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ORIGINAL

Exploring Job Satisfaction and Caring Behaviors among Critical Care Nurses: A Descriptive Analytic Study

Exploración de la satisfacción laboral y las conductas de cuidado entre enfermeras de cuidados críticos: un estudio analítico descriptivo

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ABSTRACT

Introduction: caring behaviors are actions that prioritize the welfare of patients. Job satisfaction is one factor that can influence nurses' caring behaviors, as nurses with higher job satisfaction tend to exhibit more positive caring behaviors.
Objective: the study aimed to assess critical care nurses' job satisfaction levels, explore the dimensions of their caring behaviors, investigate the relationship between their caring behaviors and job satisfaction, and identify the significant independent predictors of nurses' job satisfaction and caring behavior in critical care units.
Method: the study used a descriptive-analytic, correlational, cross-sectional research design. It was conducted at the critical care units of King Fahd Military Medical Complex in Saudi Arabia. A convenience sample of 112 registered nurses completed an online survey that included the Job Satisfaction Survey and the Caring Behavior Inventory.
Results: the majority of respondents fall under the category of Ambivalent job satisfaction, constituting 67,9 % of the total nurses. The analysis indicated a moderate job satisfaction level and a high caring behavior among critical care nurses. The study found a positive correlation between nurses' job satisfaction and caring behaviors. Factors such as working hours, work unit, and years of experience were significantly associated with nurses' job satisfaction. However, factors like operational procedures, co-worker relationships, nature of work, and working hours were significant predictors of nurses' caring behavior.
Conclusion: the study highlights the importance of addressing job satisfaction factors to enhance critical care nurses' caring behaviors, which can ultimately improve patient outcomes. Strategies to enhance nurses' job satisfaction and support their caring practices should be a priority for healthcare organizations.

Keywords: Caring Behaviors; Critical Care Nurses; Job Satisfaction; Nursing Outcome; Saudi Arabia.

RESUMEN

Introducción: las conductas de cuidado son acciones que priorizan el bienestar de los pacientes. La satisfacción laboral es un factor que puede influir en las conductas de cuidado de las enfermeras, ya que las enfermeras con mayor satisfacción laboral tienden a exhibir conductas de cuidado más positivas.
Objetivo: el estudio tuvo como objetivo evaluar los niveles de satisfacción laboral de las enfermeras de cuidados críticos, explorar las dimensiones de sus conductas de cuidado, investigar la relación entre sus conductas de cuidado y la satisfacción laboral, e identificar los predictores independientes significativos de la satisfacción laboral y la conducta de cuidado de las enfermeras en unidades de cuidados críticos.
Método: el estudio utilizó un diseño de investigación descriptivo-analítico, correlacional y transversal. Se llevó a cabo en las unidades de cuidados intensivos del Complejo Médico Militar Rey Fahd en Arabia Saudita. Una muestra de conveniencia de 112 enfermeras registradas completó una encuesta en línea que incluía la Encuesta de Satisfacción Laboral y el Inventario de Conducta de Cuidado.
Resultados: la mayoría de los encuestados se encuentran en la categoría de satisfacción laboral ambivalente, lo que constituye el 67,9 % del total de enfermeras. El análisis indicó un nivel moderado de satisfacción laboral y un alto comportamiento de cuidado entre las enfermeras de cuidados críticos. El estudio encontró una correlación positiva entre la satisfacción laboral de las enfermeras y los comportamientos de cuidado. Factores como las horas de trabajo, la unidad de trabajo y los años de experiencia se asociaron significativamente con la satisfacción laboral de las enfermeras. Sin embargo, factores como los procedimientos operativos, las relaciones con los compañeros de trabajo, la naturaleza del trabajo y las horas de trabajo fueron predictores significativos del comportamiento de cuidado de las enfermeras.
Conclusión: el estudio destaca la importancia de abordar los factores de satisfacción laboral para mejorar las conductas asistenciales de los enfermeros de cuidados críticos, lo que en última instancia puede mejorar los resultados de los pacientes. Las estrategias para mejorar la satisfacción laboral de los enfermeros y apoyar sus prácticas asistenciales deberían ser una prioridad para las organizaciones de atención sanitaria.

Palabras clave: Comportamientos de Cuidado; Enfermeras de Cuidados Críticos; Satisfacción Laboral; Resultados de Enfermería; Arabia Saudita.

