

Effect of service quality on inpatient satisfaction at Cibinong Regional General Hospital

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ABSTRACT

Introduction: Patient satisfaction is a key indicator in evaluating the quality of healthcare services. Understanding the influence of service quality dimensions helps hospitals improve patient experience and service performance.

Methods: This descriptive-analytic study employed a cross-sectional design and included 60 inpatients selected by simple random sampling. Data were collected using a SERVQUAL-based questionnaire assessing five dimensions: reliability, tangibles, assurance, responsiveness, and empathy. Statistical analysis was performed using the Chi-Square test with $\alpha = 0.05$.

Result: Most respondents (65%) reported being satisfied. All dimensions of service quality showed significant relationships with patient satisfaction: reliability ($p = 0.001$), tangible ($p = 0.001$), assurance ($p = 0.023$), responsiveness ($p = 0.003$), and empathy ($p = 0.002$). These findings indicate that inpatient satisfaction is influenced by consistent service performance, physical facility conditions, professional competence, responsiveness, and empathetic attitudes.

Conclusion: Service quality dimensions significantly affect inpatient satisfaction. Strengthening all five SERVQUAL dimensions is essential for enhancing service quality and improving overall patient experience at RSUD Cibinong.

Keywords: Service quality; Patient satisfaction; SERVQUAL; Inpatient care.



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INTRODUCTION

Improving the quality of healthcare services in the modern era requires hospitals not only to focus on the effectiveness of medical services but also on the quality of the patient experience during care. Service success is now understood more comprehensively, not solely through clinical indicators, but also through patient satisfaction levels that reflect their perceptions of service quality. Recent studies indicate that patient satisfaction is an important indicator of hospital service quality, as it is influenced by factors such as interactions with healthcare professionals, facility comfort, and effective communication ([Wening Palupi Dewi et al., 2022](#); [Asri Rossnita Dewi, Chriswardani Suryawati, 2023](#)). This focus on patient satisfaction positions the delivery of healthcare services as a primary concern, as it is within this process that the patient experience is formed and evaluated.

Healthcare services hold a central role because they constitute the type of service that most frequently interacts directly with patients and determines the quality of their experience during care. This interaction makes service quality a vital factor influencing patients' perceptions of how well the hospital meets their needs. The World Health Organization emphasizes that healthcare services must be oriented toward patient needs and experiences, as these factors are the most decisive in determining overall care quality ([WHO, 2016](#)). Thus, the quality of services perceived by patients ultimately depends significantly on the performance and attitude of healthcare professionals as the frontline providers of care.

Healthcare professionals play a crucial role in monitoring patients' conditions, providing support, and delivering daily care. Interactions between healthcare providers and patients not only have clinical implications but also strongly shape patients' perceptions of hospital service quality. When this relationship functions well through effective communication, prompt responses, and empathy, patients tend to feel more comfortable and confident throughout the care process. Conversely, when there is a gap between patient expectations and healthcare staff behavior, it can create negative experiences that undermine the hospital's image. Numerous studies show that non-technical aspects, such as empathy, therapeutic communication, and responsiveness from healthcare professionals, contribute significantly to patient satisfaction ([Rahayuningsih and Cahyaningrum, 2023](#)). This reality is evident in various regional hospitals, including Cibinong Regional General Hospital (RSUD Cibinong), which faces evolving service dynamics and continually rising patient expectations.

As a regional hospital, Cibinong Regional General Hospital (RSUD Cibinong) faces distinctive challenges in delivering healthcare services, ranging from fluctuations in patient volume and the diversity of care needs to pressures for consistently improving service quality. In this context, implementing the National Quality Indicators (NQI) for hospitals is essential as a benchmark for assessing service quality. Regulatory-wise, the Ministry of Health Regulation No. 30 of 2022 mandates that hospitals report and evaluate these indicators to ensure service quality can be monitored and continuously improved ([Kemenkes RI, 2022](#)). In practice, several studies in RSUDs indicate that implementing the National Quality Indicators faces challenges, including a lack of a quality-oriented culture, limited management commitment, and suboptimal use of quality information systems ([Fitriani et al., 2024](#)). In this context, healthcare services become the most vulnerable component to differences in perception between healthcare professionals and patients. This imbalance has the potential to create a gap between patient expectations and the actual services received, thus necessitating an in-depth analysis to identify the factors influencing the quality of interactions between healthcare providers and patients. These conditions underscore

the need for a systematic evaluation of patient satisfaction levels to direct quality improvement efforts toward the aspects most in need of improvement.

