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Emotional intelligence and caring behavior among nurses at Dr. M. Djamil General Hospital Padang

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ABSTRACT

Emotional intelligence (EI) is crucial in nursing education to develop competencies such as communication, decision-making, and empathy. In Indonesia, 70.5% of patients perceived hospital staff as lacking empathy, and 61.4% felt consultation times were shorter compared to those abroad. The purpose of this study was to describe nurses' caring behaviors and examine their relationship with emotional intelligence. The research method used was a cross-sectional analytic study conducted on 119 nurses from various hospital units. Emotional intelligence and caring behaviors were measured using a validated questionnaire. Data were analyzed using descriptive and bivariate statistics. The results showed that most respondents were aged ≥30 years (88.2%), female (88.2%), and had a Bachelor's degree in Nursing (62.2%). More than half had high emotional intelligence (56.3%), and most demonstrated good caring behaviors (95.8%). Age, gender, and education did not significantly influence emotional intelligence or caring behaviors ($p > 0.05$). Emotional intelligence showed a strong and significant relationship with caring behavior (OR = 7.412; 95% CI: 3.292–16.690; $p < 0.001$), with a moderate positive correlation ($R = 0.518$). Emotional intelligence explained 26.8% of the variance in caring behavior ($R^2 = 0.268$). Emotional intelligence significantly influenced nurses' caring behavior. Nurses with higher emotional intelligence tended to provide more empathetic and compassionate care, thereby improving patient satisfaction and service quality.

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INTRODUCTION

Nurses are required to demonstrate social sensitivity and professional competence, including intellectual, technical, and interpersonal skills expressed through caring and compassionate attitudes. Empathy forms the foundation of nursing practice, as it helps build trust, strengthen nurse patient relationships, and enhance care outcomes such as treatment adherence and patient satisfaction (Abou Hashish, 2025).

Caring behavior also supports nurses' professional well-being; however, ethical challenges have emerged due to advances in technology and the complexity of healthcare systems (Nazari *et al*., 2025). A lack of empathy often leads to patient dissatisfaction, while strong caring attitudes improve perceived service quality (Wong, 2025).

Emotional intelligence (EI) which includes self-control, motivation, empathy, and social awareness is closely related to the effectiveness of nursing care (Dugué et al., 2021; Nazrin, 2024). It helps nurses manage emotions, resolve conflicts, and maintain meaningful relationships with patients. EI and authentic leadership have been recognized as critical for effective healthcare management and professional success, particularly in high-stress environments (Aslan et al., 2025; Musio et al., 2024). In nursing education, EI contributes to resilience, communication, and decision-making, while cultural sensitivity supports patient-centered care (Aydin Er et al., 2025; Silva, 2025).

Based on a customer satisfaction survey conducted by the Ministry of Communication and Informatics (Kominfo) at several hospitals in Indonesia, the patient satisfaction rate at Dr. M. Djamil Padang General Hospital (RSUP) was the lowest, at only 30%. This finding indicates a significant gap in the quality of healthcare services, particularly in the areas of interpersonal interaction and emotional management in nursing practice, which play a crucial role in shaping patient experience and satisfaction.

RSUP Dr. M. Djamil Padang is a first-level referral hospital under the auspices of the Indonesian Ministry of Health and is located in West Sumatra Province. This hospital serves as a vertical referral center for the central Sumatra region, including the Riau Islands, Riau, Kerinci, and Palembang. In daily care, nurses use Indonesian as their primary language, but are influenced by the Minangkabau dialect and intonation, which tends to be assertive. In several patient surveys, these communication characteristics are often perceived as unfriendly or lacking empathy, thus influencing assessments of nurses' caring attitudes.

Additionally, national data show that many Indonesians continue to seek medical treatment abroad in Malaysia, Singapore, Thailand, or China due to the perception that domestic healthcare quality remains below expectations. Reports estimate that each year, approximately 1–2 million Indonesians receive treatment overseas, resulting in an annual foreign exchange loss of up to IDR 163 trillion (≈ US$10 billion) (Jakarta Post, 2025).

Surveys reported that 70.5% of patients perceived low empathy from hospital staff, and 61.4% felt consultation times were shorter compared to foreign hospitals (Dewi, 2025). Similarly, Studies in Batam and Banten similarly found deficiencies in caring behavior and communication among nurses, shaped by cultural norms (Kosat et al., 2022; Putra Hidayat et al., 2023; Rohayati et al., 2024).