INTRODUCTION

Nursing practice emphasizes caring and delivering empathetic care to patients to ensure optimal treatment and to distinguish it from other healthcare professions. Nursing involves promoting health, preventing illness, caring for the sick, and recovering health. These responsibilities necessitate a compassionate attitude and approach.[1] To achieve this holistic approach, nurses express caring through different caring behaviors that profoundly impact the experiences of patients and their families. According to nursing literature, caring behaviors are actions that prioritize the welfare of patients. These actions include demonstrating sensitivity, providing comfort, listening attentively, being honest, and displaying nonjudgmental acceptance.[2]

In nursing practice, various factors, such as the patient's illness, the kind of hospital, the nurse's age and experience, self-respect, beliefs, and workplace settings, may affect how the nurses behave in caring ways.[2,3] It was found that the methods used in nursing assignments, a lack of time, and a lack of caring support in hospitals all significantly influence nurses' caring behaviors.[4]

Job satisfaction is one-factor influencing nurses' caring behavior, as the nurses with the highest job satisfaction mostly exhibit positive caring behaviors and demonstrate their love for work, discipline, and dedication to providing high-quality care services. Improving nurse job satisfaction is an important matter that ensures the provision of competent nursing staff who desire to improve patient outcomes and make an effort to improve patient outcomes.[5,6]

It is noteworthy that numerous studies have verified the direct correlation between job satisfaction and caregiving behaviors among nurses. This, in turn, leads to improved performance and a decrease in the intention to leave the workplace, particularly in high-pressure critical care units.[7,8] Job satisfaction is defined as professionals' favorable reaction to working circumstances that match their needs as a result of their appraisal of the worth or fairness of their professional experience.[6]

Several factors, including benefits and salary compensations, workload, recognition, institutional incentives, independence, and appreciation from coworkers, have influenced the nurses' job satisfaction and caring behaviors. Moreover, the constant presence of suffering and death, the use of advanced software, and other factors in a critical care setting may cause nursing professionals' dissatisfaction and reduce their quality of life at work. Workload, relationships with coworkers, autonomy, remunerations, and recognition were all indicators of nurses' job satisfaction in critical care units, in addition to leadership practice and organizational commitment.[6,9,10,11,12,13]

On the other hand, poor nursing outcomes can be linked to the adverse effects of nurses' job dissatisfaction in clinical settings. Job satisfaction impacts nursing care quality and safety, as well as their intentions to stay on the job and at the institution.[14] According to De Simone et al.[15], job satisfaction is a crucial workplace factor that negatively correlates with the nurses' intention to leave. Based on the study by Lu et al.[16], job satisfaction is vital for preserving the obligation of staff and warranting that patients are pleased with the superiority of nursing care.

Putra et al.[17] analysis confirmed the positive correlation between job satisfaction and care behaviors. It similarly emphasized the rank of wages and compensations and their impact on job satisfaction and care behaviors, as well as the quality of regulation within the hospital and its role in enhancing the act of nurses and attaining satisfactory levels of job satisfaction.

Oluma Abadiga[18] likewise established a positive association between job satisfaction and caring behaviors among nurses. Still, it highlighted that nurses desire perceptible care behaviors interrelated to the technical and qualified characteristics to a greater degree than the psychological and social features of caring behaviors. The investigation also concentrated on job satisfaction factors such as personal satisfaction, professionalism, satisfaction with nursing management, and collaboration in patient care.

Despite the importance of job satisfaction and caring behavior to nurses' job and patient care outcomes, there has been little empirical research on the association between job satisfaction and the caring behaviors of critical care nurses in Saudi Arabia. Most previous research concentrated on identifying antecedents of job satisfaction. For example, several studies have examined the impact of various structural and work-related factors on nurses' job satisfaction levels.[17,19 20] Therefore, this study aimed to identify job satisfaction and critical care nurses' caring behaviors and to investigate the correlation between them in a selected tertiary hospital in Saudi Arabia.

Objectives

The study aimed to assess job satisfaction levels and explore the dimensions of caring behavior among critical care nurses. Additionally, it sought to investigate the relationship between nurses' caring behaviors and job satisfaction and identify significant independent predictors of these factors among critical care nurses at a selected hospital in Saudi Arabia.

METHOD

The study used a descriptive-analytic, correlational, cross-sectional research design to explore the relationship between job satisfaction and caring behaviors among critical care nurses at a specific time. The study was carried out at the critical care units of King Fahd Military Medical Complex (KFMMC) in the last four months of 2023. KFMMC is the most modern medical institution among the Armed Forces Medical Service Hospitals in Saudi Arabia. It is located in Dhahran, which is situated in the eastern region of Saudi Arabia .

The targeted population for this study consisted of nursing staff working in the critical care units at KFMMC. A non-probability-based convenience sampling technique was employed. The required sample size was determined based on data from the literature[1] considering a type I error of 5 % and a power of 80 %. The formula used was:

$$n = \frac{(Z1-\alpha/2)\text{^}2.SD\text{^}2}{d\text{^}2}$$

Where:

n: is the sample size, Z1- alpha/2 is the standard normal variate, and 1,96 is the absolute error. SD stands for the standard deviation of the variable, and d for the absolute margin of error or the precision level.

$$n = \frac{(1.96)\text{^}2.(0.45)\text{^}2}{(0.027)\text{^}2} = 106.7$$

According to the calculation, the minimum required sample size for the study was 107. However, responses were ultimately obtained from 112 nurses working in the critical care units of the hospital.

The inclusion criteria specified that the study would include all registered nurses working in the critical care units at KFMMC. Conversely, the exclusion criteria covered nursing students, nurses from other floors and departments, and critical care nurses who refused to participate in the survey.

