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Research Article

Patients Satisfactions with the Quality of Nursing Care among Hospitalized Patients in Teaching Hospitals of Babylon Governorate, Iraq: A Cross- Sectional Study

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Abstract

Introduction: Patient satisfaction related to nursing care has been recognized as one of the most important health care quality indicators and a key outcome in evaluating hospital care. The aim of this study was to measure patient satisfaction with the quality of nursing care and identify its associated factors among hospitalized patients.

Method: A descriptive cross-sectional study design was employed. Data were collected from October 2025 to December 2025 in Babylon Governorate, Iraq, using a convenience sampling method. A total of 150 hospitalized adults admitted to the medical and surgical wards of selected hospitals (Al-Hilla Teaching Hospital and Imam Al-Sadiq Teaching Hospital) were chosen to participate in the study.

Result: The overall mean patient satisfaction score was 4.18 ± 0.46 (83.6%), indicating that patient satisfaction toward the quality of nursing care was high. The one-sample t-test showed that patient satisfaction was statistically significant (t-value = 31.55, $p < 0.001$, Cohen's d = 2.58). Comparative analysis revealed that non-surgical patients ($p = 0.003$), those admitted to private rooms ($p < 0.001$), and patients with a history of prior hospitalization ($p = 0.018$) reported higher satisfaction levels. Private room admission ($\beta = 0.29$), non-surgical admission ($\beta = 0.21$), previous hospitalization ($\beta = 0.16$), and older age ($\beta = 0.14$) were significant positive predictors of patient satisfaction, while longer hospital stay duration ($\beta = -0.19$) was a significant negative predictor.

Conclusion: Hospitalized patients were highly satisfied with the quality of nursing care they received. Patient satisfaction was more strongly predicted by organizational and hospitalization-related factors than by demographic characteristics. To enhance patients' experiences and satisfaction with nursing care, efforts should focus on improving patient-centered nursing care, hospital environments, and nurse-patient communication.

Keywords: Patient satisfaction; Nursing care quality; Patient-centered care; Quality improvement.

Introduction

Global health systems have prioritized healthcare quality to a large extent because of its impact on patient safety, clinical outcomes, healthcare efficiency, and public confidence. The World Health Organization (WHO) defines a quality health system as one that is safe, effective, timely, efficient, equitable, integrated, and people-centered. Achieving these dimensions requires the ongoing assessment of healthcare services using high-quality indicators related to both clinical performance and patients' experiences (World Health Organization [1].

Patient care is a fundamental component of quality care. Today's healthcare systems no longer view mortality rates, complication rates, or length of stay as the sole

measures of success; increasingly, they consider patients' views of the care they receive. As a result, patient satisfaction has become an internationally recognized indicator of healthcare quality, hospital performance, and quality enhancement. According to Sinyiza et al. [2] and Lake et al. [3], greater patient satisfaction is associated with better adherence to treatment, improved clinical outcomes, lower healthcare utilization, enhanced safety, and greater organizational effectiveness.

Within the healthcare system, nurses constitute the largest group of personnel in most countries and spend considerably more time with hospitalized patients than any other health professional. Nurses play essential roles in the ongoing assessment of patients, administering medications, managing symptoms, offering emotional support, educating patients, facilitating discharge, and coordinating care with other disciplines. Consequently, patients often judge the overall quality of hospital services based on the nursing care they receive, rather than solely on medical treatment. According to various international studies [3,4], the quality of nursing care is one of the strongest determinants of patient satisfaction and hospital image.

Patient satisfaction is a complex concept that encapsulates what patients expect and experience throughout their hospitalization. It is influenced by a number of interrelated factors, including nurses' communication skills, responsiveness, professional competence, empathy, respect for patient dignity, privacy protection, information availability, waiting times, continuity of care, and the organizational characteristics of healthcare institutions. Research indicates that communication between nurses and patients, along with patient-centered nursing interventions, significantly enhances patients' confidence in health services, which in turn affects treatment compliance and recovery outcomes [5,6].

Recent systematic reviews suggest that patient satisfaction surveys are essential quality assurance tools that health organizations are increasingly adopting. These surveys help highlight the strengths and weaknesses of healthcare delivery systems, facilitate benchmarking between institutions, and generate evidence for quality improvement strategies. Moreover, in a number of nations, hospital accreditation systems have integrated patient-reported experience measures as key components, since they provide data that routine clinical indicators cannot capture [2].

The Patient Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ), developed by Laschinger et al., is one of the most widely used instruments to evaluate the quality of nursing care. This tool has demonstrated excellent psychometric properties across a range of healthcare settings and has been translated and culturally adapted into many languages, including Arabic. The Arabic version has been found to have good validity and reliability among hospitalized patients in Middle Eastern populations, making it suitable for assessing the quality of nursing care in Iraqi healthcare settings [7,8].

Although patient satisfaction with nursing care has been extensively researched in many countries around the world, evidence from Iraq remains relatively scarce. Iraqi hospitals continue to face numerous challenges related to healthcare infrastructure, workforce shortages, rising patient demands, and resource limitations. These factors significantly affect patients' perceptions of the quality of nursing services and overall care. Despite the existence of several local studies on healthcare quality, comprehensive investigations into patient satisfaction with nursing care using standardized instruments are rare or limited to only a few studies. In particular, such research is notably lacking in the teaching hospitals of Babylon Governorate—namely Al-Hilla Teaching Hospital and Imam Al-Sadiq Teaching Hospital. These facilities are among the largest governmental referral hospitals in Babylon Governorate and provide medical and surgical services to a large population suffering from a variety of diseases. It is essential to continually evaluate patients' experiences in these hospitals in order to identify strengths and weaknesses in nursing practice and support hospital quality improvement efforts. Evaluating patient satisfaction provides hospital administrators and nursing leaders with the evidence needed to design educational interventions, optimize staffing strategies, and enhance patient-centered care (WHO [9]).

