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Nursing Service Quality and Patient Satisfaction in Leading Multispecialty Hospitals:Evidence From Bengaluru, India

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Abstract: Nursing services constitute a central component of hospital care because nurses maintain continuous contact with patients and directly influence their perceptions of safety, responsiveness, dignity, and emotional support. This study examines the contribution of nursing services to patient satisfaction in selected leading multispecialty hospitals in Bengaluru, India. A quantitative, cross-sectional research design was adopted. Data were collected from 440 patients who had received sufficient inpatient care to evaluate nursing services. Nursing service quality was assessed through five attributes: timely supervision of medication, courteous behaviour, prompt response, appropriate treatment of visitors, and helpfulness in addressing patients' needs. Patient satisfaction was treated as the dependent variable. Multiple linear regression was employed to determine the collective and individual contributions of nursing-service attributes. The model explained approximately 50.8% of the variance in patient satisfaction. Timely supervision of medication emerged as the strongest predictor ($\beta = .289$, $p < .001$), followed by nurses' courteous behaviour ($\beta = .211$, $p < .001$) and promptness ($\beta = .210$, $p < .001$). Treatment of visitors ($\beta = .005$, $p = .860$) and perceived helpfulness ($\beta = .007$, $p = .810$) did not make statistically significant unique contributions. The findings show that patients attach particular importance to dependable medication practices, respectful interpersonal conduct, and rapid attention to their needs. Hospital administrators should therefore combine clinical-process monitoring with communication and responsiveness training. The study extends patient-experience research by providing evidence from the rapidly expanding private and multispecialty hospital environment of Bengaluru.

Keywords: Nursing service quality; patient satisfaction; medication supervision; nurse responsiveness; courteous behaviour; hospital service quality; Bengaluru.

1. Introduction

Healthcare quality is no longer evaluated exclusively through clinical outcomes. Patients also judge hospitals through the manner in which care is delivered, including whether services are timely, respectful, safe, responsive, and centred on individual needs. The World Health Organization defines quality healthcare as care that increases the likelihood of desired health outcomes and is consistent with professional knowledge. It also identifies safety, effectiveness, timeliness, equity, integration, and people-centredness as essential characteristics of quality health services *(World Health Organization, 2025)*.

Within hospitals, nurses occupy a distinctive position because they remain in sustained contact with patients throughout the care process. Their responsibilities include medication administration, clinical observation, coordination of treatment, communication, emotional reassurance, patient education, and assistance with daily needs. Consequently, patients' assessments of a hospital are frequently shaped by their interactions with nursing personnel. Even where medical treatment is technically successful, delayed responses, inadequate communication, discourteous conduct, or medication-related concerns can negatively affect the overall care experience.

Patient satisfaction is both an outcome of healthcare delivery and an indicator of service quality. It represents the degree to which patients believe that the care they received met their expectations, preferences, and perceived needs. Although satisfaction is subjective, it has practical importance. Satisfied patients may demonstrate greater trust in healthcare professionals, better adherence to treatment, stronger willingness to

recommend the hospital, and greater continuity of service use. Patient feedback can therefore help hospitals identify service gaps that may not be captured through conventional clinical indicators.

The relationship between nursing services and satisfaction can be understood through Donabedian's structure–process–outcome framework. Hospital resources and staffing represent structural conditions; medication administration, responsiveness, courtesy, and communication constitute care processes; and patient satisfaction is an important service outcome. The framework suggests that well-organised and patient-centred nursing processes should generate more favourable patient experiences (Donabedian, 1988).

Medication supervision is particularly important because patients associate timely medication with professional competence, safety, and reliability. Medication-related harm represents a substantial component of preventable harm in healthcare, making accurate and timely supervision important to both objective safety and subjective confidence *(World Health Organization, 2023)*. Similarly, prompt responses communicate that patients' discomfort and concerns are recognized. Courtesy protects dignity and encourages patients to communicate openly about symptoms and care requirements.

Bengaluru has a diverse and rapidly developing healthcare sector comprising corporate, private, charitable, teaching, and specialized hospitals. Patients attending leading hospitals may have high expectations regarding clinical competence as well as interpersonal and service performance. Nevertheless, evidence identifying the specific nursing attributes that most strongly shape satisfaction in this setting remains limited. Aggregating nursing service into a single score may also conceal the fact that some attributes are more influential than others.

