ORIGINAL RESEARCH ARTICLE

The Relationship Between Emotional Intelligence, Clinical Decision-Making, and Caregiving Behaviors of Nurses Working in Intensive Care Units of Urmia Hospitals in 2024

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Abstract

Background Emotional intelligence, decisive responses, and the ability to make appropriate decisions in critical situations play a significant role in shaping nurses' caring behaviors. Research has highlighted the positive impact of emotional intelligence on clinical decision-making; however, some studies have reported no significant association between emotional intelligence and caring behaviors. This study aimed to investigate the relationship between emotional intelligence, clinical decision-making, and caring behaviors among nurses working in the intensive care units (ICUs) of hospitals in Urmia.

Methods This descriptive-correlational study was conducted among nurses working in ICUs in 2024. A total of 220 nurses were selected using quota sampling based on predefined inclusion criteria. Data were collected using questionnaires on demographic characteristics, Schering's Emotional Intelligence Scale, Lauri's Clinical Decision-Making Questionnaire, and the Caring Dimensions Index (CDI-25). Data analysis was performed using descriptive and inferential statistics in SPSS version 16.0. The level of statistical significance was set at $p < 0.05$.

Results The mean score of emotional intelligence was 113.14 ± 9.87, clinical decision-making was 91.46 ± 10.28, and caring behaviors were 106.36 ± 10.80. The Pearson correlation coefficient revealed a significant positive relationship between emotional intelligence and clinical decision-making ($r = 0.249$, $p = 0.001$) as well as between emotional intelligence and caring behaviors ($r = 0.416$, $p < 0.001$). Furthermore, clinical decision-making demonstrated a significant positive correlation with caring behaviors ($r = 0.653$, $p < 0.001$).

Conclusion Emotional intelligence is significantly correlated with clinical decision-making and caring behaviors. Therefore, continuing education programs should emphasize the development of emotional intelligence, and nurses with higher levels of emotional intelligence should be given priority for positions in ICUs.

Keywords Clinical Decision-Making, Emotional Intelligence, Nursing Care, Intensive Care Units, Nurses

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1 Introduction

Nurses constitute the largest workforce in the healthcare system, and nursing professionals play a key role in maintaining health in communities.[1] Among healthcare systems, Intensive Care Units (ICUs) are among the most critical hospital departments, where nurses' caring behaviors are of particular importance.[2] ICU nurses constantly face critical situations and must care for patients who are in acute and life-threatening conditions, yet still have the potential for recovery.[3] Accordingly, the care delivered and caring behaviors in these units are key factors influencing patient outcomes. Care is also a complex, multidimensional concept and is defined as the foundation of nursing practice in clinical settings.[4]

Nurses' caring behaviors can be influenced by various factors, such as high workload, staffing issues, and managerial problems.[5] Environmental conditions, job satisfaction,[6] and occupational stress.[7] One crucial component of nurses' caring behaviors in specialized care environments like the ICU is their ability to provide decisive responses and make appropriate decisions in critical situations, known as clinical decision-making.[8] Clinical decision-making involves collecting both subjective and objective information regarding a patient's condition, analyzing this data, and choosing the most appropriate course of action to attain the desired results. It is an integral part of nursing practice.[9] Due to the crucial importance of clinical decision-making in ICUs, nurses require knowledge, skills, experience, and the right attitude to perform it effectively.[10, 11] Consequently, efficient, advanced, and reliable nursing care depends on skills like problem-solving, evidence-based practice, and clinical decision-making competence.[11, 12]