Furthermore, understanding the factors associated with patient satisfaction can strengthen nursing practice, improve healthcare quality, and support national health development goals. The identification of demographic and clinical variables related to satisfaction facilitates the establishment of measures aimed at improving the quality of patient experience and overall nursing performance [10].

Methods

A descriptive cross-sectional study was conducted with the aim of assessing hospitalized patients' satisfaction with the quality of nursing care and identifying the factors associated with their satisfaction. The cross-sectional design was deemed suitable, as it allows for the assessment of patient satisfaction at a specific point in time and the identification of factors associated with perceived quality of nursing care. The study was carried out at Al-Hilla Teaching Hospital and Imam Al-Sadiq Teaching Hospital in Babylon, Iraq. These government teaching hospitals are among the largest referral healthcare institutions in the governorate and provide comprehensive medical and surgical services to patients from Babylon and nearby provinces. Data were collected from inpatient medical and surgical wards—settings where patients had sufficient contact with nursing staff to adequately assess the quality of nursing care received. The target population consisted of adult hospitalized patients admitted to these wards. A total of 150 hospitalized patients were enrolled in the study. Participants were selected using a non-probability convenience sampling technique, which allowed for the recruitment of eligible patients who met the inclusion criteria during the data collection period. While convenience sampling may affect the generalizability of the findings, it is a commonly used technique, particularly in descriptive hospital-based studies investigating patient satisfaction. Data were collected using a structured questionnaire comprising two sections. Part I: Socio-demographic and Clinical Characteristics

This section collected information regarding:

age
gender
marital status
educational level
occupation
place of residence
hospital ward
previous hospitalization
duration of hospitalization
admission type

Part II: Patient Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ)

A questionnaire is a research instrument consisting of a series of questions for the purpose of gathering information from respondents.

The questionnaire assesses patients' views on nursing care in several aspects, including:

nurses' professional competence;
communication;
interpersonal relationship;
promptness of care;
patient education;
emotional support;
respect for patient dignity;
overall satisfaction.

A five-point Likert scale was used to score responses:

1 = Poor 2 = Fair 3 = Good 4 = Very Good 5 = Excellent

Nursing care satisfaction was higher with higher scores.

Cronbach's alpha coefficient was used to evaluate internal consistency reliability.

The results of the questionnaire showed good internal consistency, and the overall Cronbach’s alpha coefficient was 0.953, indicating that the scale was reliable for assessing patient satisfaction. A pilot study was done on 15 patients in the hospital. They were excluded from the sample.

The pilot study had the following objectives.

- Evaluate the clarity of the questionnaire.
- Determine how long the interview will take;
- Pinpoint unclear inquiries.
- Examine the possibility of obtaining information.

The results confirmed that questionnaire is easy to understand and suitable to share with.

Ethical Considerations

Before the collection of study data official organizational permissions were obtained. After many procedures, these agreements have been reached, including the approval of the study by the University of Babylon College of Nursing Council. Certificate from the Ethics Committee of the College of Nursing

University of Babylon in September 2025 with code 52. Before the study takes place, each patient gives their consent. Participants are informed that participation is voluntarily and all their information will remain confidential and only used for research purposes.

Study Strengths

The measurement scale (PSNCQQ) used in this study is already validated and has a high level of reliability. It also has a very high internal consistency i.e. Cronbach's $\alpha = 0.953$. This also did extensive statistical analyses, which included comparison tests as well as multiple linear regression analyses to identify independent predictors of patient satisfaction.

Study Limitations

The cross-sectional design of the study, conducted in a small number of hospitals, limits its generalisability and does not allow for any inference of causality.

There might be response bias and social desirability bias from the self-reported responses from the patients to measure satisfaction.

Statistical Analysis

Data from the current study were processed using IBM SPSS Statistics version 26 (Statistical Package for the Social Sciences). Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to summarize socio-demographic and clinical characteristics. A one-sample t-test was employed to compare the overall satisfaction score against the neutral midpoint of the scale. Independent samples t-tests were used to compare satisfaction scores between patient subgroups. Multiple linear regression analysis was performed to identify independent predictors of patient satisfaction. Cronbach's alpha was calculated to assess the internal consistency reliability of the PSNCQQ. A p-value of <0.05 was considered statistically significant.

Results

Participants' Characteristics

The mean age of the study participants was 46.8 ± 15.2 years, with nearly one-third (32.0%) falling within the 46–60 years' age group. The majority of respondents were male (54.7%) and married (62.0%). Most had completed secondary school education (26.0%), while 39.3% were employed. A larger proportion of the sample resided in urban areas (64.7%) and were admitted to public wards (72.7%). Furthermore, a slight majority were non-surgical patients (52.0%). Most patients had a hospital stay of 4–7 days, and over half had a history of prior hospitalization.