The originality of this research is reflected in its investigation of the association between emotional intelligence and nurses' caring behavior within hospital settings characterized by low levels of patient satisfaction, an area that remains underexplored in the Indonesian healthcare context. In contrast to earlier studies that predominantly focused on emotional intelligence among nursing students or managerial personnel, this study highlights its direct implementation in routine clinical practice. By examining the influence of emotional intelligence on nurses' caring behaviors in everyday patient interactions, the study offers novel perspectives on effective approaches to strengthening nursing service quality. The results are expected to contribute to hospital management policies aimed at improving healthcare services and decreasing the tendency of patients to seek treatment overseas.

A gap in previous research lies in the lack of integration of nurses' emotional intelligence studies with the empirical context of low patient satisfaction in national referral hospitals, particularly in Indonesia. Most previous studies have focused on emotional intelligence in nursing students, managerial nurses, or healthcare leadership in general, without directly linking it to the realities of daily clinical practice in large hospitals that handle complex cases and high workloads. Furthermore, previous research has tended to ignore local cultural and communication context

factors, such as the influence of regional dialects and intonation on nurses' perceptions of empathy and caring, and has not made low patient satisfaction a primary problematic condition for in-depth analysis. As a result, the relationship between nurses' emotional intelligence, caring behavior, and patient experiences in the national referral healthcare system remains under-described. Conceptually, this study contributes to strengthening caring theory by positioning emotional intelligence as an operational psychosocial foundation in clinical nursing practice.

RESEARCH METHOD

This study employed a quantitative methodology using an analytic observational design with a cross-sectional approach. The primary objective was to assess the relationship between nurses' emotional intelligence and their caring behavior in the delivery of nursing care. The research was conducted at Dr. M. Djamil Padang General Hospital, a national referral hospital in Central Sumatra that provides both specialist and subspecialist healthcare services.

The data collection instrument consisted of three main components. The first section gathered demographic information, including gender, employment status, and job role. The second section assessed emotional intelligence using the Schutte Emotional Intelligence Questionnaire (SEIQ) (Palmer *et al*., 2009), which was adapted into 33 statements representing four domains: emotional perception, self-emotional regulation, recognition of others' emotions, and emotional utilization. Responses were recorded on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The third section measured caring behavior using the Caring Behaviors Inventory (CBI-24) developed by Wolf et al., (1981) and grounded in Jean Watson's Human Caring Theory. This 24-item scale, also rated on a five-point Likert format, has demonstrated excellent internal reliability ($\alpha = 0.96$), with higher scores reflecting stronger caring behaviors.

Both the SEIQ and CBI-24 instruments have been previously validated in earlier research (Palmer *et al*., 2009) (Wolf et al., 1981). In the present study, construct validity was reassessed through item analysis using Pearson's correlation coefficients. Items with corrected item–total correlation values exceeding 0.30 were deemed acceptable, in line with established psychometric guidelines in behavioral research (Lappalainen et al., 2021; Wang et al., 2021). (Lappalainen et al., 2021; Wang et al., 2021). All questionnaire items satisfied this threshold, indicating adequate construct validity. Internal consistency reliability was evaluated using Cronbach's alpha, where coefficients above 0.70 were considered indicative of good reliability (García-García et al., 2025; Pentapati et al., 2025). All study variables met this criterion, confirming that the measurement tools were reliable and consistently captured emotional intelligence and caring behavior.

The study population comprised all registered nurses employed at Dr. M. Djamil General Hospital Padang, totaling 958 individuals across both inpatient and outpatient departments. A probability sampling technique was applied, with the minimum sample size determined to be 100 participants based on the finite population formula for known populations:

$$n = \frac{1.96^2 \times 0.44(1 - 0.44) \times 958}{0.1^2(958 - 1) + 1.96^2 \times 0.44(1 - 0.44)} = 100$$

In total, 119 nurses completed the online survey, exceeding the minimum sample size requirement. Participants were selected proportionally based on the number of nurses assigned to each hospital unit, allowing balanced representation from both inpatient and outpatient services. Most respondents were drawn from surgical and non-surgical inpatient wards, followed by the obstetrics, pediatric, and outpatient units. A smaller number of participants represented specialized departments, including the Intensive Care Unit (Green ICU), the Central Operating Unit, and the Cardiovascular Care Unit (CVCU). This proportional sampling approach ensured that each clinical service area at Dr. M. Djamil General Hospital Padang was represented in

accordance with its workforce distribution, thereby strengthening the generalizability of the findings across different hospital departments. Data collection was conducted through an online survey administered via Google Forms.

