

Original Article

Association between nurses' caring behaviors and patient satisfaction in inpatient wards of a hospital in South Tangerang city: A cross-sectional study

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Abstract

Background: Nursing care extends beyond clinical procedures to include interpersonal, psychological, social, and emotional support. Preliminary observations in the study setting indicated that patients generally perceived technical aspects of care positively, while gaps remained in emotional interaction and psychosocial support.

Objective: To examine the association between nurses' caring behaviors and patient satisfaction among inpatients at a hospital in South Tangerang City in 2026.

Methods: This quantitative correlational study used a cross-sectional design. A total of 67 inpatients from class II and III wards were selected using purposive sampling. Nurses' caring behaviors were assessed using the Caring Behavior Inventory (CBI-24), while patient satisfaction was assessed using SERVQUAL. Data were summarized descriptively and the association between caring behavior and patient satisfaction was tested using the chi-square test.

Results: Most respondents were in the 18–59-year age category (88.1%) and were female (67.2%). More than half rated nurses' caring behavior as low (52.2%), and 56.7% reported dissatisfaction with the services received. Among SERVQUAL dimensions, empathy had the highest dissatisfaction, with 42 of 67 respondents (62.7%) reporting dissatisfaction. Nurses' caring behavior was significantly associated with patient satisfaction ($p < 0.001$). Patients who perceived low caring behavior had higher odds of reporting dissatisfaction than those who perceived high caring behavior (OR = 8.80; 95% CI: 2.91–26.63).

Conclusion: Nurses' caring behavior was significantly associated with patient satisfaction in the studied inpatient wards. Because of the cross-sectional design, the finding should be interpreted as an association rather than a causal relationship.

Background

Nursing care is not limited to meeting physical needs and performing clinical procedures; it also includes patients' psychological, social, and emotional needs (He et al., 2024). This perspective is consistent with the Theory of Human Caring framework used in this study, in which caring is expressed through empathy, therapeutic communication, respect for patient dignity, sensitivity to individual needs, and a genuine interpersonal relationship between nurses and patients (Khaletabad et al., 2023). In inpatient settings, where nurses interact with patients repeatedly throughout hospitalization, these relational aspects may substantially shape how patients experience care (Kibret et al., 2022).

Patient satisfaction is an important indicator of perceived healthcare quality. In this study, satisfaction was considered through the SERVQUAL dimensions of tangibles, reliability, responsiveness, assurance, and empathy. Evidence from healthcare settings has linked service quality, patient experience, trust, and nursing care with patient satisfaction and subsequent loyalty-

related outcomes (Aladwan et al., 2021; Arman et al., 2023; Chen et al., 2022; El Gareem et al., 2024; Huang et al., 2021; Kristinawati et al., 2023; Liu et al., 2021; Shie et al., 2022; Zhao et al., 2024). Nursing-specific literature similarly emphasizes the relevance of caring behavior, therapeutic communication, and nursing service quality to patient satisfaction (Arbabi et al., 2021; Duwith & Gurning, 2024; Guo et al., 2023; Yuliana et al., 2024).

Previous research has examined caring and patient experience in different clinical and cultural settings, but the construct remains context-sensitive. Patients' perceptions of caring may vary according to service organization, communication patterns, expectations, and the quality of interpersonal contact. Research has highlighted nursing presence, trust in nurses, humanistic caring ability, and perceived care quality as relevant components of patients' experiences (Atashzadeh-Shoorideh et al., 2022; Bahari et al., 2024; Çoşkun Palaz & Kayacan, 2023; He et al., 2024). Broader health-service research also underscores that service utilization and experiences are shaped by contextual and

population characteristics (Amin, 2026). Therefore, evidence from one setting cannot automatically be assumed to represent another.

A preliminary study conducted on 11 February 2026 in the inpatient wards of the study hospital in South Tangerang City indicated a specific practice gap. Patients generally expressed satisfaction with medical procedures and technical aspects of care, but some reported inadequate emotional support when they felt anxious and perceived that nurses did not always fully understand their emotional condition. This pattern suggests a discrepancy between technically adequate care and the psychosocial or relational dimensions of nursing care.

The scientific gap addressed in this study is therefore not merely the limited evidence from a particular hospital. Rather, it concerns whether variations in perceived nurses' caring behaviors are associated with patient satisfaction in a setting where the preliminary findings suggested that technical care was relatively well accepted but emotional interaction remained problematic. This distinction is clinically relevant because a patient may perceive clinical tasks as adequately performed while still experiencing dissatisfaction when empathy, listening, emotional presence, or individualized attention are insufficient. The study aimed to examine the association between nurses' caring behaviors and patient satisfaction among inpatients at a hospital in South Tangerang City in 2026.

