

Assessing Patient-Perceived Healthcare Service Quality in Tertiary Care Government Hospitals in India: A SERVQUAL-Based Cross-Sectional Study

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Abstract

Quality assessment in healthcare has become increasingly significant with the recent surge in the number of healthcare providers. It is essential for hospital managers to assess consumer perspectives and identify service quality gaps so that any deficiencies in service delivery can be determined and addressed. This descriptive cross-sectional study was conducted across seven Indian cities (Delhi, Kolkata, Punjab, Lucknow, Vishakhapatnam, Chandigarh, and Kochi) to evaluate the service quality provided to patients in tertiary care government hospitals, using the SERVQUAL instrument to compare patient expectations against actual experiences. A total of 1,002 patients were surveyed across five service quality dimensions — Reliability, Responsiveness, Tangibles, Assurance, and Empathy. Paired-sample *t*-tests revealed a statistically significant gap between expectation and experience scores across all five dimensions ($p < 0.0001$), with experience scores consistently and significantly exceeding expectation scores, indicating substantial patient dissatisfaction. The largest gap was observed in the tangible dimension, followed by assurance and reliability. The findings indicate a significant, systemic healthcare service quality gap in tertiary government hospitals across India, underscoring the need for focused interventions by hospital management and government policymakers to strengthen infrastructure, staffing, training, and patient feedback mechanisms.

Keywords: SERVQUAL; Patient Satisfaction; Service Quality; Tertiary Government Hospitals; Healthcare Quality Gap

1. INTRODUCTION

Effectiveness of healthcare delivery depends primarily on patient-centered outcomes. It is commonly accepted that patients' wellbeing and quality of life, along with their satisfaction with quality service and care, are as important as clinical health measures (Counte, 2007; Mosadeghrad, 2014). Healthcare organizations function in a highly competitive environment, and patient satisfaction is one of the most important factors in gaining and maintaining market share. Major stakeholders across the healthcare system use patient satisfaction data as a key input in decision-making (Counte, 2007; Schuster, McGlynn, & Brook, 1998).

Since the 1990s, "accountability" has gained significant prominence in healthcare, compelling providers to demonstrate acceptable levels of patient satisfaction. Standard-setting organizations, institutions, and growing consumer awareness have positioned patient satisfaction (PS) as one of the key indicators of quality healthcare, encouraging providers to improve their standards accordingly (Aday & Walker, 1996). Well-managed care-providing organizations typically undergo formal accreditation processes that require the measurement of patient satisfaction.

Judging the appropriateness of medical services — whether a prescription, clinical procedure, or diagnostic test — occurs at every tier of the

healthcare system, from payers deciding on the provision of new medical technologies to clinicians deciding on individual patient investigations (Qadri et al., 2012). Researchers have closely examined this appropriateness in the context of medical care delivery, with healthcare delivery systems and policymakers striving to identify and reduce unnecessary or undesired services and their associated costs.

The literature conceptualizes patient satisfaction as significant in two respects: as an outcome measure important in its own right, and as a determinant of further medical outcomes (Nekoei-Moghadam & Amiresmaili, 2011). Measurement of patient satisfaction plays a critical role in the growing shift toward accountability among medical care providers (Dickson et al., 2008). Traditional and outdated medical processes, and their impact on the quality of care, have historically driven satisfaction measurement efforts by both private and government hospitals, as well as large medical practices — partly to fulfil accreditation requirements, and partly because some medical plans tie satisfaction scores to financial incentives for primary care providers (Thi, Briancon, Empereur, & Guillemin, 2002).

As hospitals in both government and private sectors face increasing pressure to improve outcomes, enhance patient safety, and control treatment costs, greater attention is being paid to strengthening the role of patient satisfaction within the broader framework of medical care quality (Zarei, Arab, Froushani, Rashidian, & Tabatabaei, 2012). However, inconsistency in measurement tools remains a hindrance to establishing patient satisfaction as a reliable component of the overall quality-of-care equation (Owlia, 1996). Data on patient satisfaction has been collected by various stakeholders — medical plans, hospitals, and individual practices — using differing methods and at differing levels of the healthcare system, and considerable effort has been directed toward bringing uniformity and consistency to patient satisfaction measurement across both private and

government healthcare sectors (Cheng, Yang, & Chiang, 2003).