All collected data were analyzed using IBM SPSS Statistics version 27. The association between nurses' emotional intelligence and caring behavior was examined using the Chi-square test. Furthermore, regression analysis was applied to evaluate the extent to which emotional intelligence predicted caring behavior. Statistical significance was determined at a p-value threshold of less than 0.05, indicating meaningful relationships between the variables analyzed.

RESULTS AND DISCUSSIONS

Instrument Validity Test

The findings of the validity assessment demonstrate that all statement items included in the Emotional Intelligence (EI) and Caring Behavior (CB) instruments met the established validity criteria. This was evidenced by item–total correlation coefficients that exceeded the minimum acceptable threshold and showed statistical significance at both the 1% and 5% levels ($p < 0.05$). For the emotional intelligence scale, correlation values ranged from 0.407 to 0.912, while the caring behavior scale showed correlation coefficients between 0.393 and 0.904. These values indicate strong to very strong associations between individual items and their respective total construct scores, confirming that each item effectively represented the variable being measured. Consequently, all 57 questionnaire items satisfied the required validity standards and were deemed appropriate for subsequent statistical analysis.

As summarized in Table 1, all items from both the Emotional Intelligence and Caring Behavior instruments demonstrated corrected item–total correlation values above 0.30, with significance levels below 0.05. Accordingly, the complete set of 33 emotional intelligence items and 24 caring behavior items were confirmed as valid and retained for further data analysis.

Table 1. Instrument reliability test

Contruct	Cronbach's Alpha	Status
Emosional inteligensi	0,976	Reliabel
Caring Behavior	0,952	Reliabel

Given that the Cronbach's alpha coefficients for both study variables exceeded the accepted threshold of 0.70, the measurement instruments were deemed to demonstrate satisfactory reliability. This indicates that all questionnaire items used to assess Emotional Intelligence and Caring Behavior were internally consistent and dependable for research purposes.

A univariate analysis was subsequently performed to summarize the respondents' demographic characteristics and to report the average scores of emotional intelligence and caring behavior among nurses working in the outpatient departments of Dr. M. Djamil Padang General Hospital.

Table 2. Frequency distribution and percentage based on respondent characteristics

No	Respondent Characteristics	F	%
1	Age		
	< 30 years	14	11.8
	>= 30 years	105	88.2
2	Gender		
	Female	105	88.2
	Male	14	11.8
3	Education		
	D3 nurse	45	37.8
	S1 Nurse	74	62.2

Table 2 presents the distribution of respondents according to their demographic characteristics. Most participants were aged 30 years or older, accounting for 88.2% of the sample, while only 11.8% were below the age of 30. With respect to gender composition, female nurses constituted the majority of respondents (88.2%), whereas male nurses made up 11.8% of the total sample. In terms of educational attainment, a larger proportion of respondents possessed a Bachelor's degree in Nursing (62.2%), while the remaining 37.8% had completed a Diploma in Nursing.

Table 3. Distribution and mean scores of nurses' emotional intelligence and caring behavior

Variable	Category	f	%	Mean	SD	95% CI
Emotional Intelligence	Low	2	1.7	122.39	16.72	119.36–125.43
	Moderate	50	42.0			
	High	67	56.3			
Caring Behavior	Poor	5	4.2	102.19	12.10	100.00–104.39
	Good	114	95.8			

Most nurses (56.3%) demonstrated high emotional intelligence and nearly all (95.8%) showed good caring behavior. The mean emotional intelligence score was 122.39, and the mean caring behavior score was 102.19, indicating that nurses at Dr. M. Djamil General Hospital generally possessed strong emotional and caring capacities in patient care.

Regresion Test

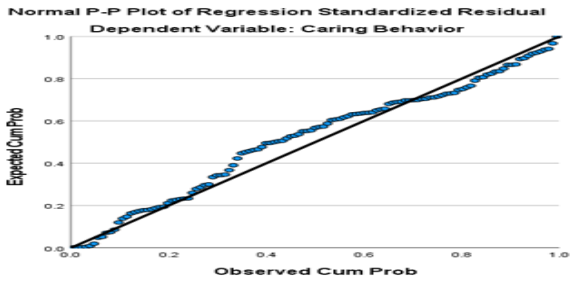

Figure 1. The normal probability–probability (P–P) plot of the standardized regression residuals

The plotted residual values align closely with the reference diagonal line, suggesting that the residuals are approximately normally distributed and that the normality assumption required for the regression analysis has been satisfactorily fulfilled.