Patient Satisfaction Scores

Findings from the study revealed a very high level of participant satisfaction, as measured by the PSNCQQ. The overall mean satisfaction score was 4.18 ± 0.46, representing 83.6% of the maximum attainable score. The distribution exhibited a negative skewness, indicating that most data points clustered toward the right (higher satisfaction); however, the kurtosis value suggested that the distribution was approximately normal. The PSNCQQ demonstrated excellent internal consistency reliability, with a Cronbach's alpha of 0.953 (Table 2).

An estimated 91.0% of respondents reported high or very high satisfaction with nursing care. As shown in Table 3, only 2.0% of participants exhibited low levels of satisfaction, while none reported very low satisfaction, indicating an overall positive perception of nursing care.

A one-sample t-test revealed that patient satisfaction levels were significantly higher than the neutral midpoint score of 3.00, $t(149) = 31.55$, $p < 0.001$. As presented in Table 4, the Cohen's d value of 2.58 indicates a very large effect size, suggesting that the findings are not only statistically significant but also practically meaningful.

Predictors of Satisfaction

The final regression model accounted for 45.3% of the variance in satisfaction with nursing care (Adjusted $R^2 = 0.434$, $F = 24.35$, $p < 0.001$). Admission to a private room ($\beta = 0.29$) emerged as the strongest positive predictor of satisfaction, followed by non-surgical admission ($\beta = 0.21$). A longer hospital stay was the strongest negative predictor of satisfaction. Additionally, older age and prior hospitalization were positive contributing factors, though these variables were only modestly significant predictors (Table 6).

According to Table 5, no significant difference in satisfaction levels was found between male and female patients ($p = 0.083$). However, patients admitted for non-surgical cases were significantly more satisfied than their surgical counterparts.

Table 1: Socio-demographic and Clinical Characteristics of the Study Sample (n=150)

Variable	Category	Frequency (n)	Percentage (%)
Age (Mean± SD)	46.8 ± 15.2	-	-
Age Group	18–30	31	20.7
	31–45	45	30.0
	46–60	48	32.0
	>60	26	17.3
Sex	Male	82	54.7
	Female	68	45.3
Marital Status	Single	38	25.3
	Married	93	62.0
	Divorced	11	7.3
	Widowed	8	5.4
Education	Illiterate	19	12.7
	Primary	32	21.3
	Secondary	39	26.0
	Diploma	24	16.0
	Bachelor	29	19.3
	Postgraduate	7	4.7
Employment Status	Employed	59	39.3
	Unemployed	44	29.3
	Retired	26	17.3
	Student	21	14.0
Residence	Urban	97	64.7
	Rural	53	35.3
Type of Patient	Surgical	72	48.0
	Non-surgical	78	52.0
Room Type	Private	41	27.3
	Public	109	72.7
Length of Stay	1–3 days	52	34.7
	4–7 days	63	42.0
	>7 days	35	23.3
Previous Admission	Yes	81	54.0
	No	69	46.0

Table 2: Descriptive Statistics and Reliability of Patient Satisfaction with Nursing Care Quality (n=150)

Variable	Mean ± SD	Mean (%)	Min–Max	Scale Range	Skewness	Kurtosis	Cronbach's α
Patient Satisfaction with Nursing Care	4.18 ± 0.46	83.6	2.85–5.00	1–5	-0.64	0.42	0.953

Table 3: Overall Distribution of Patient Satisfaction Levels (n=150)

Satisfaction Level	Frequency	Percentage
Very High	63	42.0
High	73	48.7
Moderate	11	7.3
Low	3	2.0
Very Low	0	0.0

Table 4: One-Sample t-test Comparing Overall Patient Satisfaction with the Neutral Reference Value

Variable	Test Value	Mean Difference	t	df	p-value	95% CI	Cohen's d
Patient Satisfaction	3.00	1.18	31.55	149	<0.001	1.11–1.26	2.58

Table 5: Comparative Analysis of Overall Patient Satisfaction According to Patient Characteristics

Variable	Mean± SD	Test Statistic	p-value
Gender			
Male	4.22 ± 0.44	t = 1.74	0.083
Female	4.13 ± 0.48		
Type of Patient			
Surgical	4.09 ± 0.47	t = 3.02	0.003
Non-surgical	4.27 ± 0.43		
Room Type			
Private	4.36 ± 0.38	t = 3.54	<0.001
Public	4.11 ± 0.47		
Previous Admission			
Yes	4.25 ± 0.44	t = 2.39	0.018
No	4.09 ± 0.48		

Table 6: Multiple Linear Regression Analysis Predicting Overall Patient Satisfaction

Predictor	Standardized β	B	SE	t	p-value	95% CI
Age	0.14	0.005	0.002	2.29	0.023	0.001–0.009
Length of Stay	-0.19	-0.031	0.011	-2.81	0.006	-0.053–-0.009
Private Room	0.29	0.241	0.058	4.17	<0.001	0.127–0.355
Non-surgical Patient	0.21	0.182	0.060	3.03	0.003	0.063–0.301
Previous Admission	0.16	0.138	0.055	2.51	0.013	0.029–0.247
$R=0.673$, $R^2=0.453$, Adjusted $R^2=0.434$, $F=24.35$, p-value <0.001						

Discussion

The current research comprised 150 inpatients, with a mean age of 46.8 ± 15.2 years. The largest proportion of patients (32.0%) fell within the 46–60 years' age group. This age distribution suggests that most hospitalized patients were middle-aged, likely due to the increasing prevalence of chronic and age-related diseases requiring inpatient care. Similar findings have been reported in studies conducted in Jordan, Saudi Arabia, and Ethiopia, where the majority of hospitalized patients were also middle-aged adults [11-13]. This trend may be attributed to the higher burden of non-communicable diseases in this age group, which necessitate ongoing medical management. Older adults generally have greater healthcare needs due to multiple comorbidities, increasing their likelihood of hospital admission (WHO [14]).