Appropriate clinical decision-making skills enhance care quality, reduce medical errors, lower healthcare costs through effective resource utilization, and ultimately improve patient and nurse satisfaction while increasing nurses' motivation.[13] Clinical decision-making represents the intersection of theoretical and practical knowledge; therefore, in complex and high-stress situations, decisions should be based not only on scientific data but also on a proper understanding of patients' and colleagues' emotions. Thus, effective emotional regulation—or emotional intelligence—can be beneficial in this context.[14] Emotional intelligence is an essential element of nursing at all stages of patient care and a critical skill for improving nursing service quality. Research indicates that emotional intelligence plays a significant role in enhancing nurses' communication skills.[15] Some literature reviews suggest that emotional intelligence plays an effective role in this area and can assist nurses in making appropriate clinical decisions.[16, 17] However, prolonged exposure to such crises may lead to decreased emotional intelligence among nurses.[18, 19] It has been shown that low emotional intelligence is associated with higher work burnout.[20] and stress.[21, 22] Nurses with higher emotional intelligence are more compassionate, empathetic, and adaptable, can manage their own and others' emotions, and are more likely to provide better care for both themselves and their patients.[23, 24] In contrast to these findings, Chao et al. (2016) and Bamberger et al. (2017) reported no association between emotional intelligence and the caring behaviors of nurses.[25, 26] Thus, no consensus exists in the literature regarding the relationship between emotional intelligence and nurses' caring behaviors.

Considering the significance of emotional intelligence in nursing practice and the conflicting results of studies on its association with nurses' caring behaviors, this study aimed to determine the relationship between nurses' emotional intelligence and their clinical decision-making and caring behaviors in the ICUs of university hospitals affiliated with Urmia University of Medical Sciences in 2024.

2 Methods

This cross-sectional correlational study was conducted on all nurses working in the ICUs of university hospitals affiliated with Urmia University of Medical Sciences in 2024. Using a 95% confidence interval, 80% power, and an effect size of 0.19, the required sample size was estimated at 220 participants. Inclusion criteria were voluntary informed consent to participate and a minimum of one year of ICU experience in university hospitals. Data collection instruments included: a demographic questionnaire (age, gender, marital status, education level, work shift, employment status, and work experience), Schering's Emotional Intelligence Questionnaire, Lauri et al.'s Clinical Decision-Making Questionnaire (2001)[28], and the Caring Dimensions Inventory-25 (CDI-25).

2-1 Schering's Emotional Intelligence Questionnaire:

The original version of this questionnaire was developed by Schering in 1999. The Persian adaptation consists of 33 items across five subscales: self-motivation (7 items), self-awareness (8 items), self-regulation (7 items), social awareness (6 items), and social skills (5 items). Responses are rated on a 5-point Likert scale ranging from 1 (very low) to 5 (very high). Scoring is interpreted as follows:

a. A score between 33 and 66 indicates a low level of emotional intelligence.
b. A score between 66 and 100 indicates an average level.
c. A score above 100 indicates a high level of emotional intelligence.

Rostami et al. (2016) reported a Cronbach's alpha of 0.79, indicating good internal consistency and reliability

of the questionnaire. Additionally, the instrument has demonstrated satisfactory validity.[27]

2-2 Lauri et al.'s Clinical Decision-Making Questionnaire (2001):

This questionnaire contains 24 items designed to assess clinical decision-making abilities. Each item is scored on a 5-point Likert scale, with total scores ranging from 24 to 120. A score below 67 reflects systematic analytical decision-making, a score between 68 and 78 reflects intuitive-analytical decision-making, and a score above 78 reflects interpretive-intuitive decision-making.[28]

In a study conducted by Karimi Noghondar et al. (2012), face and content validity of the questionnaire were confirmed by a panel of university faculty members. Cronbach's alpha for internal consistency was reported as 0.80, indicating acceptable reliability.[29]

2-3 Caring Dimensions Inventory-25 (CDI-25):

The CDI-25 includes 25 items that assess nurses' caregiving behaviors across five domains: physical-technical behaviors (11 items), inappropriate behaviors (2 items), psychosocial behaviors (10 items), professional behaviors (1 item), and unnecessary behaviors (1 item). Items are rated on a 5-point Likert scale. Notably, items 3 and 16 are reverse-scored. The total score ranges from 25 to 125, with higher scores indicating more positive caregiving behaviors.[30]