Table 4. Model summary results for emotional intelligence on caring behavior

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.518[a]	.268	.262	10.38551

a. Predictors: (Constant), Emotional Intelligence

As indicated by the model summary results, Emotional Intelligence accounted for approximately 26% of the variability in the dependent variable and demonstrated a moderate positive association (r = 0.518). The remaining proportion of variance, nearly 74%, was attributable to other influencing factors that were not incorporated into the regression model.

Table 5. ANOVA results on emotional intelligence toward caring behavior

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	4631.084	1	4631.084	42.937.000[b]	
Residual	12619.471	117	107.859		
Total	17250.555	118			

ANOVA[a]					
Model	Sum of Squares	df	Mean Square	F	Sig.

a. Dependent Variable: Caring Behavior
b. Predictors: (Constant), Emotional Intelligence

Based on the ANOVA results, the regression model that included Emotional Intelligence as a predictor significantly explained the variation in Caring Behavior ($F = 42.937$, $p < 0.001$). In other words, Emotional Intelligence was proven to have a significant effect on Caring Behavior. The regression equation is presented in the following table.

Table 6. Linear regression coefficients between emotional intelligence and caring behavior

Model	Variable	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
1	(Constant)	31.494	10.831	–	2.908	0.004
	Emotional Intelligence	0.552	0.084	0.518	6.553	<0.001

Based on the table above, the regression equation can be written as:

$$Y = 31.494 + 0.552X$$

The analysis revealed a direct and positive association between Emotional Intelligence and Caring Behavior. Specifically, a one-point increase in Emotional Intelligence corresponded to an estimated 0.552-point rise in Caring Behavior. The intercept value of 31.494 indicates that, in the absence of Emotional Intelligence, the predicted baseline score for Caring Behavior would remain at 31.494. Furthermore, the Emotional Intelligence variable demonstrated a statistically significant influence on Caring Behavior, as reflected by a t-statistic of 6.553 and a p-value below the 0.05 threshold. H_1: Relationship between Respondent Characteristics with Emotional Intelligence and Caring Behavior. The Chi-square and Odds Ratio analyses indicated that nurses' age was not significantly associated with either emotional intelligence or caring behavior. Although nurses younger than 30 years tended to demonstrate lower levels of emotional intelligence and caring behavior compared with those aged 30 years and older, these differences were not statistically meaningful. This was reflected in p-values of 0.269 for emotional intelligence and 0.331 for caring behavior, along with confidence intervals that encompassed the null value. In a similar manner, gender was not identified as a significant determinant of emotional intelligence or caring behavior. While male nurses showed comparatively lower levels on both variables than their female counterparts, the observed differences were not statistically significant, as indicated by p-values of 0.592 for emotional intelligence and 0.331 for caring behavior, with odds ratios and confidence intervals crossing one.

Furthermore, educational background did not demonstrate a significant relationship with emotional intelligence or caring behavior. Nurses holding a diploma qualification (D3) were less likely to exhibit high emotional intelligence and caring behavior compared to those with a bachelor's degree in nursing (S1); however, this trend did not reach statistical significance, as evidenced by p-values greater than 0.05 and confidence intervals that included the null value.

These findings implied that the demographic factors analyzed were not the main predictors of emotional intelligence or caring behavior among nurses in this study. Other factors, such as work experience, emotional training, organizational culture, workload, or managerial support, might play a more decisive role regarding these variables. These findings indicate that demographic factors are not the main predictors of emotional intelligence or caring behavior among nurses. This result is consistent with previous studies that found age, gender, and education did not consistently predict caring behavior (Arsat *et al.*, 2023). In Greek healthcare settings, no significant effects of age or gender on emotional intelligence were found once

organizational factors were considered (Georgousopoulou et al., 2025). Similarly, research on nurses and nursing students reported that although older age correlated with slightly higher emotional intelligence, educational level did not significantly predict Trait EI ($p > 0.05$ for diploma vs bachelor) (Razghandi et al., 2025).