In this study, male patients (54.7%) outnumbered female patients (45.3%). This finding aligns with regional studies that report higher hospital admission rates among males, particularly in medical and surgical wards. Possible explanations include gender differences in workplace exposure, healthcare-seeking behavior, and the higher incidence of chronic cardiovascular and metabolic diseases among men in many Middle Eastern countries. Nevertheless, recent literature does not support the notion that gender itself influences patient satisfaction when comparable levels of nursing care are provided, suggesting that quality of care is more dependent on organizational and clinical factors than on the patient's sex [12].

Most participants were married (62.0%), which is likely related to the age profile of the sample. Studies indicate that married patients benefit from family support during hospitalization, which helps reduce anxiety, promote treatment adherence, and facilitate recovery. Families play an integral role in the healthcare experience of patients. In the Middle East, family members provide invaluable psychological and practical support to hospitalized individuals [15]. Family involvement is increasingly recognized as an essential component of patient-centered care and may positively influence patients' perceptions of nursing services.

Approximately one-quarter of the surveyed patients had completed secondary school, while only about 5% had postgraduate education. This educational profile is comparable to previous studies conducted in developing countries, where hospitalized patients typically have secondary-level education. The educational level of patients may affect their understanding,

communication, and expectations of nursing care. Individuals with higher educational attainment tend to have better health literacy and may evaluate healthcare services more critically due to higher expectations and greater awareness of quality standards (Karaca & Durna [4]; WHO [14]).

In terms of employment status, 39.3% of participants were employed, while the remainder were unemployed, retired, or students. Employment status may indirectly influence hospitalization patterns through socioeconomic status, insurance coverage, and access to care. Prior studies have indicated that socioeconomic conditions affect healthcare utilization as well as patients' expectations of hospitals. However, the direct association between employment status and satisfaction remains inconsistent across different healthcare settings [13].

A majority of participants (64.7%) resided in urban areas, reflecting the location of the study hospitals. Urban residents have greater access to specialized healthcare facilities and hospital services compared to their rural counterparts. Similar findings have been reported in hospital-based studies in Jordan and Saudi Arabia, where tertiary health facilities predominantly serve urban populations [11,12]. According to the WHO, inequitable access to healthcare remains a significant public health issue in developing countries, particularly between rural and urban communities.

The study sample included 52.0% medical ward patients and 48.0% surgical ward patients, indicating adequate representation of hospitalized patients across clinical specialties. The inclusion of both patient groups enhances the external validity of the study by allowing comparisons across clinical settings. Earlier research has shown that medical and surgical patients often experience healthcare differently due to variations in disease severity, treatment complexity, postoperative pain, and nursing care needs (Karaca & Durna [4]).

Public rooms were assigned to 72.7% of participants, compared to 27.3% assigned to private rooms. This distribution reflects the predominance of shared accommodation in Iraqi public hospitals, largely due to resource constraints rather than patient preference. The hospital environment—including room occupancy, privacy, noise levels, and comfort—is an important determinant of patients' hospital experience and satisfaction with nursing care [11,14].

Most patients (42.0%) had a hospital stay of 4–7 days, while nearly one-quarter remained hospitalized for more than one week. This length of stay is comparable to that of other adult medical and surgical patients in similar settings. Research indicates that longer hospitalizations are typically associated with more severe diseases and complex treatments, which may impact patients' assessments of care quality [15].

More than half of the sample (54.0%) reported a history of prior hospitalization. Patients with previous hospital experience tend to be less anxious, as they are familiar with hospital routines. According to Al-Hammouri et al. [11], greater familiarity with healthcare services is associated with increased confidence in healthcare professionals and more realistic expectations regarding hospital care, which in turn may positively influence patients' overall experience during hospitalization.

Overall, the sociodemographic and clinical profile of the study sample is consistent with that reported in other studies conducted in Middle Eastern and other developing countries. Thus, the study sample may be considered representative of adult hospitalized patients receiving routine inpatient nursing care. The diversity in patients' demographic and clinical characteristics provides a solid foundation for examining factors influencing patient satisfaction with the quality of nursing care.

Discussion of Overall Patient Satisfaction with Nursing Care Quality

The current study revealed that patient satisfaction with the quality of nursing care was high in the participating hospitals during the study period. The overall mean score on the Patient Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ) was 4.18 ± 0.46, corresponding to 83.6% of the maximum possible score. Furthermore, approximately 91.0% of participants reported either high (48.7%) or very high (42.0%) levels of satisfaction with the quality of nursing care. Only 2.0% of participants reported low satisfaction, and none reported very low satisfaction. These findings indicate an overall positive perception of nursing services, reflecting the success of nurses in meeting patients' expectations regarding the quality of care provided during hospitalization.