Potential participants were required to complete an online questionnaire that comprised the Job Satisfaction Survey (36 items), the Caring Behavior Inventory (CBI-24), and a sociodemographic datasheet.

Tool I: the Job Satisfaction Survey (JSS): A job satisfaction instrument known as the Job Satisfaction Scale (JSS) was initially developed by Spector[21] and subsequently modified by Spector.[22] It comprises 36 items

subdivided into nine sub-dimensions: salary, promotion, fringe benefit, contingent rewards, supervision, operation procedure, co-worker, nature of work, and communication. This instrument uses a Likert scale that has six points, with one representing "strongly disagree," two representing "substantially disagree," three representing "slightly disagree," four representing " slightly agree," five representing " moderately agree," and six representing "strongly agree." For the total of 36 items, the potential scores ranged from 36 to 216. The range of job dissatisfaction was 36 to 108, the range of job satisfaction was 144 to 216, and the ambivalent was between 109 and 143. The coefficient alpha of the scale was 0,90, which indicates acceptable reliability.[23]

Tool II: the Caring Behavior Inventory (CBI-24): The translated CBI-24 assessed the nurses' caring behavior.[24] The scale was based on Watson's caring hypothesis. The most recent updated version of the instrument had four subscales, and 24 items scored on a six-point Likert scale (1 = never, 2 = rarely, 3 = occasionally, 4 = usually, 5 = frequently, 6 = always). The CBI-24 has four components: "assurance of human presence" assesses availability for patients' needs and security; "professional knowledge and skills" assesses conscience and competence; "respectful difference to others" assesses attendance for the person's dignity; and "positive connectedness" assesses readiness to provide constant assistance to patients. The total points ranged from 24-144; the higher the score, the more frequently nurses exhibit caring behaviors. The Cronbach alpha coefficient was 0,95, as reported by the author of the scale.[24]

The research proposal, which outlined the scientific and ethical considerations, received approval from the Institutional Review Board of the Armed Forces Hospitals in the Eastern Province to conduct the study (Ethical approval number: AFHER-IRB-2023-024).

The study data was collected through an online survey from September to December 2023. The survey was created using Google Forms and distributed to staff nurses working in the critical care units of KFMMC. The distribution occurred via email and popular social media platforms. Each participant was required to accept the study conditions before completing the 10-minute survey. The study objectives were clearly stated on the cover page of the questionnaire.

Participation in the survey was entirely voluntary, and participants were not subject to any form of coercion. The survey instructions clearly stated that participation was optional and that participants were free to withdraw at any time without penalty. All data were collected anonymously, and the survey did not require participants to provide names or other identifying information. Responses were kept strictly confidential, and no individual-level data was shared or published.

For the current study, IBM SPSS Statistics 28 was used to analyze the data in accordance with the aim of the study.[25] Descriptive statistics were used to examine the sociodemographics of the participants. Internal consistency reliability statics were utilized to test the Alpha reliability of the scales. The Pearson Correlation technique was used to examine the relationship between variables. Furthermore, multiple regression models were used to identify the significant independent predictors of the nurses' caring behaviors among the sociodemographic characteristics and the job satisfaction dimensions.

RESULTS

The demographic data presented in table 1 provides a detailed snapshot of the study's participant composition, drawing from a sample size of n=112. The distribution across various demographic categories revealed nuanced insights into the makeup of the cohort under investigation. Notably, the age distribution showcased a predominant presence of individuals aged 26-35, comprising over half (54,5 %) of the sample, followed by those aged 36-45 (31,3 %). The relatively lower representation of individuals aged 22-25 years and 46-55 years suggested potential implications for understanding the generational diversity within the study's context.

Moreover, the gender distribution within the sample demonstrated a notable predominance of females (83,0 %), outnumbering males (17,0 %). Additionally, the distribution across marital status revealed a slight majority of married individuals (58,0 %) compared to single participants (42,0 %).

Furthermore, the diverse distribution of educational backgrounds and professional positions underscored the heterogeneity within the study population. While a substantial proportion of participants held bachelor's degrees (58,0 %), others possessed Diplomas (26,8 %) or Postgraduate qualifications (13,4 %). Similarly, the majority of participants occupied roles as Registered Nurses (71,4 %), with smaller contingents serving as Charge Nurses (18,8 %) or Unit Managers (9,8 %).

Observing the distribution (table 2), it was evident that the majority of respondents fell under the category of Ambivalent, constituting 67,9 % of the total sample size. This suggested that many nurses might have had mixed feelings or lacked a clear stance regarding their job satisfaction. In contrast, the respondents categorized as Satisfied constituted 27,7 % of the sample, indicating a substantial portion of nurses expressed contentment with their current job situation. However, it was noteworthy that the percentage of Dissatisfied respondents was relatively low at 4,5 %, suggesting that a minority of nurses experienced dissatisfaction within the sampled population.