Given the scale and diversity of India's public healthcare system, and the persistent gaps identified in the literature regarding standardized quality assessment, there is a clear need to systematically evaluate service quality in Indian tertiary care government hospitals from the patient's perspective. This study therefore applies the SERVQUAL framework (Parasuraman, Zeithaml, & Berry, 1988) — a validated multidimensional instrument for measuring perceived service quality — to assess the gap between patient expectations and experiences across tertiary care government hospitals in seven major Indian cities, with the aim of informing targeted quality-improvement interventions.

2. MATERIALS AND METHODS

Study Design

A descriptive-exploratory research design was adopted to assess service quality gaps in tertiary care government hospitals, using the SERVQUAL framework to compare patient expectations against actual service experiences.

Study Setting

The study was conducted across seven geographically diverse clusters in India: Delhi, Kolkata, various cities of Punjab, Lucknow, Vishakhapatnam, Chandigarh, and Kochi. Only tertiary care government hospitals were included; primary and secondary care government facilities, as well as private hospitals, were excluded. None of the included hospitals held NABH or JCI accreditation.

Study Population

Inclusion criteria: Indoor and outdoor patients of tertiary care government hospitals, all age groups, both genders.

Exclusion criteria: Patients from primary/secondary care government hospitals, private hospitals, and accredited (NABH/JCI) institutions.

Sample Size

Sample size was calculated using the standard formula for estimating sample size in social science research (Kothari, 2004):

$$N = Z^2 \times p(1-p) / e^2$$

where $Z = 1.96$ (95% confidence interval), $p = 0.78$ (standard deviation), and $e =$ margin of error (0.03). This yielded a minimum required sample size of 732. A total of 1,002 participants were enrolled, exceeding the calculated minimum.

Study Duration

The study was conducted between 2016 and 2019, with primary data collection carried out from 2017 to 2018.

Sampling Technique

A non-probability convenience sampling method was employed to recruit participants from the study sites (Kothari, 2004).

Data Collection Tool

Two structured, closed-ended questionnaires were developed based on the five service quality dimensions of the SERVQUAL model — Tangibles, Reliability, Responsiveness, Assurance, and Empathy (Parasuraman et al., 1988):

- **Expectation questionnaire** — 37 items measuring patients' expected standard of service
- **Experience questionnaire** — 44 items measuring patients' actual perceived service

Corresponding items across the two questionnaires were paired (e.g., an expectation item R1a matched to its experience counterpart R1b) to enable direct gap analysis within each dimension. Both instruments used a 5-point Likert-type scale (1 = Strongly Disagree to 5 = Strongly Agree).

Instrument Development

1. **Preliminary questionnaire design** — Initial expectation and experience instruments were

drafted using the five SERVQUAL dimensions (Parasuraman et al., 1988).

2. **Pilot study** — Conducted to test the reliability and validity of the preliminary instruments.
3. **Reliability testing** — Internal consistency was assessed using Cronbach's Alpha (SPSS).
4. **Validity testing** — Content and face validity were established through expert panel review.
5. **Factor analysis** — Performed to reduce redundant items and consolidate related items.
6. **Final instrument** — Resulted in the 37-item expectation and 44-item experience questionnaires used for data collection.

Data Collection Procedure

Data were collected via face-to-face interviews conducted by trained interns/research assistants from the respective hospital departments, following orientation on ethical data-collection practices and the questionnaire content. Each interview lasted approximately 15–20 minutes.

Statistical Analysis

Data were analyzed using SPSS software (version 21.0). The analysis plan included:

- Paired-sample *t*-tests to compare total and group-wise expectation–experience scores
- Sub-group analysis for each of the seven city clusters
- Significance level set at $\alpha = 0.05$
- Mean, standard deviation, and *p*-values reported for each SERVQUAL dimension

3. RESULTS AND DISCUSSION

3.1 Overall Service Quality Scores

A total of 1,002 patients participated in the study. Paired-sample *t*-tests were used to compare expectation and experience scores across the five SERVQUAL dimensions and the total service quality score.

Table 1. Overall Expectation and Experience Scores (N = 1002)

Dimension	Expectation Mean (SD)	Experience Mean (SD)	p-value
Reliability	9.47 (2.93)	10.83 (3.01)	<0.0001
Responsiveness	12.81 (3.89)	14.81 (4.33)	<0.0001
Tangibles	14.36 (4.27)	17.25 (4.43)	<0.0001
Assurance	9.81 (3.12)	12.47 (3.93)	<0.0001
Empathy	10.89 (3.63)	12.48 (3.67)	<0.0001
Total Score	57.34 (15.99)	67.83 (17.56)	<0.0001

The overall mean expectation score (57.34 ± 15.99) was significantly lower than the overall mean experience score (67.83 ± 17.56), $p < 0.0001$. Since higher scores indicate a greater perceived gap (lower satisfaction), this significant difference indicates that patients' expectations of service quality were **not met** by the actual services experienced at tertiary care government hospitals — i.e., a statistically significant service quality gap existed across all dimensions.