Methods

Study Design and Setting

This study used a quantitative correlational design with a cross-sectional approach to examine the association between nurses' caring behavior as the independent variable and patient satisfaction as the dependent variable. Both variables were measured during the same observation period without any intervention.

The study was conducted from December 2025 to February 2026 at Hospital X in South Tangerang City, a type C private general hospital located in the Pamulang area and providing 24-hour healthcare services. Data collection was limited to class II and class III inpatient wards.

Participants and Sampling

The study population comprised patients receiving inpatient care at Hospital X in South Tangerang City. Participants were selected using

purposive sampling based on the eligibility criteria established in the study. A total of 67 respondents were included from class II and class III inpatient wards.

Purposive sampling was used to recruit patients who met the study criteria and were able and willing to complete the study questionnaires.

Instruments

Data were collected using two questionnaires. The Caring Behavior Inventory (CBI-24) was used to assess patients' perceptions of nurses' caring behavior, and the resulting variable was categorized as low or high. The CBI-24 has been subjected to translation, cross-cultural adaptation, and psychometric testing in other settings (Khaletabad et al., 2023; Klarare et al., 2021).

Patient satisfaction was assessed using SERVQUAL across five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Overall satisfaction was categorized as satisfied or dissatisfied.

Data Collection

Data collection took place from December 2025 to February 2026. Potential participants in the class II and III inpatient wards were screened against the study eligibility criteria. Eligible patients received information about the study purpose, benefits, procedures, confidentiality, and their right to withdraw. Participants who agreed to take part provided informed consent and completed the CBI-24 and SERVQUAL questionnaires. The study was observational and involved no intervention or treatment.

Data Analysis

Univariate analysis was used to summarize respondent characteristics, nurses' caring behavior, overall patient satisfaction, and satisfaction across the five SERVQUAL dimensions using frequencies and percentages. Bivariate analysis used the chi-square test to assess the association between nurses' caring behavior and patient satisfaction. Statistical significance was defined as $p < 0.05$. The strength of association was reported using the odds ratio (OR) and 95% confidence interval (CI) as presented in the source results.

No multivariable analysis was reported in the source manuscript. Consequently, the association

presented in this study is unadjusted and should be interpreted with consideration of potential confounding by patient and service characteristics.

Ethical Considerations

Research procedures followed the ethical principles of respect for autonomy, beneficence, non-maleficence, and justice. Ethical approval was obtained from the Research Ethics Committee of Universitas Ichsan Satya, Tangerang Selatan, Indonesia (Ethical Approval No. 12/KEP-UIS/EC/2026). Before data collection, participants

received information about the purpose, benefits, procedures, potential risks, confidentiality, and the voluntary nature of participation. Written informed consent was obtained, and personal information was kept confidential and used only for research purposes.

Results

The study included 67 respondents. The distributions of demographic characteristics, perceived caring behavior, overall patient satisfaction, and satisfaction across the five SERVQUAL dimensions are presented in Table 1.

Table 1. Respondent characteristics, nurses' caring behavior, patient satisfaction, and SERVQUAL dimensions (n = 67)

Characteristic	Category	Frequency (n)	Percentage (%)
Age	10–18 years	4	6.0
	18–59 years	59	88.1
	>60 years	4	6.0
Sex	Female	45	67.2
	Male	22	32.8
Education	No formal schooling	1	1.5
	Primary school	9	13.4
	Junior high school	8	11.9
	Vocational high school	27	40.3
	Bachelor's degree	21	31.3
	Master's degree	1	1.5
Nurses' caring behavior	Low	35	52.2
	High	32	47.8
Overall patient satisfaction	Dissatisfied	38	56.7
	Satisfied	29	43.3
Tangibles	Dissatisfied	24	35.8
	Satisfied	43	64.2
Reliability	Dissatisfied	31	46.3
	Satisfied	36	53.7
Responsiveness	Dissatisfied	27	40.3
	Satisfied	40	59.7
Assurance	Dissatisfied	33	49.3
	Satisfied	34	50.7
Empathy	Dissatisfied	42	62.7
	Satisfied	25	37.3

Most respondents were in the 18–59-year age category (59 respondents; 88.1%), and 45 respondents (67.2%) were female. The largest educational group was vocational high school graduates (27 respondents; 40.3%), followed by respondents with a bachelor's degree (21 respondents; 31.3%). The source narrative also reported that housewives and self-employed respondents were the two most frequent occupational groups, with 17 respondents (25.4%) in each group.