Table 1. Demographic data (n=112)

Variable	Categories	n	%
Age	22-25	8	7,1
	26-35	61	54,5
	36-45	35	31,3
	46-55	8	7,1
Sex	Male	19	17,0
	Female	93	83,0
Marital	Married	65	58,0
	Single	47	42,0
Experience years	<1 year	7	6,3
	1-5	16	14,3
	6-10	29	25,9
	11-15	40	35,7
	16-20	13	11,6
	>20	7	6,3
Position	Charge Nurse	21	18,8
	Registered Nurse	80	71,4
	Unit Manager	11	9,8
Working unit	Surgical Intensive Care Unit (SICU)	12	10,7
	Coronary Care Unit (CCU)	9	8,0
	Emergency Room (ER)	37	33,0
	Adult Intensive Care Unit (AICU)	30	26,8
	Cardiac Intensive Care Unit (CICU)	5	4,5
	Neonatal Intensive Care Unit (NICU)	8	7,1
	Pediatric Intensive Care Unit (PICU)	11	9,8
working hours	12 hours shift	63	56,3
	Office hours	49	43,8
Educational level	Diploma	30	26,8
	Bachelor	65	58,0
	Postgraduate	15	13,4
	Associate degree	2	1,8

Table 2. Job Satisfaction levels

Job Satisfaction Description	n	%
Dissatisfied	5	4,5
Ambivalent	76	67,9
Satisfied	31	27,7

Table 3 provides an extensive overview of job satisfaction and its nine sub-dimensions. For the total job satisfaction score, the dataset ranged from a minimum of 74 to a maximum of 184. The mean total job satisfaction score was 136,04, indicating a moderate job satisfaction level among critical care nurses. The 95 % CI for the mean total score was detailed as (131,71, 140,37), underscoring a relatively precise estimation around the mean value. Delving into specific sub-dimensions, each dimension unveiled distinct ranges and mean values.

The dimension of salary spanned from a minimum of 4 to a maximum of 23. The mean salary was calculated at 13,98 with a standard deviation of 3,923. The 95 % CI for the mean salary was detailed as (12,58, 15,38), indicating a moderate degree of variability within reported salary figures. Similarly, the sub-dimensions of promotion, fringe benefits, contingent rewards, supervision, operation procedure, co-workers, nature of work, and communication each portrayed unique ranges, means, and standard deviations. For instance, promotion ranged from 5 to 23, with a mean of 13,61 and a standard deviation of 3,434. The 95 % CI for the mean promotion score was (12,14; 15,08).

Table 3. Descriptive statistics of job satisfaction and its 9 sub-dimensions

Job Satisfaction Sub-dimentions	Minimum	Maximum	Mean	Std. Deviation	95 % C.I.
Salary	4	23	13,98	3,923	(12,58, 15,38)
Promotion	5	23	13,61	3,434	(12,14, 15,08)
Fringe benefits	6	21	12,26	3,290	(11,05, 13,47)
Contingent rewards	4	24	14,22	3,943	(12,45, 16,00)
Supervision	7	24	16,65	4,152	(14,68, 18,62)
Operation procedure	4	24	14,42	4,813	(12,03, 16,81)
Co-worker	8	24	17,39	3,677	(16,02, 18,76)
Nature of work	8	22	16,20	3,929	(14,60, 17,80)
Communication	4	24	17,15	4,397	(15,50, 18,80)
Total Job satisfaction scale	74	184	136,04	18,666	(131,71, 140,37)

Table 4 presents an analysis of the association between demographic factors and job satisfaction levels among nurses. There was no significant association between age groups and job satisfaction levels, as indicated by the Chi-Square test (p = 0,574). While there was a notable difference in job satisfaction levels between male and female respondents, the p-value (0,094) suggested that this difference was not statistically significant at the conventional significance level of 0,05. Similarly, marital status did not appear to be significantly associated with job satisfaction levels (p = 0,669).

Interestingly, years of experience demonstrated a statistically significant association with job satisfaction levels (p = 0,034). Nurses with 11-15 years of experience exhibited the highest level of job satisfaction compared to other experience groups, suggesting a potential trend worth exploring further. No significant association was observed between job position and job satisfaction levels (p = 0,39), while there was a statistically significant association between nursing work units and job satisfaction levels (p = 0,027), suggesting that the unit in which nurses worked may influence their satisfaction levels. The analysis revealed a significant association between working hours and job satisfaction (p = 0,004). Nurses working 12-hour shifts exhibited significantly higher job satisfaction than those working office hours, indicating the potential impact of work schedules on satisfaction levels. Furthermore, educational level was not significantly associated with job satisfaction levels (p = 0,316).

The provided table presented a comprehensive analysis of caring behavior, examining both the total score and its four sub-dimensions within a sample size of n=112. Each dimension, including knowledge, human presence, respect, positive connectedness, and the overarching caring behavior total score, showed that the knowledge dimension exhibited scores ranging from 5 to 30, indicating a diverse array of responses captured within the sample. Similarly, the human presence dimension showcased a wide spectrum of scores, ranging from 8 to 48, underlining the variability in perceptions of human presence among participants. Central tendency measures, as represented by the mean values, offered insights into the typical level of each dimension within the sample. Notably, the mean values for knowledge, human presence, respect, positive connectedness, and the total caring behavior score stood at 26,16, 41,04, 30,92, 25,02, and 123,14, respectively. These averages provided a snapshot of the prevailing attitudes and perceptions regarding caring behavior within the studied population (table 5).