The tool's face and content validity were confirmed by Watson et al. (1997) in a sample of 1430 nurses in Scotland. Internal consistency was strong, with a Cronbach's alpha of 0.91.[31] In a separate study by Salimi et al. (2012), construct validity was confirmed using factor analysis, and internal consistency was calculated as 0.83. [30]

In the present study, the validity established in prior research was adopted, while reliability was reassessed. Using a pilot sample of 20 nurses, Cronbach's alpha coefficients were calculated as follows:

- 0.89 for the Emotional Intelligence Questionnaire
- 0.90 for the Clinical Decision-Making Questionnaire
- 0.82 for the Caring Behavior Inventory

Following approval from the Research Council of Urmia University of Medical Sciences and ethical clearance from the Research Ethics Committee (IR.UMSU.REC.1403.180), the researcher introduced himself to the relevant units. Lists of nurses were obtained from the nursing offices and unit managers to identify eligible participants. Based on hospital-specific staffing and inclusion criteria, 220 nurses were selected.

To ensure ethical standards, questionnaires were distributed anonymously, and participants were assured that their responses would remain confidential. Data collection took place across all work shifts (morning, afternoon, and night), including weekends and holidays, to ensure sample representativeness and generalizability. Nurses completed the questionnaires as self-reports, usually during their shifts. In cases of fatigue, participants were allowed to complete the questionnaires at home and return them later. Questionnaires had to be completed fully without omissions. Researchers were available in person or by phone to assist participants with any questions during the process.

Data analysis was conducted using SPSS software version 19. To evaluate the hypotheses, various statistical methods were employed, including independent t-tests for comparing two groups, one-way ANOVA for comparisons among more than two groups, and Pearson's correlation coefficient to examine the strength and direction of relationships between variables. The Shapiro–Wilk test was applied to assess the normality of the data distribution. Since the data followed a normal distribution, parametric tests were used. A significance level of $p < 0.05$ was considered statistically significant in all analyses.

3 Results

The present study included 220 ICU nurses, all of whom provided analyzable responses. The mean age of participants was 34.32 ± 7.05 years. The majority were female (n = 161; 72.2%), married (n = 135; 60.5%), held a bachelor's degree (n = 189; 84.8%), and were permanently employed (n = 141; 63.2%) (Table 1).

Results indicated the highest mean score among emotional intelligence dimensions was for self-awareness (3.71 ± 0.37), while the lowest was for self-regulation (3.13 ± 0.49). The total emotional intelligence score was considered high (113.14 ± 9.87). Clinical decision-making had a mean of 91.46 ± 10.28 (indicating a high level and an interpretive-intuitive style). Among caring behaviors, unnecessary behaviors showed the highest mean score (4.73 ± 0.66), while psychosocial behaviors had the lowest (4.04 ± 0.41). The total caring behavior score was also high (106.36 ± 10.80) (Table 2).

The Pearson correlation analysis revealed significant positive relationships between emotional intelligence (and all its dimensions) and clinical decision-making among ICU nurses ($r = 0.249$, $p < 0.001$) (Table 3).

The Pearson correlation analysis revealed that emotional intelligence and all its dimensions exhibited significant positive correlations with caring behaviors and their respective dimensions among ICU nurses working in Urmia teaching hospitals ($r = 0.416$, $p < 0.001$), except for two cases: no significant correlation was observed between professional behavior and self-regulation, and between unnecessary behaviors and social skills (Table 4).

Table 1 Frequency distribution of demographic characteristics among ICU nurses in Urmia teaching hospitals

Variable	Category	Mean	Standard Deviation
Age	-	34.32	7.05
Work experience	-	10.93	7.01
Variable	**Category**	**Frequency**	**Percent (%)**
Gender	Male	62	27.8
	Female	161	72.2
Marital status	Single	88	39.5
	Married	135	60.5
Education	Associate	7	3.1
	Bachelor	189	84.8
	Master	25	11.2
	PhD	2	0.9
Work shift	Morning	39	17.5
	Evening	2	0.9
	Rotating	182	81.6
Employment	Contractual	25	11.2
	Permanent	141	63.2
	Temporary	36	16.1
	Project-based	21	9.4