Measuring patient satisfaction with healthcare services is essential for identifying which aspects have met expectations and which still require improvement. This information provides an important basis for hospital management in designing more targeted service-quality improvement programs (Legstyanto, 2025). In addition, the results of satisfaction measurements can also be used as an internal evaluation tool for healthcare professionals, encouraging the development of competencies in therapeutic communication, empathy, and professionalism (Siregar, Lipin and Pipin, 2021; Lisna, Syafar and Rifai, 2022; Rosidah *et al.*, 2024)

Based on these considerations, this study was conducted to provide an overview of inpatient satisfaction with healthcare services at Cibinong Regional General Hospital in Bogor Regency. This research is expected to provide a scientific basis for improving service quality by strengthening the factors that influence patient satisfaction. In addition, the findings are expected to support the hospital in creating services that are more humane, professional, and patient-oriented. Thus, this study holds strategic value in supporting the continuous improvement of healthcare service quality.

RESEARCH METHODOLOGY

The research method employed in this study is an analytic-descriptive, cross-sectional approach to assess the relationship between inpatient satisfaction and the quality of healthcare services at Cibinong Regional General Hospital, focusing on three main dimensions: reliability, responsiveness, and empathy. The study population comprised all inpatients at RSUD Cibinong during the research period. The research sample consisted of patients who were undergoing treatment in the Inpatient Unit and was selected using a simple random sampling technique. A total of 60 respondents was determined using the Isaac and Michael formula for sample size calculation in quantitative research.

Data were collected using a primary data-based questionnaire, developed according to service quality dimensions and patient satisfaction indicators. The questionnaire contained statements regarding reliability, responsiveness, and empathy, and was distributed directly to the respondents. Initial data entry and tabulation were performed in Microsoft Excel, and statistical analysis was conducted in SPSS version 18. Univariate analysis was employed to describe respondent characteristics and the distribution of research variables. Bivariate analysis was carried out using the Chi-Square (χ^2) test to examine the relationship between service quality dimensions and patient satisfaction levels. A p-value of < 0.05 was used as the threshold for statistical significance in this study.

RESULT

The results of this study provide an overview of inpatient characteristics and examine the relationship between five SERVQUAL service quality dimensions and patient satisfaction at Cibinong Regional General Hospital. Overall, most respondents reported being satisfied with the services received. Statistical analysis showed that each service quality dimension, including reliability, tangible aspects, assurance, responsiveness, and empathy, had a significant association with patient satisfaction. These findings highlight that patient perceptions of consistent service performance, facility conditions, professional competence, responsiveness, and empathetic care play a crucial role in shaping overall satisfaction.

Table 1. Frequency Distribution of Inpatient Characteristics at Cibinong Regional General Hospital

Characteristics	n	%
Age		
Adolescent (17–25 years)	10	16.67
Adult (26–59 years)	22	36.67
Elderly (≥ 60 years)	28	46.67
Gender		
Male	25	41.67
Female	35	58.33
Reliability		
Reliable	38	63.33
Less Reliable	22	36.67
Tangible		
Good	40	66.67
Less Good	20	33.33
Assurance		
Convincing	42	70.00
Less Convincing	18	30.00
Responsiveness		
Responsive	36	60.00
Less Responsive	24	40.00
Empathy		
Caring	35	58.33
Less Caring	25	41.67
Satisfaction Level		
Satisfied	39	65.00
Not Satisfied	21	35.00