Furthermore, the standard deviation values elucidated the degree of dispersion of scores around the mean for each dimension. Ranging from 6,52 to 29,01, these standard deviations denoted varying levels of variability in responses within the sample. For instance, the total score for caring behavior exhibited a standard deviation of 29,01, indicating substantial dispersion around the mean score of 123,14, reflecting a high caring behavior score among the participants. Lastly, the 95 % confidence intervals furnished an estimate of the range within which the actual population mean lay with 95 % confidence. These intervals provided valuable insights into the precision of the sample mean estimates. For instance, the 95 % confidence interval for the caring behavior total score, spanning from 117,4289 to 128,8569, underscored the reliability of the sample mean as an estimator of the population mean, with a relatively narrow range of plausible values.

Table 4. Association between demographic data and job satisfaction levels

Job Satisfaction Associations		Satisfaction level						P-value
		Dissatisfied		Ambivalent		Satisfied		
		n	%	n	%	n	%	
Age	22-25	1	20	5	6,6	2	6,5	0,574
	26-35	1	20	44	57,9	16	51,6	
	36-45	3	60	21	27,6	11	35,5	
	46-55	0	0	6	7,9	2	6,5	
Sex	male	2	40	15	19,7	2	6,5	0,094
	female	3	60	61	80,3	29	93,5	
Marital	married	2	40	44	57,9	19	61,3	0,669
	single	3	60	32	42,1	12	38,7	
Years of experience	<1 year	2	40	4	5,3	1	3,2	0,034*
	1-5	0	0	14	18,4	2	6,5	
	6-10	0	0	17	22,4	12	38,7	
	11-15	3	60	27	35,5	10	32,3	
	16-20	0	0	8	10,5	5	16,1	
	>20	0	0	6	7,9	1	3,2	
Position	Charge Nurse	1	20	17	22,4	3	9,7	0,39
	Registered Nurse	4	80	50	65,8	26	83,9	
	Unit Manager	0	0	9	11,8	2	6,5	
Working unit	SICU	1	20	9	11,8	2	6,5	0,027*
	CCU	0	0	2	2,6	7	22,6	
	ER	1	20	32	42,1	4	12,9	
	AICU	2	40	19	25,0	9	29	
	CICU	0	0	4	5,3	1	3,2	
	NICU	1	20	4	5,3	3	9,7	
	PICU	0	0	6	7,9	5	16,1	
Working hours	12 Hours shift	5	100	35	46,1	23	74,2	0,004**
	Office hours	0	0	41	53,9	8	25,8	
Educational level	Diploma	0	0	21	27,6	9	29,0	0,316
	Bachelor	5	100	40	52,6	20	64,5	
	Postgraduate	0	0	13	17,1	2	6,5	
	Associate degree	0	0	2	2,6	0	0	

*Significant at 0,05
**Significant at 0,01

Table 5. Caring behavior total score and its 4 sub-dimensions (n=112)

Caring behavior sub-dimensions	Min	Max	Mean	Std. Deviation	95 % C.I.
Knowledge	5	30	26,16	6,52	(24,9492, 27,3722)
Human presence	8	48	41,04	10,23	(37,8805, 44,2087)
Respect	6	36	30,92	7,71	(28,3358, 33,5034)
Positive connectedness	5	30	25,02	6,33	(23,6044, 26,4314)
Caring behavior total score	24	144	123,14	29,01	(117,4289, 128,8569)

Table 6 represents the results of multiple linear regression. The overall model fit measures and specific coefficients for each predictor variable were reported. The analysis revealed that the model explained a statistically significant portion of the variance in the dependent variable, Caring Behavior, as indicated by the overall model test ($F = 2,873$, $p = 0,006$). Notably, the regression coefficients for one predictor, working hours,

demonstrated statistical significance in predicting Caring Behavior (B = -15,09, SE = 5,362, t = -2,815, p = 0,006). However, other predictors such as Age, Sex, Marital Status, years of experience, position, nursing unit, and educational level did not demonstrate statistically significant associations with Caring Behavior.

Table 6. Multiple linear regression model fit test

Model	R	R Square	Adjusted R Square	F	Sig.	
1	0,427[a]	0,182	0,119	2,873	0,006**	
Model	B	Std. Error	t	p-value	95 % Confidence Interval for B	
					Lower Bound	Upper Bound
(Constant)	87,861	26,453	3,321	0,001	35,398	140,32
Age	1,705	5,193	0,328	0,743	-8,595	12,004
Sex	7,812	7,228	1,081	0,282	-6,523	22,146
Marital	-1,02	5,716	-0,178	0,859	-12,36	10,317
Experience years	4,164	3,016	1,381	0,17	-1,817	10,145
Position	8,086	5,272	1,534	0,128	-2,371	18,543
Nursing unit	2,98	1,598	1,865	0,065	-0,189	6,149
Working hours	-15,09	5,362	-2,815	0,006**	-25,73	-4,459
Educational level	-0,49	4,299	-0,114	0,909	-9,017	8,037