Table 2 Distribution of emotional intelligence, clinical decision-making, caring behaviors and their dimensions among ICU nurses

Dimension	Items	Min	Max	Mean±SD	Weighted Mean±SD
Emotional Intelligence				113.14±9.87	3.43±0.29
Self-motivation	7	16	29	23.81±2.37	3.40±0.33
Self-awareness	8	18	37	29.70±3.03	3.71±0.37
Self-regulation	7	12	35	21.94±3.43	3.13±0.49
Social awareness	6	12	27	20.84±2.56	3.47±0.42
Social skills	5	9	23	16.82±2.38	3.36±0.47
Total Emotional Intelligence	33	86	139	113.14±9.87	3.43±0.29
Clinical Decision-Making	24	41	120	91.46±10.28	3.81±0.42
Physical-technical	11	28	55	47.29±5.29	4.29±0.48
Inappropriate behaviors	2	2	10	9.30±1.25	4.65±0.62
Psychosocial behaviors	10	24	50	40.42±4.16	4.04±0.41
Professional behaviors	1	1	5	4.60±0.63	4.60±0.63
Unnecessary behaviors	1	1	5	4.73±0.66	4.73±0.66
Caring Behaviors	33	86	139	106.36±10.80	4.25±0.43

Table 3 Correlation between emotional intelligence dimensions and clinical decision-making

	Emotional Intelligence					
	Self-Motivation	Self-Awareness	Self-Regulation	Social Awareness	Social Skills	Emotional Intelligence
Clinical Decision-Making	r = 0.781	r = 0.746	r = 0.800	r = 0.678	r = 0.535	r = 0.249
	p < 0.001	p < 0.001	p < 0.001	p < 0.001	p < 0.001	p < 0.001

p = p value, r= Pearson's

Table 4 Correlations between emotional intelligence dimensions and caring behavior dimensions among ICU nurses in Urmia

Dimension	Emotional Intelligence	Social Skills	Social Awareness	Self-Regulation	Self-Awareness	Self-Motivation
Physical-Technical Behaviors	r=0.391	r=0.191	r=0.340	r=0.234	r=0.281	r=0.368
	p<0.001	p<0.001	p<0.001	p<0.001	p<0.001	p<0.001
Inappropriate Behaviors	r=0.365	r=0.195	r=0.318	r=0.160	r=0.299	r=0.369
	p<0.001	p<0.001	p<0.001	p=0.015	p<0.001	p<0.001
Psychosocial Behaviors	r=0.372	r=0.158	r=0.336	r=0.246	r=0.239	r=0.362
	p<0.001	p=0.020	p<0.001	p<0.001	p<0.001	p<0.001
Professional Behaviors	r=0.283	r=0.179	r=0.260	r=0.118	r=0.243	r=0.234
	p<0.001	p=0.010	p<0.001	p=0.079	p<0.001	p<0.001
Unnecessary Behaviors	r=0.359	r=0.116	r=0.282	r=0.256	r=0.292	r=0.329
	p<0.001	p=0.084	p<0.001	p<0.001	p<0.001	p<0.001
Total Caring Behaviors	r=0.416	r=0.195	r=0.365	r=0.251	r=0.297	r=0.397
	p<0.001	p<0.001	p<0.001	p<0.001	p<0.001	p<0.001

p = p value, r= Pearson's

4 Discussion

This study was conducted to determine the relationship between emotional intelligence and clinical decision-making and caregiving behaviors among nurses working in the intensive care units of hospitals affiliated with Urmia University of Medical Sciences. The results indicated that emotional intelligence and all its dimensions had a significant positive correlation with clinical decision-making among ICU nurses working in educational and therapeutic centers in Urmia. This suggests that the higher the emotional intelligence of ICU nurses, the more actively they participate in clinical decision-making, and consequently, clinical decision-making becomes more effective across all dimensions.