3.2 Dimension-Wise Hypothesis Testing

Hypothesis 1 — Reliability

- H_{01} : No significant difference between expectation and experience in reliability.
- Result: Mean experience (10.83 ± 3.01) was significantly higher than mean expectation (9.47 ± 2.93), $p < 0.0001$. **H_{01} rejected.**
- Patients expected cashless services, minimal waiting time, and staff who inspired confidence and handled admissions and records accurately, but reported insufficient staff and waiting periods.

Hypothesis 2 — Responsiveness

- H_{02} : No significant difference between expectation and experience in responsiveness.
- Result: Experience (14.81 ± 4.33) significantly exceeded expectation (12.81 ± 3.89), $p < 0.0001$. **H_{02} rejected.**
- Patients expected prompt, proactive staff with clear health information and a feedback mechanism, but reported staff shortages, poor

communication, and lack of a grievance system.

Hypothesis 3 — Tangibles

- H_{03} : No significant difference between expectation and experience in tangibles.
- Result: Experience (17.25 ± 4.43) significantly exceeded expectation (14.36 ± 4.27), $p < 0.0001$. **H_{03} rejected.**
- Patients expected clean, well-signposted, well-ventilated facilities with hygienic food and adequate parking, but reported unhygienic wards/toilets, inadequate water supply, poor signage, and insufficient parking.

Hypothesis 4 — Assurance

- H_{04} : No significant difference between expectation and experience in assurance.
- Result: Experience (12.47 ± 3.93) significantly exceeded expectation (9.81 ± 3.12), $p < 0.0001$. **H_{04} rejected.**
- Patients expected prompt emergency attention, skilled diagnosis, accurate lab reports, and reassurance, but felt emergency cases were not prioritized and procedures were poorly explained.

Hypothesis 5 — Empathy

- H_{05} : No significant difference between expectation and experience in empathy.
- Result: Experience (12.48 ± 3.67) significantly exceeded expectation (10.89 ± 3.63), $p < 0.0001$. **H_{05} rejected.**
- Patients expected caring, approachable staff and non-discriminatory treatment, but reported rude staff attitudes and discrimination based on social status.

4. CONCLUSION

This study assessed the quality of healthcare services delivered by tertiary care government hospitals across seven major Indian cities (Delhi, Kolkata, Punjab, Lucknow, Vishakhapatnam, Chandigarh, and Kochi), using the SERVQUAL framework to compare patient expectations with actual service experiences. Based on responses from 1,002 patients, the study found a statistically significant gap between expectation and experience across all five service quality dimensions — Reliability, Responsiveness, Tangibles, Assurance, and Empathy ($p < 0.0001$ for each).

Contrary to what a positive service outcome would imply, patients' expectation scores were consistently and significantly lower than their experience scores across every dimension, indicating that the actual care received fell short of what patients expected — reflecting widespread patient dissatisfaction with the healthcare services provided at these institutions. The largest gaps were observed in the tangible dimension (infrastructure, hygiene, and physical facilities), followed by assurance and reliability, with empathy showing the comparatively smallest, though still significant, gap.

These findings confirm that service quality deficiencies in tertiary care government hospitals in India are systemic rather than isolated, spanning physical infrastructure, staff competence and reliability, responsiveness to patient needs, procedural trust and safety, and interpersonal empathy and equity of care.

The study underscores the urgent need for:

- **Focused, dimension-specific interventions** by hospital management to close identified service gaps
- **Government investment** in infrastructure, staffing, and manpower to support tertiary care facilities
- **Institutionalized feedback mechanisms** to continuously capture patient grievances and expectations

- **Staff sensitization and training programs**, particularly to address empathy, communication, and non-discriminatory care
- Ultimately, closing these service quality gaps is essential not only for improving patient satisfaction but for strengthening the credibility, accountability, and overall effectiveness of India's public tertiary healthcare system. Addressing these gaps requires sustained, coordinated efforts from hospital administrators, healthcare policymakers, and the government to ensure that the quality of care delivered aligns more closely with patient needs and expectations.

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