[a]Dependent variable: caring behavior
**Significant at 0,01

Table 7 illustrates the Pearson correlation coefficients between the Caring Behavior Total Score and various dimensions of job satisfaction, including its sub-dimensions. There was a significant positive relationship between Caring Behavior and job satisfaction (r=0,256, p<0,01), as well as with promotion (r=0,271, p<0,01), supervision (r=0,353, p<0,01), co-worker relationships (r=0,464, p<0,01), and nature of work (r=0,569, p<0,01). Conversely, contingent rewards (r=−0,246, p<0,01) and operation procedures (r=−0,381, p<0,01) exhibited significant negative correlations with Caring Behavior. Interestingly, salary and fringe benefits showed weaker positive correlations with Caring Behavior (r=0,016 and r=0,133, respectively).

Table 7. The relationship between Caring behavior total score and (job satisfaction score and its 9 sub-dimensions)

Correlations	Caring behavior
Job satisfaction	0,256**
Salary	0,016
Promotion	0,271**
Fringe benefits	0,133
Contingent rewards	-0,246**
Supervision	0,353**
Operation procedure	-0,381**
Co-workers	0,464**
Nature of work	0,569**
Communication	0,121

**Correlation is significant at the 0,01 level (2-tailed)

Table 8 represents the multiple linear regression model for predicting caring behavior based on the nine job satisfaction sub-dimensions. The initial model yielded an R^2 value of 0,467, suggesting that approximately 46,7 % of the variance in caring behavior could be explained by the predictor variables. Moreover, the F value of 9,915 suggested a satisfactory fit of the model to the data.

Of particular interest, operational procedures, co-worker relationships, and the nature of work demonstrated statistically significant relationships (p<0,05) with caring behavior. The negative coefficient for operational procedures (B=−1,684, p=0,008) indicated that higher adherence to operational procedures was associated with lower levels of caring behavior. Conversely, positive coefficients for co-worker relationships (B=2,583, p=0,003) and the nature of work (B=2,277, p=0,012) indicated that positive perceptions in these areas were associated with higher levels of caring behavior.

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Table 8. Multiple linear regression model fit test

Model	R	R Square	Adjusted R Square	F	Sig.	
1	0,683[a]	0,467	0,420	9,915	<0,001**	
Model	B	Std. Error	t	p-value	95 % Confidence Interval for B	
					Lower Bound	Upper Bound
(Constant)	65,725	16,668	3,943	0,000	32,664	98,786
Salary	0,392	0,619	0,634	0,528	-0,836	1,621
Promotion	0,328	0,693	0,474	0,637	-1,047	1,704
Fring benefits	0,147	0,746	0,197	0,845	-1,332	1,625
Contingent rewards	-0,948	0,753	-1,259	0,211	-2,440	0,545
Supervision	-0,430	0,733	-0,586	0,559	-1,884	1,025
Operation procedure	-1,684	0,623	-2,704	0,008**	-2,919	-0,449
Co-worker	2,583	0,846	3,053	0,003**	0,905	4,261
Nature of work	2,277	0,886	2,571	0,012*	0,521	4,034
Communication	0,511	0,712	0,717	0,475	-0,902	1,924

[a]Dependent variable: caring behavior
*Significant at 0,05
**Significant at 0,01

DISCUSSION

The present study aimed to assess the extent of job satisfaction and caring behaviors among critical care nurses while exploring the correlation between these factors. Additionally, it sought to investigate the relationship between demographic variables and levels of job satisfaction and caring behaviors.

The current study revealed a spectrum of job satisfaction among critical care nurses, ranging from ambivalent to satisfied, indicative of a moderate level overall. These findings can be attributed to factors such as heightened workloads, stress levels, and dissatisfaction with compensation, fringe benefits, or incentives. Societal perceptions and the requirement of working 12-hour shifts also contribute to increased limitations and family challenges, particularly for married nurses. These findings are consistent with a systematic review by Dilig-Ruiz et al.[26] which reported an average satisfaction level of 56 % among critical care nurses. This reaffirms the moderate level of job satisfaction observed in the present study. Additionally, the review highlighted job stress and emotional exhaustion as negative influencers of job satisfaction.[27,28]

The findings align with the study of Alzailai et al.[26] which confirmed a moderate level of job satisfaction among critical care nurses in the Kingdom of Saudi Arabia. This is attributed to the high and occasionally moderate levels of physical and emotional stress encountered by nurses, along with various personal issues, family factors, and human resource regulations regarding salaries and incentives. Further research by Alzailai et al.[29] and Alasmari Douglas[30] delved into elements influencing job satisfaction, with Alzailai focusing on burnout and Alasmari emphasizing workload, professional support, and remuneration as critical factors.