A study in Taiwan also identified a minor negative correlation between age and self-emotional management, though this relationship was not directly related to caregiving behaviors (Lou *et al*., 2022). Moreover, emotional intelligence has been shown to be positively associated with nursing outcomes such as engagement and performance, though it remains unrelated to demographic variables (Turjuman & Alilyyani, 2023).

The association between age, work experience, and caring behavior or emotional intelligence is often attributed to increased clinical exposure that enhances emotional awareness and maturity. However, these factors are not significant predictors in this study, possibly due to sample or contextual differences. Therefore, interventions to improve emotional intelligence and caring behavior should focus on contextual and personal factors such as training, mentoring, reflective experience, and supportive organizational culture rather than specific demographics. H_2: Relationship between Nurse Emotional Intelligence and Nurse Caring Behavior. The findings demonstrate a statistically significant association between nurses' emotional intelligence and their caring behavior. Of the 119 nurses included in the study, 73% of those with high emotional intelligence exhibited positive caring behavior, whereas 74% of nurses with low emotional intelligence were more likely to demonstrate inadequate caring behavior. The results of the analysis showed a highly significant p-value ($p < 0.001$) and an Odds Ratio of 7.412 (95% CI: 3.292–16.690), indicating that nurses with higher levels of emotional intelligence were more than seven times as likely to display appropriate caring behavior compared to those with lower emotional intelligence.

These findings are consistent with previous research highlighting the importance of emotional intelligence in nursing practice. Sadeghi *et al*., (2025), reported that emotional intelligence plays a significant role in enhancing nurses' empathy and caring behaviors ($\beta = 0.191$; $p < 0.01$). Likewise Jing *et al*., (2024) found that community-based educational interventions aimed at strengthening empathy and emotional intelligence led to improvements in caring practices and therapeutic nurse–patient relationships. Evidence from Indonesia also supports this relationship, as Jusamaliah *et al*., (2024) demonstrated a positive association between nurses' caring behavior and patient satisfaction, contributing to increased patient trust and a stronger institutional image. Furthermore, regression analysis in the present study confirmed a significant positive effect of emotional intelligence on caring behavior ($R = 0.518$; $R^2 = 0.268$; $F = 42.937$; $p < 0.001$), suggesting that emotional intelligence accounts for 26.8% of the variation in caring behavior. Overall, these results indicate that higher emotional intelligence strengthens nurses' ability to deliver empathetic, sensitive, and high-quality clinical care (Dogham et al., 2025; Jing et al., 2024). Reflective thinking also strengthens this relationship by helping nurses manage emotions and apply empathy effectively in practice. Beauvais et al., (2011) demonstrated that emotional intelligence is positively and strongly correlated with nurses' reflective capacity ($r = 0.612$, $p < 0.001$), which in turn supports the delivery of more empathetic and effective patient care.

This research was conducted in only one hospital setting; therefore, the results should be interpreted with caution when applying them to broader populations. Additionally, the reliance on self-administered questionnaires may have introduced subjective bias, although the measurement tools used had established validity and reliability, supporting the credibility of the study's findings.

CONCLUSION

Most nurses at Dr. M. Djamil General Hospital Padang were aged ≥30 years (88.2%), female (88.2%), and held a Bachelor of Nursing degree (62.2%). The majority showed high emotional

intelligence (56.3%) and excellent caring behavior (95.8%). Demographic variables did not significantly affect emotional intelligence or caring behavior. However, emotional intelligence had a strong, significant correlation with caring behavior (OR = 7.412; 95% CI: 3.292–16.690; $p < 0.001$; $R = 0.518$; $R^2 = 0.268$). These findings suggest that better emotional management enhances nurses' empathy and care quality. To strengthen caring behavior, hospital management should implement regular emotional intelligence training, mentoring programs, and benchmarking with international hospitals. Nursing education curricula should also emphasize practical training and simulations that develop caring competencies.

The most strategic policy implication for hospital management is to make emotional intelligence a core competency and key performance indicator (KPI) in nursing services, not simply a personal attribute of nurses. Given that emotional intelligence has been shown to strongly influence caring behavior, management needs to systematically integrate it through sustainable human resource development policies, such as clinical practice-based emotional intelligence training, emotional mentoring and coaching programs by senior nurses, and regular evaluation of caring behavior in performance appraisals. Relevant directions for further research to integrate emotional intelligence with organizational and nursing leadership factors include examining how emotionally intelligent leadership shapes caring climates and service quality in hospital settings.

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