Accordingly, this study examines whether timely medication supervision, courtesy, promptness, treatment of visitors, and helpfulness predict patient satisfaction in selected leading hospitals in Bengaluru. The study tests the following hypothesis:

2. Literature Review

2.1. Patient satisfaction as a healthcare-quality outcome

Patient satisfaction is a multidimensional evaluation arising from comparisons between expected and experienced healthcare. It is influenced by clinical competence, accessibility, physical facilities, communication, waiting time, staff conduct, responsiveness, cost, and continuity of care. Because expectations vary across patients and settings, satisfaction should not be interpreted as a direct substitute for clinical quality. Nevertheless, it provides valuable information about whether care is delivered in a manner that patients consider acceptable and respectful.

Donabedian's (1988) framework positions patient satisfaction as an outcome influenced by the structures and processes of healthcare. Within this perspective, staffing arrangements, training, equipment, and organizational policies create the conditions under which nurses work, whereas communication, medication administration, responsiveness, and interpersonal behavior constitute observable care processes. Patient satisfaction reflects, at least partly, patients' evaluations of those processes.

Healthcare service quality has also been examined using the SERVQUAL framework, which emphasizes reliability, responsiveness, assurance, empathy, and tangibility *(Parasuraman et al., 1988)*. Although originally developed for general services, these dimensions remain relevant to nursing. Timely medication reflects reliability, prompt attention represents responsiveness, courtesy contributes to assurance, and helpfulness reflects empathy. However, healthcare requires context-specific application because patients may possess limited technical knowledge and therefore rely strongly on interpersonal and process-related signals when judging quality.

2.2. Nursing services and patient satisfaction

Nursing care combines technical competence with relational and emotional dimensions. Patients may not be able to evaluate the technical accuracy of complex medical decisions, but they can observe whether nurses arrive on time, explain procedures, listen attentively, respond to requests, maintain privacy, and behave respectfully. These observable encounters become signals through which patients assess the dependability of the hospital.

Evidence consistently associates positive nursing experiences with higher overall hospital ratings and willingness to recommend the institution. *Kutney-Lee et al. (2009)* found that nursing work environments were associated with patient assessments of healthcare quality. Similarly, *Aiken et al. (2012)* demonstrated that organizational and staffing conditions affecting nurses were connected to care quality and patient outcomes. These findings indicate that patient satisfaction cannot be separated from the conditions under which nursing care is organized and delivered.

Recent research continues to emphasize responsiveness and communication. *Ataro et al. (2024)* reported dissatisfaction where nurses were perceived as insufficiently willing to listen and respond to patients' concerns. *Kwame and Petrucka (2021)* similarly identified communication as a central element of nurse–patient interaction and patient-centered care. Communication helps patients understand treatment, reduces uncertainty, facilitates disclosure of concerns, and strengthens confidence in caregivers.

2.3. Timely supervision of medication

Medication administration is among the most visible and clinically consequential nursing responsibilities. Patients frequently organize their expectations of hospital routines around prescribed medication schedules. When medications are administered and supervised on time, patients are likely to perceive the nursing system as organized and dependable. Delays may create anxiety, particularly among patients with pain, chronic disease, postoperative needs, or time-sensitive therapies.

Medication supervision also carries a safety dimension. The WHO identifies medication-related incidents as an important

source of avoidable patient harm. Timely administration, verification, documentation, and observation for adverse reactions therefore contribute to clinical safety and patient confidence. Patients may interpret reliability in medication routines as evidence of broader professional competence. Consequently, timely medication supervision is expected to exert a strong positive influence on satisfaction.

2.4. Courtesy and respectful behavior

Courtesy refers to politeness, respect, patience, and consideration during interaction. In healthcare, it extends beyond conventional customer service because patients may be physically vulnerable, emotionally distressed, or dependent on staff. Courteous behavior preserves dignity and reduces the social distance between patients and caregivers.

Respectful communication encourages to ask questions and communicate symptoms without fear of dismissal. It also improves the perceived fairness and humanity of care. The relationship is especially important in linguistically and culturally diverse urban environments such as Bengaluru, where patients may differ in language, education, socioeconomic status, and familiarity with formal healthcare systems.