In contrast, Alostaz[31] and Mari et al.[32] identified elevated levels of job satisfaction among critical care nurses. Alostaz particularly noted a significant correlation between age and satisfaction. However, Mari identified specific areas of discontent, particularly regarding communication, compensation, and supervision. These studies collectively suggest that critical care nurses in Saudi Arabia generally express high levels of job satisfaction despite specific areas of concern that warrant attention.

The present study identified a significant correlation between critical care nurses' sociodemographic factors, such as years of experience, working units, and working hours system, and their level of job satisfaction. Experienced nurses typically demonstrate greater self-assurance and expertise when faced with critical situations, potentially leading to a heightened sense of achievement and fulfillment in their profession. Moreover, seasoned nurses may have developed more effective coping strategies to navigate the demanding environment of critical care, thus contributing to their overall well-being and job satisfaction to some extent.

The specific dynamics within a work unit can also impact job satisfaction. A supportive and collaborative workplace often serves as a strong motivator, whereas a dysfunctional team environment may lead to burnout and dissatisfaction among nurses. Additionally, the prevalence of shift working hours and long shifts in critical care settings is customary. Having the ability to anticipate and plan work schedules and some degree of influence over scheduling preferences can enhance work-life balance and potentially increase overall satisfaction among nurses.

Numerous factors identified in the literature influence nurses' job satisfaction. Kurt Demirbag[33] highlighted age, education, marital status, professional maturity, work unit, and working hours as significant influencers.

Morsy Sabra[34] emphasized the importance of work-life quality, particularly the role of family support, working hours, and compensation. Tzenalis et al.[35] found that the work environment and external job characteristics significantly impact job satisfaction, with older and more experienced nurses tending to report lower satisfaction levels. Ferreira et al.[36] and da Silva Potra[37] underscored the influence of age, academic degree, length of service, and remuneration, noting that younger, less educated, and lower-paid nurses often report lower satisfaction levels. Da Silva and Potra also observed the impact of family circumstances and workload on job satisfaction. These findings collectively suggest that various elements, including personal, professional, and organizational aspects such as work unit and working hours, significantly influenced nurses' job satisfaction.

The present study revealed that critical care nurses consistently exhibited a high degree of caring behaviors, as evidenced by a mean score of 123,14, with a range from 24 to 144. The impact of these caring behaviors on patient safety and the efficacy of therapeutic care decisions is globally significant. Implementing compassionate behaviors serves as a primary catalyst for enhancing healthcare quality, reducing care expenses, and increasing patient satisfaction levels.[38]

The current study investigated four dimensions or aspects of caregiving behaviors. The first aspect concerns the knowledge and skills of nurses, encompassing their professional expertise, proficiency in clinical care processes, management of medications and equipment, and establishment of mutual trust. The second aspect focuses on ensuring human presence, which involves establishing effective contact with the patient, attentively addressing their needs, and encouraging them to communicate and provide self-reports. The third component involves respecting the deference of others, especially in healthcare contexts. This includes displaying empathy towards patients, allowing them to voice their concerns, addressing their inquiries, safeguarding their privacy and confidentiality, and attending to their explicit or implicit needs. Finally, the fourth dimension of positive connectedness involves educating patients, demonstrating patience with their suffering, assisting in their recovery, and actively participating in care planning processes. All four dimensions exhibited a moderate to high level of healthcare behaviors among critical care nurses in the present study.

Multiple studies have demonstrated a high prevalence of caring behaviors among critical care nurses, as confirmed by studies conducted by Ashagere et al.[2], Ahmed et al.[39], and Shalaby et al.[40]. In contrast, a study assessing patients' perceptions of healthcare behaviors indicated deficiencies, with patients expressing doubts regarding the healthcare behaviors delivered by nurses.[8] Although previous studies have presented conflicting findings about the prevalence of caring behaviors, a recent research study categorized participant nurses into two groups: one with a high level of caring behaviors and the other with a low level.[39]

The current study revealed a significant negative linear correlation between the caring behaviors of critical care nurses and their working hours, as supported by regression analysis (B=-15,09, P=0,006). The field of critical care is marked by demanding physical exertion and emotional strain. Nurses working extended hours are more susceptible to burnout, characterized by emotional tiredness, depersonalization towards patients, and reduced sense of achievement. Consequently, they may struggle to maintain the emotional resources necessary for providing compassionate care.[41] Prolonged work hours can lead to both physical and mental exhaustion, impairing nurses' ability to address patients' emotional needs beyond medical assistance. Moreover, longer shifts may limit nurses' opportunities to engage in caring behaviors, such as spending quality time with patients or offering emotional support, as they prioritize completing critical medical procedures to ensure patient safety within time constraints.[42]

The study found no statistically significant correlation between nurses' caring behavior and other sociodemographic features of the participants. However, a separate study examining factors influencing nurses' caring behavior revealed a positive association with education level. Higher education levels were linked to enhanced care behaviors, particularly evidence-based practices, as educated nurses are better equipped to acquire the knowledge and skills necessary for exceptional healthcare performance. They prioritize adherence to ethical standards, safeguarding patients' rights and safety, and promptly addressing patients' needs.[40]

In contrast to earlier investigations, the present study found no correlation between gender and job satisfaction or caring behaviors. Oliveira et al.[43] reported higher job satisfaction among males compared to females, consistent with previous findings in Saudi literature. However, a separate global study found that female nurses reported greater job satisfaction levels than males.[44]

The study identified a strong positive association between job satisfaction and caring behaviors among critical care nurses. Additionally, a notable favorable link was found between nurses' care behaviors and various aspects of job satisfaction, such as promotion, supervision, co-workers, and nature of work. Conversely, a strong negative association was observed between caring behavior and job satisfaction subscales related to contingent rewards and operation procedures.