Patient satisfaction is one of the most important indicators of healthcare quality, as it reflects patients' perceptions of the effectiveness, safety, responsiveness, and person-centeredness of care. The World Health

Organization (WHO [14]) states that patient experience is a key dimension of quality care, alongside clinical effectiveness and patient safety. Thus, the high satisfaction observed in the present study suggests that the participating hospitals have been able to provide an acceptable level of nursing care quality.

Similar findings have been reported by Karaca and Durna [4], who found that patient satisfaction with nursing care in hospitals was high. In that study, patients rated nurses highly for professional competence, respect, communication ability, and responsiveness. Likewise, a study conducted in Jordanian hospitals by Al-Hammouri et al. [11] demonstrated significantly high patient satisfaction levels, concluding that communication, individualized nursing care, and professional behavior of nurses were powerful contributing factors. Alharbi et al. [12] showed that patient-centered nursing practice enhanced patients' perceptions of care quality in Saudi Arabian hospitals.

The high satisfaction level observed in this study may be attributed to the continuous interaction between nurses and hospitalized patients. Nurses are often the first healthcare professionals to greet patients upon admission and spend the greatest amount of time with them throughout their hospital stay. They provide direct clinical care, emotional support, patient education, health counseling, and continuous monitoring. Current nursing literature indicates that patients evaluate not only the technical competence of nurses but also their interpersonal communication, empathy, respect for dignity, responsiveness, and ability to establish therapeutic relationships. Nurse–patient communication is arguably the strongest determinant of patient satisfaction in many health systems [4,11].

The distribution of satisfaction scores reinforces these conclusions. The predominance of high and very high satisfaction ratings indicates that the majority of patients were satisfied with their interactions with nursing staff and reported that nursing care addressed their healthcare needs. However, even though the proportion of patients reporting low satisfaction was small (2.0%), these responses should not be overlooked. While few patients were dissatisfied, their feedback may reflect issues related to communication, environment, waiting times, pain management, or lack of patient-centeredness. As noted by Hosseini et al. [15] and Mulugeta et al. [13], systematic reviews have highlighted that even small proportions of dissatisfied patients provide valuable insights for identifying modifiable organizational factors.

The present study also reported excellent psychometric properties for the PSNCQQ. The instrument demonstrated strong internal consistency, with a Cronbach's alpha of 0.953, indicating that the questionnaire reliably measures patients' perceptions of nursing care quality. Cronbach's alpha values exceeding 0.90 indicate a highly reliable scale. The reliability coefficient reported here is consistent with that observed in the original validation studies by Laschinger et al. [7] and subsequent cross-cultural validation studies, including the Arabic validation conducted by Albashayreh et al. [8]. This evidence supports the validity of the PSNCQQ for assessing patient satisfaction across different contexts.

Descriptive analysis also revealed a negative skewness value (−0.64), indicating that the distribution of respondents' scores was concentrated toward higher values on the satisfaction scale. The kurtosis value of 0.42 suggested that the distribution was approximately normal on the positive side. These findings indicate that the high satisfaction levels are unlikely to be sampling errors and support the robustness of subsequent parametric analyses. Similar response distributions, with patient satisfaction scores tending toward positive evaluations of nursing care, have been observed in studies using the PSNCQQ [4,7].

In summary, the present study demonstrates that hospitalized patients positively perceived the quality of nursing care and that the PSNCQQ is a highly reliable tool for assessing patient satisfaction in the context of Iraqi hospitals. Continuous evaluation of patient satisfaction using standardized instruments should be integrated into hospital quality improvement programs to monitor nursing performance, identify areas needing improvement, strengthen person-centered care, and support evidence-informed decision-making for quality and safety enhancement in health services.

Discussion of the One-Sample t-Test Findings

The one-sample t-test showed that the overall mean patient satisfaction score was significantly higher than the neutral reference value of 3.00, with a mean difference of 1.18 ($t = 31.55$, $df = 149$, $p < 0.001$). This statistical evidence indicates that hospitalized patients viewed the quality of nursing care more favorably than would be expected by chance or neutral evaluation. In practical terms, patients' ratings of nursing care

consistently exceeded the midpoint of the scale, suggesting that nursing services generally surpassed patients' expectations regarding care quality. Similar observations have been made in international studies, where patient satisfaction scores were found to be significantly higher than neutral values, indicating favorable perceptions of nursing care quality and patient-centered nursing practice [4,11].

The current study found a very large effect size (Cohen's d = 2.58), indicating that the effect is clinically meaningful and not merely statistically significant beyond the $p < 0.05$ level. According to Cohen's criteria [16], an effect size of 0.20 is small, 0.50 is medium, and 0.80 is large. Consequently, an effect size of 2.58 suggests that the quality of nursing care is perceived as exceptionally high. This finding indicates that the high satisfaction reported by patients reflects a meaningful improvement in their perception of nursing care, rather than a difference that is only statistically detectable. Reporting effect sizes alongside p-values is increasingly recommended in nursing and healthcare research, as it provides readers with a better understanding of the practical significance of findings and allows for greater comparability across studies [17].

The positive difference observed in this study is considerably greater than that reported in previous studies. This may be due to several factors related to the nursing care provided. Nurses are the healthcare professionals who maintain the closest and most continuous contact with hospitalized patients, enabling them to provide ongoing clinical monitoring, health education, emotional support, and responsive care. Previous studies have revealed that communication skills, professional competence, empathy, responsiveness, and respect for patients' dignity strongly influence patient satisfaction with nurses. Thus, the remarkably higher satisfaction scores reported in this study may be attributable to the successful implementation of patient-centered nursing practices in the participating hospitals [11,12].