Trust is strengthened when nurses demonstrate competence alongside respectful and humane conduct. Research concerning patient trust has highlighted communication, professional behavior, accessibility, responsibility, and interpersonal interaction as influential nursing characteristics *(Bahari et al., 2024).* Courtesy is therefore expected to contribute positively to satisfaction even after other nursing-service attributes are considered.

2.5. Promptness and responsiveness

Promptness represents the speed and appropriateness with which nurses respond to patients' calls, discomfort, questions, and requests. Responsiveness is particularly salient because patients often lack control over the timing of care. An unanswered call or unexplained delay may produce anxiety and communicate indifference, whereas a prompt response reassures patients that their needs are recognized.

Responsiveness should not be understood solely as speed. A meaningful response may include acknowledging a request, explaining a delay, assessing urgency, or coordinating with another professional. Patient-centered care requires services to be organized around individuals' needs and preferences and to promote their participation in care *(World Health Organization, n.d.).* Thus, both operational efficiency and interpersonal attentiveness influence perceived promptness.

2.6. Treatment of visitors and helpfulness

Visitors and family caregivers often provide emotional support, assist with communication, and participate in post-discharge care. Respectful treatment of visitors can therefore contribute to the patient's overall hospital experience. Nevertheless, its direct contribution may be weaker than medication supervision or prompt attention because it is more peripheral to the patient's immediate clinical needs. Visitation policies, infection-control requirements, ward restrictions, and the frequency of family contact may also affect how patients evaluate this attribute.

Helpfulness is conceptually important but potentially broad. Patients may interpret it as physical assistance, emotional support, information provision, navigation, or general willingness to help. If the measurement statement does not specify the form of help, respondents may interpret it differently. Moreover, its statistical contribution may overlap with courtesy and promptness. Once these more specific attributes enter a regression model, general helpfulness may provide little additional explanatory power.

H1: Nursing services positively and significantly influence patient satisfaction.

2.7. Research gap

Previous studies establish that nursing care is associated with patient satisfaction, but three gaps remain. First, many studies employ an aggregate nursing-quality score and do not determine which particular nursing behaviors have the strongest influence. Second, findings from one healthcare system cannot automatically be generalized to the competitive and culturally diverse hospital environment of Bengaluru. Third, relational attributes such as courtesy and helpfulness are often combined, despite their potentially different contributions.

This study addresses these limitations by simultaneously examining five specific nursing-service attributes among 440 hospital patients. The analysis distinguishes unique effects of medication supervision, courtesy, promptness, treatment of visitors, and helpfulness on patient satisfaction.

3. Materials and Methods

3.1. Research design and setting

The study adopted a quantitative, explanatory, and cross-sectional design. It was conducted in selected leading multi-specialty hospitals in Bengaluru, Karnataka, India. For reporting purposes, the basis on which hospitals were classified as "leading" should be stated explicitly, such as accreditation status, bed capacity, range of specialties, patient volume, or recognized institutional ranking.

3.2. Population and sample

The target population consisted of adult patients receiving inpatient services in the selected hospitals. A final sample of 440 usable responses was included. Patients were eligible when they:

- were at least 18 years old;
- had received nursing care for a sufficient period to evaluate the service;
- were clinically stable at the time of participation; and
- voluntarily provided informed consent.

Patients who were critically ill, unable to communicate, cogni-

tively unable to provide informed responses, or unwilling to participate were excluded. Where a formal sampling frame was unavailable, respondents could be selected through proportionate hospital allocation followed by systematic or consecutive sampling. The final manuscript must report the sampling procedure actually used.

3.3. Research instrument

Data were collected through a structured questionnaire. Nursing service quality was measured using five statements:

- Nurses supervised medication administration on time.
- Nurses behaved courteously toward patients.
- Nurses responded promptly to patient needs.
- Nurses treated patients' visitors respectfully.
- Nurses were helpful in addressing patient needs.

Responses were recorded on a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Patient satisfaction was measured through the study's designated satisfaction scale using the same response format. The questionnaire should be reviewed by experts in hospital administration, nursing, and research methodology to establish content validity. A pilot study should also be reported, together with reliability statistics such as Cronbach's alpha or composite reliability.

The fifth statement was revised from the incomplete expression "nurse was helpful according" to "nurses were helpful in addressing patient needs." This clearer wording should be used in the final questionnaire and manuscript.