More than half of the respondents perceived nurses' caring behavior as low (35 respondents; 52.2%), whereas 32 respondents (47.8%) perceived it as high. Overall, 38 respondents (56.7%) reported dissatisfaction with the services received during hospitalization, while 29 respondents (43.3%) reported satisfaction.

Across SERVQUAL dimensions, satisfaction was reported by 43 respondents (64.2%) for tangibles, 36 (53.7%) for reliability, 40 (59.7%) for responsiveness, and 34 (50.7%) for assurance.

The corresponding dissatisfaction proportions were 35.8%, 46.3%, 40.3%, and 49.3%, respectively. Empathy showed the opposite pattern and had the highest dissatisfaction: 42 respondents (62.7%) were dissatisfied, while 25 (37.3%) were satisfied. These percentages were

calculated directly from the frequencies reported for the 67 respondents.

The chi-square analysis showed a statistically significant association between nurses' caring behavior and patient satisfaction ($p < 0.001$). The cross-tabulation is presented in Table 2.

Table 2. Association between nurses' caring behavior and patient satisfaction

Nurses' caring behavior	Dissatisfied, n (%) column)	Satisfied, n (%) column)	OR (95% CI)	p-value
Low	28 (73.7)	7 (24.1)	8.80 (2.91–26.63)	<0.001
High	10 (26.3)	22 (75.9)	Reference	

Respondents who perceived nurses' caring behavior as low had 8.80 times the odds of reporting dissatisfaction compared with respondents who perceived caring behavior as high (OR = 8.80; 95% CI: 2.91–26.63). This estimate represents an unadjusted association. Because the study used a cross-sectional design, the OR should not be interpreted as evidence that low caring behavior caused dissatisfaction.

Discussion

The principal finding was a significant association between patients' perceptions of nurses' caring behavior and patient satisfaction. More than half of respondents rated caring behavior as low, and more than half reported overall dissatisfaction. The magnitude of the unadjusted OR indicates a strong association in this sample, although the wide confidence interval indicates uncertainty in the precision of the estimate. The cross-sectional design also prevents determination of temporal sequence and therefore does not support causal interpretation.

The finding is consistent with the broader literature linking nursing care behaviors and patient satisfaction. Studies in different hospital and inpatient settings have examined the relationship between nurses' caring behavior and patient satisfaction (Arbabi et al., 2021; Kibret et al., 2022). Patient satisfaction has also been related to the nurse–patient relationship, patient experience with nursing care, service quality, and patient trust (Aladwan et al., 2021; Chen et al., 2022; Guo et al., 2023; Shie et al., 2022). Together, these studies support the interpretation that patients evaluate nursing care not only through completion of clinical tasks but also through the

interpersonal quality of encounters and their overall experience of service.

The most distinctive finding in the SERVQUAL profile was dissatisfaction with empathy. While the majority were satisfied with tangibles (64.2%), responsiveness (59.7%), reliability (53.7%), and assurance (50.7%), 62.7% were dissatisfied with empathy. This pattern suggests that the principal weakness perceived by patients was not the visible or procedural component of care, but the experience of being understood, listened to, emotionally supported, and treated as an individual. Within the Theory of Human Caring framework used in this manuscript, this finding is particularly important because empathy and authentic interpersonal engagement are central to a humanistic nurse–patient relationship. Research on humanistic caring ability and trust in nurses further supports attention to the relational dimensions of nursing care (He et al., 2024; Çoşkun Palaz & Kayacan, 2023).

Therapeutic communication provides a plausible pathway linking caring behavior with satisfaction. Communication that acknowledges concerns, validates emotions, explains care clearly, and provides patients with an opportunity to express anxiety may strengthen patients' sense of respect and involvement. A cross-sectional study has specifically examined therapeutic communication in relation to patient satisfaction (Yuliana et al., 2024), while other nursing research has emphasized communication skills, trust, and effective communication in relation to care quality and patient safety (Bahari et al., 2024; Silvia et al., 2021). The present finding of high dissatisfaction in empathy is therefore compatible with the preliminary observation that some patients felt insufficiently supported when anxious.

Nursing presence is another relevant concept. Being physically available is not necessarily equivalent to being therapeutically present. Nursing presence involves meaningful attention at the bedside, responsiveness to patient concerns, and interpersonal engagement. Previous studies have developed measures of nursing presence and explored barriers to achieving meaningful bedside presence (Atashzadeh-Shoorideh et al., 2022; Fallahnezhad et al., 2023). In a busy inpatient environment, a nurse may complete necessary clinical tasks while patients still perceive limited emotional availability. This distinction may help explain why technical dimensions were comparatively more favorable while empathy remained the least satisfactory dimension. Relational nursing roles can also extend beyond immediate satisfaction to other patient-centered behaviors and outcomes, such as supporting medication adherence (Zoromski & Frazier, 2023).