These results also support the World Health Organization's recommendation [14] that positive patient experience is a key dimension of quality alongside safety and clinical effectiveness. High levels of patient satisfaction indicate that healthcare services are responsive to patients' needs, preferences, and expectations, and that nursing care significantly improves patients' overall hospitalization experience. Therapeutic communication and the inclusion of patients in care planning are among the strongest determinants of positive patient experiences in any healthcare setting [18].

The current study reveals that nursing care at the study hospitals performed not only statistically better than neutral but also clinically significantly better in terms of quality improvement feedback, as evidenced by the very large effect size. Despite these high satisfaction levels, continuous monitoring through patient experience reports and regular evaluation of nursing performance using instruments such as the PSNCQQ is essential to implement ongoing quality improvements that strengthen patient-centered care, communication, and evidence-based nursing. International health organizations, including the WHO [14], recommend integrating patient satisfaction outcomes into hospital quality assurance programs, as these indicators provide actionable information to enhance nursing services.

In conclusion, the one-sample t-test results indicate that patients significantly assessed the quality of nursing care more positively than neutral, and the exceptionally large effect size highlights the practical significance of the findings. Overall, these results support the conclusion that, in the participating hospitals, patients highly valued the nursing care they received and believed that it significantly contributed to a positive hospitalization experience.

Discussion of Comparative Differences in Patient Satisfaction According to Patient Characteristics

This study investigated the relationship between patient satisfaction with the quality of nursing care and various demographic and clinical variables. The results indicate that patient type, room type, and previous hospitalization were significantly associated with satisfaction, while gender was not significantly associated with patient satisfaction.

Although male patients gave slightly higher satisfaction scores, the p-value was not significant ($p = 0.083$), suggesting that there is no substantial difference in satisfaction between genders. This finding indicates that nursing care is provided equitably to patients of both sexes and that gender had no substantial effect on patients' views of nursing care. Karaca and Durna [4] similarly reported no difference in satisfaction based on gender among hospitalized patients in Turkey. Al-Hammouri et al. [11] concluded that when patient and

hospital characteristics were controlled for, gender was not an independent predictor of satisfaction. These findings may reflect the use of standardized nursing practices that promote equal care for every patient, regardless of demographics. Nevertheless, some studies have yielded contradictory results, indicating that women may sometimes be less satisfied due to higher expectations regarding communication of health information, emotional support, privacy, and participation in care [15]. In the present study, because gender differences were not significant, it can be stated that nurses were able to meet the expectations of both male and female patients.

An independent samples t-test was used to compare satisfaction scores between surgical and non-surgical patients. A statistically significant difference was observed with respect to patient type ($p = 0.003$). Non-surgical patients reported significantly higher satisfaction compared to surgical patients. This suggests that surgical patients often experience greater pain, anxiety, and uncertainty regarding outcomes, which may lead to more negative evaluations of nursing care. Patients undergoing surgery tend to have higher expectations of nursing services, as they require extensive postoperative monitoring, pain relief, wound care, and emotional support. Consequently, even technically appropriate care may be associated with reduced satisfaction if there are shortfalls in communication, responsiveness, or symptom management. Karaca and Durna 4 reported similar findings, and a systematic review by Mulugeta et al. [13] showed that medical patients generally report higher satisfaction than surgical patients, which is explained by differences in disease burden and care complexity. Additionally, Sideeq [19] indicated that postoperative patients in Iraqi hospitals often have lower satisfaction with pain management and postoperative nursing support, highlighting the need to strengthen perioperative nursing care.

Patients placed in private rooms exhibited significantly higher satisfaction than those admitted to public wards ($p < 0.001$). The care environment plays a crucial role in shaping patients' perceptions of care quality. Private rooms offer enhanced privacy, reduced noise, improved rest and recovery, better infection control, and more confidential discussions with nurses and family members. The physical and psychological comfort of patients in a healthcare environment influences their overall experience and satisfaction. Al-Hammouri et al. [11] reported similar findings regarding the impact of the hospital environment on patient satisfaction. Likewise, Alharbi et al. [12] demonstrated that patients hospitalized in less congested, more comfortable spaces were more satisfied with nursing care. These findings provide further support for international recommendations calling for improvements in hospital infrastructure as part of overall quality improvement strategies (WHO [14]).

Patients with a history of prior hospitalization were significantly more satisfied than those admitted for the first time ($p = 0.018$). Previous hospital encounters may reduce uncertainty, increase knowledge of hospital routines, and boost trust in the facility and staff. Patients with prior admissions may have more realistic expectations of nursing care and may be better equipped to express their needs. As a result, previous hospitalization may facilitate the establishment of a stronger therapeutic relationship between nurses and patients, enhancing overall perceptions of care quality. Similar findings have been reported by Al-Hammouri et al. [11] and Hosseini et al. [15], who concluded that familiarity with healthcare settings positively affects patients' trust in healthcare providers and satisfaction with hospitalization experiences. Nonetheless, other studies suggest that repeat admissions could reduce satisfaction if previous care experiences were negative, indicating that the impact of prior hospitalization may vary depending on the quality of care and organizational performance [13].

