse performance should not focus solely on increasing satisfaction through extrinsic rewards, but also prioritize strategies that foster deep engagement, such as autonomy, recognition, professional growth, and meaningful involvement in decision-making processes.

The Role of Socio-Demographic Characteristics

The study found female nurses had higher job satisfaction than males, supporting the assertions of Lu, Lu, Gursoy and Neale[12] and Romem and Rozani[44] that gender differences in satisfaction may stem from differing expectations and adaptability. However, other demographic variables like age, marital status, and years of experience showed no significant relationship with performance, consistent with findings from Dilig-Ruiz, MacDonald, Demery Varin, Vandyk, Graham and Squires[5] Bakker and Demerouti.[45]

Importantly, patient load negatively correlated with both frequency and quality of job performance, reaffirming findings by Griffiths, Recio-Saucedo, Dall'Ora, Briggs, Maruotti, Meredith, Smith and Ball[46] and Dilig-Ruiz, MacDonald, Demery Varin, Vandyk, Graham and Squires[5] on how increased workloads diminish care quality. Income was positively correlated with job satisfaction, validating Herzberg's theory of hygiene factors and the assertion by Lu, Zhao and While[9] that fair compensation supports employee morale.

These findings highlight the multifaceted nature of job satisfaction and performance among critical care nurses, where individual characteristics such as gender may influence emotional outcomes, while structural factors like workload and compensation have a more direct impact on practice quality. The absence of significant associations between demographic variables and performance reinforces the idea that systemic conditions, rather than personal attributes, play a greater role in shaping care outcomes. Consequently, nursing management and policymakers should focus on optimizing workload distribution and ensuring equitable compensation to foster both satisfaction and performance, particularly in high-demand clinical settings.

Moderating Role of Work Engagement

A key contribution of this study is confirming the moderating effect of work engagement in the relationship between job satisfaction and the frequency of job performance. Nurses with high engagement levels performed more consistently even when satisfaction was variable. This highlights the motivational power of engagement, echoing theories by Bakker

and Demerouti[45] and findings by Morton, Bowers, Wessels, Koen and Tobias[10] regarding the interplay of personality traits, resources, and engagement. Interestingly, engagement did not moderate the satisfaction-performance relationship in terms of quality, suggesting that while engagement drives consistency, quality may depend more on intrinsic and contextual factors such as autonomy, feedback, and clinical competence. This distinction underscores the complexity of performance drivers in nursing practice. While engagement enhances reliability and task completion, ensuring high-quality performance likely requires a combination of structural support, ongoing skill development, and a conducive work environment. These findings imply that to optimize both the consistency and quality of nursing care, interventions should be dual-pronged—fostering engagement through resource allocation and recognition, while also enhancing quality through clinical supervision, autonomy, and continuous professional development. This nuanced understanding can inform workforce strategies aimed at improving both the efficiency and excellence of patient care delivery.

The study addressed a literature gap in the Jordanian context, with adequate sample size and validated tools. However, the study has some limitations. First, its descriptive, cross-sectional design precludes establishing causal relationships between job satisfaction, work engagement, and job performance, and limits the ability to assess temporal stability in these associations. Second, convenience sampling from pre-selected Jordanian public hospitals restricts the generalizability of the findings to similar institutional settings and may not represent the broader nursing population across the country or region. Third, all measures were self-reported, raising the risk of social desirability bias and common-method variance, which could artificially inflate associations between variables. Future studies should incorporate supervisor ratings or objective performance data to address this concern. Fourth, while the moderation analysis revealed significant effects, interaction plots were not displayed due to space constraints; however, plotting was conducted as part of the analytical process and interpretations were based on the observed interaction effects. Fifth, although the Job Demands-Resources (JD-R) model and Social Exchange Theory were used to interpret the findings, they were not explicitly integrated into the statistical modeling. Finally, while the English version of the Job Satisfaction Survey (JSS) was used, cultural validity was established through expert panel review and pilot testing among Jordanian nurses to ensure conceptual and contextual relevance. Future research using longitudinal or cluster-randomized designs is recommended to strengthen causal inferences and external validity.

Conclusion

This study investigated the relationships among job satisfaction, work engagement, and job performance among critical care nurses in public hospitals in Jordan, revealing that while moderate levels were reported across all three variables, work engagement significantly moderated the relationship between job satisfaction and the frequency of job performance but not the quality. This nuanced finding highlights the pivotal role of engagement in sustaining consistent clinical effort, particularly when satisfaction alone may not be sufficient, while also pointing to the complexity of factors influencing performance quality. Moderate levels of satisfaction and engagement—though not critically low—may reflect latent risks of burnout or turnover, particularly in high-stress environments like critical care units. These findings indicate that while nurses perceive their work as meaningful, gaps in support, resources, or recognition may hinder optimal well-being and retention. The results have practical implications for nursing management and healthcare leadership. Nurse managers should implement targeted strategies that enhance both job satisfaction and engagement instead of general compensation increases, fair and transparent compensation systems, non-monetary incentives, workload balancing, and career advancement opportunities may better accommodate institutional constraints. Cultivating autonomy, professional respect, and involvement in unit-level decision-making can further elevate engagement. Maintaining high engagement levels can buffer fluctuations in job satisfaction and support stable performance, ultimately leading to improved patient outcomes and reduced turnover. Given the documented high nurse turnover rates in Jordan, these findings provide a timely and evidence-based framework for mitigating attrition by addressing the psychological and organizational factors that drive nurses' intent to stay or leave. While this study did not directly assess patient outcomes or turnover, prior research suggests that enhanced job satisfaction and engagement are associated with improved care quality and reduced attrition. From a policy perspective, healthcare administrators and policymakers should prioritize nurse engagement as a key component of workforce planning and quality assurance.

Institutional policies must aim to create supportive, communicative, and inclusive work cultures that empower nurses and promote a sense of professional value and ownership.

Furthermore, future research should adopt longitudinal designs to assess how job satisfaction, engagement, and performance evolve over time and identify effective interventions that sustain these variables. A deeper understanding of the mechanisms through which engagement enhances performance could inform leadership practices and educational programs tailored to high-acuity settings such as critical care units. Gaining insight into these psychological drivers is essential for designing targeted interventions that enhance workforce sustainability and improve patient care quality. The findings are expected to inform evidence-based human resource policies, engagement strategies, and clinical leadership models, thereby fostering a more satisfied, engaged, and high-performing nursing workforce in Jordan and similar healthcare settings.

Data Sharing Statement

The datasets generated and/or analysed during the current study are not publicly available due to participant confidentiality but are available from the corresponding author (Fadwa Alhalaiqa) on reasonable request.

Ethical Approval and Informed Consent

This study was approved by the Institutional Review Board of Zarqa University (Approval No: 25/2023). Informed consent was obtained from all participants prior to data collection. Participation was voluntary, and confidentiality was maintained throughout the study. All procedures performed were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising, or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

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