The results should also be interpreted in relation to the measurement approach. The CBI-24 is an established caring behavior instrument that has undergone cross-cultural adaptation and psychometric testing in different settings (Khaletabad et al., 2023; Klarare et al., 2021). Nevertheless, perceptions of caring remain influenced by context and patient expectations. Cross-sectional evidence has shown that patients' perceptions of nurse caring behaviors vary according to patient and service-related factors (Ewunetu et al., 2025). Thus, the caring-satisfaction association observed here may partly reflect contextual characteristics that were not controlled in the bivariate analysis.

Several potential confounders were described in the study but not adjusted statistically. Age, education, class of care, length of stay, clinical condition, previous experiences, and frequency of interaction with nurses could influence both how caring behavior is perceived and how satisfaction is reported. In addition, the conditions under which nurses provide care may be shaped by organizational and workforce factors; workload and job satisfaction, as well as nurses' work engagement, have been examined in the nursing literature as relevant workforce issues (Yanwarin, 2024; Parida, 2026). Because the present analysis was limited to chi-square testing, the reported OR should be interpreted as a crude association. Future studies with larger samples should use multivariable analysis to determine whether the

association remains after adjustment for relevant patient and service characteristics.

From a service-improvement perspective, the findings point to empathy as a priority. Interventions may focus on therapeutic communication, active listening, validation of patient emotions, clear information, respectful eye contact, and deliberate opportunities for patients to express concerns. However, improvement strategies should not focus only on individual nurses. Humanistic caring is also shaped by the practice environment, including workload, staffing, leadership support, effective communication, and organizational expectations (Silvia et al., 2021; Yanwarin, 2024; Parida, 2026). Humanistic nursing care management strategies and evidence on nurses' humanistic caring ability reinforce the value of integrating caring systematically into clinical services (He et al., 2024; Lv et al., 2025).

Limitations

The study has several limitations. First, the cross-sectional design measured caring behavior and patient satisfaction during the same period, so temporal order cannot be established and causality cannot be inferred. Second, the sample consisted of 67 respondents recruited through purposive sampling in one hospital and was limited to class II and III inpatient wards, which restricts generalizability and may introduce selection bias. Third, the confidence interval around the OR was relatively wide, indicating limited precision. Fourth, both caring behavior and satisfaction were based on patient-reported questionnaires and may have been influenced by current clinical condition, mood, prior experiences, recall, or socially desirable responses. Finally, no multivariable analysis was reported, so potential confounding was not controlled.

These limitations should be considered when interpreting the findings and when planning future studies with larger samples, probability-based sampling, more complete measurement reporting, and multivariable analysis.

Implications for nursing practice

The findings support prioritizing the interpersonal and emotional dimensions of inpatient nursing care, particularly empathy. Hospital management may consider structured

reinforcement of therapeutic communication, active listening, emotional validation, and patient-centered interaction, accompanied by supervision and periodic evaluation of patient experience. These priorities are consistent with literature on nursing services, therapeutic communication, service quality, trust, and patient experience (Duwith & Gurning, 2024; Yuliana et al., 2024; Bahari et al., 2024; Arman et al., 2023). For nurses, consistent caring behaviors should be integrated into routine clinical encounters even in high-workload environments. Educational institutions may also reinforce human caring principles in laboratory and clinical preparation so that technical competence and relational competence are developed together. Broader service-quality studies further indicate that patient satisfaction is closely considered alongside trust, loyalty, and willingness to continue using healthcare services (El Garem et al., 2024; Huang et al., 2021; Kristinawati et al., 2023; Liu et al., 2021; Zhao et al., 2024).

Conclusion and Recommendation

Nurses' caring behavior was significantly associated with patient satisfaction among the 67 inpatients included in this study. Respondents who perceived low caring behavior had higher odds of reporting dissatisfaction than those who perceived high caring behavior. Empathy was the SERVQUAL dimension with the highest dissatisfaction (62.7%), suggesting that interpersonal and emotional aspects of nursing care warrant particular attention in this setting. These findings demonstrate an association only; they do not establish that caring behavior causes patient satisfaction or dissatisfaction.

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Declaration of conflict of interest

The authors declare no competing interests.

Declaration on the Use of AI

The authors declare that artificial intelligence (AI) tools were used only to assist in language editing and improving the clarity of the manuscript. All intellectual content, data analysis, and interpretation remain the responsibility of the authors.

Data Availability Statement

Data sharing is not applicable to this article.

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