Consistent with the findings of the present study, Al Btoush et al. (2025) conducted a study titled "The relationship between emotional intelligence, self-efficacy, and clinical decision-making among critical care nurses in Jordan," which found a significant and direct relationship between emotional intelligence and clinical decision-making in ICU nurses.[32] Jawabreh (2024), in Palestine, conducted a study titled "The relationship between emotional intelligence and clinical decision making among nursing students," which also revealed a strong positive association between these variables. [33] Additionally, the study by Masoudi and Alavi titled "Relationship between nurses' emotional intelligence with clinical decision-making" confirmed this direct and significant relationship.[14] No studies were found that reported either no correlation or an inverse relationship between emotional intelligence and clinical decision-making, suggesting that emotional intelligence can serve as a predictive factor for clinical decision-making and should be considered in relevant planning.

The results further demonstrated that emotional intelligence and all its dimensions had significant positive correlations with caring behaviors and their dimensions among ICU nurses. This indicates that higher emotional intelligence in ICU nurses corresponds to better caring behaviors, including more appropriate physical, emotional, spiritual, social, and psychological care, which enhances patient safety and contributes to faster recovery. [34]

Supporting our results, Taylan et al. (2021) conducted a study in Turkey titled "Caring behaviors, moral sensitivity, and emotional intelligence in intensive care nurses: A descriptive study," which identified emotional intelligence along with autonomy, beneficence, and moral sensitivity subscales as strong predictors of caring behaviors.[35] Kaur et al. (2013) developed a model to predict caring behaviors among nurses incorporating spiritual intelligence, emotional intelligence, psychological ownership, and burnout, concluding that emotional intelligence enhances psychological ownership and caring behaviors while reducing burnout.[36] Rego et al. (2010) demonstrated that emotional intelligence components including self-awareness, self-regulation, empathy, and social skills are significantly correlated with nurses' caring behaviors. Their results also highlighted emotional intelligence as a crucial factor in nursing care quality. [37] Alonazi (2020) found that nurses consistently reported emotional intelligence's significant impact on job performance during the COVID-19 crisis in Saudi Arabia.[38]

One notable limitation of this study was the use of self-report measures, which may have introduced social desirability bias, as participants might have been inclined to provide favorable responses. While we emphasized

the importance of honest responses to all participants, the findings ultimately rely on nurses' self-reported data.

5 Conclusion

The findings of this study indicate that the mean scores of emotional intelligence, clinical decision-making, and caring behaviors among participants were at high levels. While these favorable results represent a valuable asset for the organization, maintaining and further improving these conditions require dedicated efforts and strategic planning. Given the critical importance of these factors in nursing practice, healthcare systems should leverage their benefits to enhance care quality and achieve professional objectives. Other hospitals and medical centers may also benefit from the outcomes and results of this study.

Furthermore, considering the significant positive correlation between emotional intelligence and both clinical decision-making and caring behaviors, it is recommended that healthcare organizations implement measures to foster emotional intelligence among nurses. In addition to existing training and intervention programs aimed at improving clinical decision-making and caring behaviors, continuing education initiatives should incorporate strategies designed to enhance emotional intelligence. Moreover, prioritizing nurses with higher emotional intelligence for ICU placements may contribute significantly to better patient outcomes.

Declarations

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Authors' Contributions
In this study, all authors contributed to every stage, including initial conceptualization, study design, data collection, and manuscript drafting. All authors have carefully reviewed and approved the final version of the manuscript and are in full agreement regarding its content.

Availability of Data and Materials
The datasets generated and/or analyzed during the current study are not publicly available due to privacy and confidentiality agreements with the participants but are available from the corresponding author upon reasonable request.

Conflict of Interest
The authors declare that they have no conflicts of interest regarding the publication of this article.

Consent for Publication
All authors have read and approved the final manuscript and have provided their consent for publication.

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Ethical Considerations
The study was approved by the Ethics Committee of Urmia University of Medical Sciences (Code: IR.UMSU.REC.1403.180). Prior to participation, researchers fully explained the study objectives to all participants and emphasized that participation was entirely voluntary. All participant information was maintained with strict confidentiality throughout the research process.

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