The association between job satisfaction and enhanced caring behaviors among nurses is significant. High caring behaviors strengthen the care environment and contribute to nurses' job satisfaction.[17] A study conducted in Malang, Indonesia, confirmed that job satisfaction plays a role in displaying caring behavior among nurses. The research demonstrated that increased pay and rewards significantly improved care quality,

enhanced compassionate and caring behaviors among nurses, and elevated job satisfaction levels.[17] Oluma Abadiga[18] noted that nurses experiencing job satisfaction in critical care settings tend to exhibit elevated levels of caring behaviors.

Furthermore, De Los Santos, Labrague[7] highlighted job satisfaction as a driving force for nurses to deliver exceptional nursing care. Rizqana et al.[8] emphasized the correlation between job satisfaction and nurses' caring behavior, showing its direct impact on the overall quality of healthcare provided. However, the study revealed that 37 % of nurses remained dissatisfied, attributing this dissatisfaction to a perceived lack of appreciation, recognition, and rewards from their respective work institutions.[8]

Multiple studies have identified a significant association between nurses' caring behaviors and various aspects of job satisfaction. Azizi-fini et al.[45] and Putra et al.[17] found a direct correlation between these characteristics. Putra specifically highlighted supervision, contingent rewards, co-worker relationships, and the nature of work as dimensions of job satisfaction positively associated with caring behavior. Alikari et al.[3] further supported this association, noting that the time spent with patients was a reliable indicator of nurses' capacity to demonstrate caring behaviors. Rayani et al.[46] uncovered a notable correlation between nurse caring and compassion satisfaction, nurse job satisfaction subscales, stress, and burnout. These results suggest that increasing nurses' job satisfaction can lead to enhanced caring behaviors, ultimately improving patient care.

CONCLUSIONS

The study examined job satisfaction and caring behaviors among critical care nurses. Job satisfaction is of great importance in nursing care facilities that suffer from a shortage of nurses. It found that job satisfaction levels ranged from ambivalent to satisfied, with factors like high workloads and dissatisfaction with compensation contributing to this variation. Experienced nurses showed higher job satisfaction due to their expertise and coping strategies. Supportive work environments positively influenced job satisfaction and shift working hours impacted work-life balance and satisfaction.

Critical care nurses consistently exhibited high levels of caring behaviors, which improved healthcare quality and patient satisfaction. Factors like knowledge, human presence, respect, and positive connectedness influenced these caring behaviors. Working long hours negatively impacted caring behaviors due to burnout. There was a positive association between job satisfaction and caring behaviors, indicating that a higher level of caring behavior was associated with better nurses' job satisfaction. Overall, the study highlighted the importance of addressing factors affecting job satisfaction and promoting caring behaviors in critical care nursing.

Recommendations

It is recommended that high workloads and dissatisfaction among critical care nurses be addressed with compensation, fringe benefits, and incentives. Strategies such as workload management, fair compensation packages, and recognition programs can help improve job satisfaction among critical care nurses. Creating a supportive and collaborative work environment is crucial for enhancing job satisfaction. Promoting teamwork, effective communication, and opportunities for professional growth can contribute to a positive work environment and increase job satisfaction among critical care nurses.

Given the prevalence of shift working hours in critical care settings, it is essential to provide nurses with the ability to anticipate and plan work schedules to the extent possible. Providing some degree of flexibility and influence over scheduling preferences can help improve work-life balance and overall job satisfaction. Additionally, it is important to review job satisfaction aspects related to contingent rewards and operation procedures, identify improvement areas, and consider implementing changes that align with nurses' needs and expectations.

Measures should be implemented to prevent burnout among critical care nurses, as it negatively impacts their ability to provide compassionate care, such as implementing policies to limit working hours, providing resources for stress management and self-care, and fostering a culture that promotes work-life balance and emotional well-being. Moreover, continuous professional development and enhancing critical care nurses' knowledge and skills can boost confidence, job satisfaction, and quality healthcare.

It is also recommended that training and support be provided to help nurses develop and maintain compassionate care behaviors that show the value of caring behaviors in critical care nursing. The study emphasized the positive impact of nurses' caring behaviors on patient safety, therapeutic care decisions, and overall healthcare outcomes.

Limitations

This study has several limitations. Firstly, it utilizes a survey and adopts a cross-sectional design, which may restrict the depth of insights. Additionally, the relatively small sample size, drawn from a single hospital in

Saudi Arabia, poses a potential threat to the generalizability of the findings.

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CONFLICT OF INTEREST

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