3.4. Data-collection procedure

Eligible patients were approached after they had sufficient exposure to hospital nursing services, preferably close to discharge. The purpose of the research was explained, and participation was kept voluntary. Respondents were assured that their decision would not affect their treatment and that individual responses would remain confidential. Questionnaires were completed by patients independently or with neutral assistance where required.

3.5. Statistical analysis

Data were screened for incomplete responses, outliers, coding errors, and violations of regression assumptions. Descriptive statistics were used to summarize participant characteristics and study variables. Reliability and validity tests were conducted before hypothesis testing.

Multiple linear regression was used because the study contained five nursing-service predictors and one continuous patient-satisfaction outcome. The estimated equation was:

$$\mathrm{PS} = \beta_0 + \beta_1 \mathrm{MS} + \beta_2 \mathrm{CB} + \beta_3 \mathrm{PR} + \beta_4 \mathrm{TV} + \beta_5 \mathrm{HP} + \varepsilon \quad (1)$$

where *PS*denotes patient satisfaction, *MS*timely medication supervision, *CB*courteous behaviour, *PR*promptness, *TV*treatment of visitors, and *HP*helpfulness. Statistical significance was assessed at p<.05. Multicollinearity should be examined through variance inflation factors and tolerance values, while normality, linearity, homoscedasticity, and independence of residuals should also be verified.

3.6. Ethical considerations

Participation was voluntary and based on informed consent. No personally identifiable patient information should be included in the dataset. The final manuscript must provide the actual name of the approving institutional ethics committee, approval number, and approval date. These details should not be invented or omitted when submitting the paper.

4. Analysis and Interpretation

Nursing services are a key component for enhancing patient satisfaction. A total of five statements are considered in the Nursing services section of the study.

- On-time supervision of medication
- Nurse was courteous in behavior
- Nurse was prompt
- Treatment of visitors is good
- Nurse was helpful

As the statements of Nursing services (independent variables) are multiple and an outcome (dependent) variable is single, multiple regression analysis is used to test the prediction of patient satisfaction through Nursing services. So, the hypothesis is framed as

H1: Nursing services positively influence Patient satisfaction

Here, statements of Nursing services are treated as an independent variable, and Patient satisfaction is dependent. The results of the multiple linear regression are presented below.

4.1. Model estimation

The results of the regression model summary are presented in Table 1.

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.712[a]	.508	.504	.808

a. Predictors: (Constant), MS8, MS4, MS1, MS7, MS5, MS6, MS2, MS3

R value explains the quality of the prediction of the independent variables about the dependent variable. The resulting R value (0.712) signifies the positive relationship between Nursing services and Patient satisfaction. R2 value describes the explanatory power of the independent variables about the dependent variable. It reports the variance that results in the dependent variable due to all the predictors of the model. The resulting R2 value of 0.508 indicates that nearly 50.8% (0.508 × 100) of patient satisfaction (dependent variable) in the model was derived from Nursing services (independent) variables.

4.2. Model Validity and Usefulness

The results of the regression model ANOVA are presented in Table 2.

Table 2: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	801.917	8	100.240	153.409	.000[b]
	Residual	778.213	1191	.653		
	Total	1580.130	1199			

a. Dependent Variable: PS
b. Predictors: (Constant), MS8, MS4, MS1, MS7, MS5, MS6, MS2, MS3

F and significance values in the regression model describe the overall model significance and model fit. The F-value of 153.409 is high (not close to 1), and the p-value of 0.000 is less than 0.05, indicating that the regression model for predicting patient satisfaction through Nursing services is found to fit. It can be declared that the regression model can be used to predict Patient satisfaction in the study context.

4.3. Prediction

Each factor of Nursing services contributes to predicting Patient satisfaction with hospitals, as stated in the coefficient table below.

Table 3: Regression coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.08	0.12		8.98	0.00
Ontime supervision of medication	0.281	0.032	0.289	8.863	0.00
Nurse was courteous in behaviour	0.209	0.037	0.211	5.667	0.00
Nurse was prompt	0.217	0.038	0.21	5.756	0.00
Treatment of visitors is good	0.008	0.042	0.005	0.18	0.86
Nurse was helpful according	0.011	0.045	0.007	0.243	0.81

a. Dependent Variable: PS

From Table 3, it is found that all three variables under Nursing services are significant. The p-values for the variables, academic purpose (0.000), general purpose (0.001), and curricular purpose (0.006) are less than 0.05. Hence, these three variables are contributing to the Patient satisfaction of the street vendors.