In summary, clinical and organizational characteristics appear to have a greater impact on patient satisfaction than demographic characteristics. According to the current study, although satisfaction was not associated with gender, hospitalization-related variables such as admission type, room type, and previous hospitalization were significant predictors of patients' perceptions of nursing care quality. Research increasingly shows that patient satisfaction is influenced by healthcare experiences, environment, nurse–patient communication, and organizational quality, rather than demographic characteristics alone. Therefore, nursing managers and hospital administrators should design interventions to improve ward environments, perioperative nursing care, and continuity of care to further optimize patient satisfaction and healthcare quality [11-14].

The current study employed multiple linear regression analysis to identify independent predictors of patient satisfaction with nursing care quality. The final regression model was statistically significant ($F = 24.35$, $p < 0.001$) and explained 45.3% of the variance in patient satisfaction ($R^2 = 0.453$; Adjusted $R^2 = 0.434$). Nearly half of the variability in patients' satisfaction was accounted for by the demographic and clinical variables included in the model. The remaining variability may be attributed to other organizational, interpersonal, and health system-related factors not measured in the current study. Other studies investigating predictors of patient satisfaction using regression models, such as those by Al-Hammouri et al. [11] and Karaca and Durna [4], have shown explanatory power ranging from 30% to 50% for satisfaction with nursing care. These results highlight that patient satisfaction is multidimensional and arises from the interaction of multiple patient, nursing, healthcare environment, and organizational process factors, rather than a single determinant.

The strongest positive predictor of patient satisfaction among all variables included in the regression model was admission to a private room ($\beta = 0.29$, $p < 0.001$). This result indicates that environmental factors are conducive to patients' perceptions of nursing care quality. Patients in private rooms typically enjoy more privacy, less environmental noise, better opportunities for rest, greater confidentiality, and more personalized communication with staff. These environmental attributes positively influence patients' physical comfort and psychological well-being, which in turn affect their overall rating of nursing care. Similar findings were reported by Al-Hammouri et al. [11], who found that hospital environmental characteristics were important determinants of patient satisfaction. Alharbi et al. 12 also showed that patients admitted to less crowded hospitals had higher satisfaction with nursing services. According to the WHO [14], safe, comfortable, and patient-centered healthcare environments are essential components of healthcare quality that contribute to a positive patient experience.

The regression analysis also found that non-surgical patients were significantly more satisfied than surgical patients ($\beta = 0.21$, $p = 0.003$). This finding is explained by the greater physical and psychological burden experienced by the surgical group. Patients undergoing surgery often suffer from postoperative pain, anxiety, limited mobility, fear of complications, and increased dependence on nursing care, all of which may elevate expectations of healthcare services. If pain is inadequately managed, communication is poor, or proper postoperative support is not provided, satisfaction levels may decrease even when clinical care is technically appropriate. Karaca and Durna [4] and Mulugeta et al. [13] observed similar patterns, where surgical patients were consistently less satisfied than medical patients across various studies. Moreover, Sideeq [19] reported that ineffective pain management and communication processes after surgery are important factors contributing to dissatisfaction among surgical patients in Iraqi hospitals. These results underscore the importance of enhancing perioperative nursing care, education, and postoperative support to increase satisfaction in surgical units.

Another significant predictor identified in the present study was prior hospitalization ($\beta = 0.16$, $p = 0.013$). Patients who had previously been hospitalized reported significantly higher satisfaction than first-time admissions. This may be attributed to increased familiarity with hospital protocols, improved understanding of treatment, and greater confidence in healthcare providers. Patients with prior hospital experience may have more reasonable expectations of nursing care, which helps minimize uncertainty and enhances communication with care providers. Hosseini et al. [15] and Al-Hammouri et al. [11] made similar observations in their conclusions, noting that patients' previous experience with healthcare facilities enhances their trust in healthcare professionals and perception of nursing care quality. However, the quality of prior experiences may moderate the relationship between repeat hospitalization and patient satisfaction [13].

Age was also identified as a positive significant predictor of patient satisfaction ($\beta = 0.14$, $p = 0.023$). Older patients tended to be more satisfied with nursing care than younger patients. Research from various countries has indicated that older adults are generally more satisfied with healthcare services, as they tend to have more realistic expectations, greater appreciation for healthcare professionals, and higher trust in nurses. In contrast, younger patients often expect more detailed communication, rapid responses, greater participation in clinical decision-making, and easier access to health information, resulting in more critical evaluations of healthcare services [4, 12]. The positive link between age and satisfaction established in the current study

corroborates earlier research suggesting that patient age affects perceptions of quality and expectations.

The only significant negative predictor of satisfaction was length of hospital stay ($\beta = -0.19$, $p = 0.006$). Patients who spent more time in the hospital were significantly less satisfied than those with shorter stays. Prolonged hospitalization often leads to increased physical discomfort, financial burden, and disruption of family and social life. Additionally, patients with longer stays may experience delayed care, communication gaps, environmental inconveniences, and inconsistencies in service delivery, all of which negatively affect perceptions of nursing care. Hosseini et al. [15] and Mulugeta et al. [13] disclosed similar findings, indicating that prolonged hospitalization consistently affects patient satisfaction negatively across different healthcare settings. These findings emphasize the importance of effective discharge planning, care coordination, and continuous monitoring of patients requiring extended hospital stays.