To find out the strength of the prediction of these three variables, the concerned standardized regression coefficient beta values in Table 3 are examined. The following figure depicts the overall contribution of all these three factors, such as academic purpose, general purpose, and curricular purpose, towards patient satisfaction.

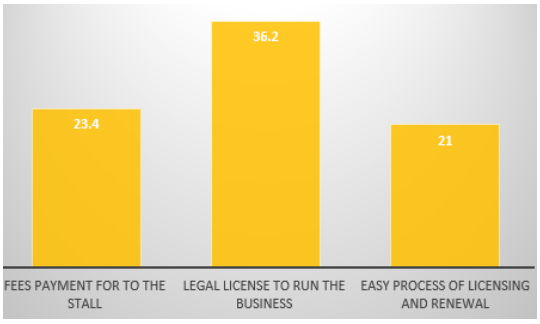

Figure 1: Nursing services contribution in patient satisfaction

The beta values for academic purpose (0.159), general purpose (0.151), and curricular purpose (0.110) are proven as significant contributors towards street vendors' Patient satisfaction. It means that a 100% improvement in the academic purpose, general purpose, and curricular purpose increases patient satisfaction by 15.9%, 15.1%, and 11%, respectively.

5. Theoretical And Managerial Implications

5.1. Theoretical implications

The findings support the process–outcome relationship proposed by Donabedian's framework. Nursing processes that patients can directly observe—particularly medication supervision, respectful behavior, and prompt response—are closely associated with satisfaction outcomes. The results also align with the reliability, responsiveness, and assurance dimensions of service-quality theory.

The differing coefficients show that nursing service quality is not a uniform construct. Task reliability, relational conduct, and response speed contribute differently to satisfaction. Treating nursing services as a single composite score may therefore conceal managerially meaningful distinctions. The non significant effects of visitor treatment and general helpfulness do not imply that these activities are unimportant. Rather, they did not explain additional variation in satisfaction after medication supervision, courtesy, and promptness were controlled. Their effects may be indirect, context-dependent, or statistically shared with more specific interpersonal attributes.

5.2. Managerial implications

Hospital administrators should give priority to three areas:

- Medication reliability: Introduce medication-round monitoring, electronic alerts, clear documentation, and escalation procedures for delayed doses.
- Courtesy and communication: Provide continuous training in respectful communication, active listening, cultural sensitivity, empathy, and conflict management.
- Responsiveness: Monitor nurse-call response times, review staffing during peak periods, and establish protocols for acknowledging requests even when immediate resolution is impossible.

Patient feedback systems should assess individual nursing behaviours instead of relying only on an overall satisfaction question. Nursing dashboards can include medication timeliness, call-response time, communication ratings, complaints, and compliments. Managers should use these indicators for process improvement rather than punitive individual comparisons.

Visitor-related practices should remain respectful and transparent, even though visitor treatment was not a significant predictor in this model. Hospitals should clearly communicate visiting rules and explain restrictions. The broad helpfulness item should be refined in future surveys by separating informational, physical, emotional, and navigational assistance.

6. Conclusion

The study demonstrates that nursing services make a substantial contribution to patient satisfaction in selected leading multispecialty hospitals in Bengaluru. Timely medication supervision emerged as the most influential nursing attribute, followed by courteous behavior and prompt response. These findings suggest that patients value a combination of technical dependability and humane interpersonal care.

Treatment of visitors and general helpfulness did not produce significant unique effects. This may reflect overlap with courtesy and responsiveness or the broad wording of the helpfulness measure. Hospitals should not discontinue attention to these areas; instead, they should develop more precise measures capable of capturing their specific effects.

The study is limited by its cross-sectional design, reliance on self-reported perceptions, and concentration on selected Bengaluru hospitals. Causal conclusions should therefore be made cautiously. Future research could employ longitudinal designs, compare public and private hospitals, examine differences across clinical departments, and test mediators such as patient trust, perceived safety, and nurse–patient communication. Despite these limitations, the study provides clear evidence that reliable medication supervision, respectful behavior, and responsiveness are central to improving the patient experience.

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