The results of the regression analysis indicate that organizational and hospitalization-related characteristics were stronger influences on patient satisfaction than demographic characteristics. Patients' perceptions of nursing care were influenced more by environmental conditions, past healthcare experiences, clinical conditions, and duration of hospitalization than by personal demographic variables. These results align with patient-centered care principles, which hold that patient satisfaction is shaped by a combination of nursing performance, healthcare settings, communication, and organizational processes rather than individual patient characteristics alone [11,14]. Therefore, interventions aimed at enhancing the ward environment, strengthening therapeutic communication, improving postoperative nursing support, and minimizing unnecessary hospitalization should be prioritized by hospital administrators and nursing managers to further enhance patient satisfaction and quality of care.

Recommendations

In light of the current study's findings, the following recommendations are offered:

Routine Assessment: Integrate routine assessment of patient satisfaction using standardized and validated instruments such as the Patient Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ) as part of the hospital's continuous quality improvement program.

Nursing Education and Training: Provide continuous professional education and training focused on improving communication skills, empathy, shared decision-making, and individualized care planning to strengthen patient-centered nursing care.

Hospital Environment: Improve public wards by creating more private spaces, reducing environmental noise, enhancing cleanliness, and increasing comfort to improve the hospital care environment.

Perioperative Nursing Care: Enhance perioperative nursing care through preoperative education, postoperative pain management, emotional support, and early rehabilitation to improve satisfaction among surgical patients.

Discharge Planning: Plan discharges efficiently to avoid unnecessary prolonged hospitalization.

Implement multidisciplinary care coordination and evidence-based clinical pathways to achieve better patient outcomes and satisfaction.

Orientation Programs: Develop orientation programs for newly admitted patients to familiarize them with hospital routines, available services, patient rights, and expected nursing care, thereby reducing anxiety and enhancing the hospitalization experience.

Continuous Professional Development: Ensure that nurses undergo continuous training in patient-centered communication, quality improvement, evidence-based practice, and patient safety.

Performance Evaluation: Incorporate patient satisfaction indicators into hospital performance evaluation systems, such as the balanced scorecard, to help nursing managers and policymakers track service quality and identify areas for improvement.

Multicenter Studies: Conduct multicenter studies across different regions of Iraq to improve the generalizability of findings and examine regional differences in patient satisfaction with nursing care.

Future Research: Explore the impact of other factors on patient satisfaction, such as nurse staffing levels, nurses' work environment, workload, leadership style, health literacy, patient expectations, cultural factors, and nursing-sensitive quality indicators. Longitudinal or mixed-method research designs are recommended to optimally study these factors.

Implications

Implications for Nursing Practice: The results emphasize the need for evidence-based nursing

interventions that improve therapeutic communication, patient-centered care, ward environments, and postoperative nursing support. Hospitals must integrate routine assessments of patient satisfaction into quality improvement programs to identify areas needing enhancement and optimize nursing care outcomes. To improve the quality of nursing care, it is necessary to maintain high professional standards alongside an optimal hospital environment, enhanced therapeutic nurse–patient communication, and patient-centered care. Nursing administrators should focus on enhancing privacy, avoiding unnecessary hospitalization, improving perioperative care, and continuously monitoring patient experiences. Integrating patient satisfaction into routine quality assurance programs can facilitate evidence-based decision-making and enhance healthcare quality and patient outcomes in Iraqi hospitals.

Conclusion

According to the current study, hospitalized patients reported a high overall level of satisfaction with the quality of nursing care, with an overall mean score of 4.18 ± 0.46. This score corresponds to 83.6% of the maximum attainable score, indicating that the nursing care provided in the participating hospitals was perceived positively. More than nine out of ten participants rated their satisfaction as high or very high.

The study determined that the Patient Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ) is an appropriate and reliable instrument for assessing patient satisfaction in an Iraqi hospital setting. The tool demonstrated good psychometric performance, with a Cronbach's alpha coefficient of 0.953.

Comparative analyses revealed that patient satisfaction differed significantly according to several clinical characteristics. Patients admitted to private rooms, those in non-surgical wards, and those with a history of prior hospitalization reported significantly higher satisfaction levels. In contrast, gender was not significantly associated with satisfaction. Overall, organizational and healthcare-related factors had a greater impact on patient satisfaction than demographic characteristics alone.

Results from the multiple linear regression analysis showed that private room accommodation, non-surgical admission, previous hospitalization, and older age were significant positive predictors of patient satisfaction. Conversely, longer hospital stay was a significant negative predictor. The final model accounted for approximately 45% of the variance in patient satisfaction, highlighting the multidimensionality of patients' perceptions of nursing care quality.

These findings suggest that environmental, organizational, and clinical factors are more effective predictors of patient satisfaction than patient demographics. Regular measurement of patient experiences using a validated instrument such as the PSNCQQ can provide essential evidence for evaluating nursing performance and supporting quality improvement initiatives in hospitals.

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Conflict of Interest Disclosures

The authors declare that they have no conflict of interest.

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Authors' Contributions

All authors contributed equally in this research.

Ethical Statement

Before the collection of study data official organizational permissions were obtained. After many procedures, these agreements have been reached,

including the approval of the study by the University of Babylon College of Nursing Council. Certificate from the Ethics Committee of the College of Nursing University of Babylon in September 2025 with code 52. Before the study takes place, each patient gives their consent. Participants are informed that participation is voluntarily and all their information will remain confidential and only used for research purposes

Declaration of Generative AI and AI-assisted technologies

None.

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