The univariate analysis describes the frequency distribution of inpatient characteristics at Cibinong Regional General Hospital. Based on age group, most respondents were elderly (≥ 60 years), accounting for 46.67% of the total sample, followed by adults aged 26–59 years (36.67%) and adolescents aged 17–25 years (16.67%). This indicates that most inpatients were older adults who typically require more intensive health services. In terms of gender, female patients accounted for a larger proportion (58.33%) than male patients (41.67%). Assessment of the service quality dimensions shows that most respondents perceived service reliability as good, with 63.33% reporting it as reliable. Similarly, the tangible aspects of the hospital environment were viewed positively, with 66.67% rating them as good. The assurance dimension also received favorable responses, with 70% of patients perceiving healthcare providers as convincing in terms of professionalism, competence, and communication. Regarding responsiveness, 60% of respondents considered healthcare staff to be responsive, while 58.33% reported experiencing caring attitudes under the empathy dimension.

Overall, patient satisfaction levels were relatively high. A total of 65% of respondents reported being satisfied with the inpatient services, whereas 35% expressed dissatisfaction. These findings suggest that most patients had positive experiences with the services provided, which aligns with the generally favorable evaluations of the SERVQUAL dimensions.

Table 2. Combined Bivariate Analysis of Service Quality Dimensions and Inpatient Satisfaction

Service Quality Dimension	Category	Satisfied n (%)	Not Satisfied n (%)	Total n (%)	p-value
Reliability	Reliable	35 (89.74)	3 (7.89)	38 (63.33)	0.001
	Less reliable	4 (10.53)	18 (85.71)	22 (36.67)	
Tangible	Good	34 (85.00)	6 (15.00)	40 (66.67)	0.001
	Less good	8 (40.00)	12 (60.00)	20 (33.33)	
Assurance	Convincing	30 (71.43)	12 (28.57)	42 (70.00)	0.023
	Less convincing	7 (38.89)	11 (61.11)	18 (30.00)	
Responsiveness	Responsive	28 (77.78)	8 (22.22)	36 (60.00)	0.003
	Less responsive	7 (29.17)	17 (70.83)	24 (40.00)	
Empathy	Caring	30 (85.71)	5 (14.29)	35 (58.33)	0.002
	Less caring	12 (48.00)	13 (52.00)	25 (41.67)	

The combined bivariate analysis demonstrates that all dimensions of service quality reliability, tangible aspects, assurance, responsiveness, and empathy show statistically significant relationships with inpatient satisfaction ($p < 0.05$). Patients who rated services positively across these dimensions consistently reported higher satisfaction levels. Reliability and empathy exhibited the greatest proportional differences, with 89.74% of patients perceiving high reliability and 85.71% perceiving strong empathy, both of which were associated with satisfaction. Similarly, good physical facilities, convincing assurance, and responsive care were associated with substantially higher satisfaction proportions. These results indicate that improved service consistency, adequate physical infrastructure, professional assurance, prompt responsiveness, and empathetic interactions contribute significantly to overall patient satisfaction.

DISCUSSION

The results of this study indicate that all service quality dimensions, reliability, tangible, assurance, responsiveness, and empathy, have a significant relationship with inpatient satisfaction levels. These findings suggest that service quality is not only assessed based on technical and procedural aspects, but also on how services are delivered consistently, promptly, attentively, convincingly, and supported by adequate facilities. The five SERVQUAL dimensions complement each other and shape patients' perceptions of healthcare service quality. When patients hold positive perceptions of these dimensions, their satisfaction levels also increase significantly.

Relationship Between the Reliability Dimension and Patient Satisfaction

The reliability dimension has a significant relationship with patient satisfaction ($p = 0.001$). These findings indicate that patients' perceptions of healthcare providers' reliability, namely, the ability to deliver services on time, follow procedures consistently, and provide accurate information, greatly contribute to whether patients feel satisfied. Quantitatively, most patients who rated nursing services as reliable (89.74%) reported being satisfied, whereas most patients who considered the services less reliable (85.71%) reported being dissatisfied. This finding is consistent with healthcare service studies indicating that reliability (timeliness of medication administration, accuracy of procedures, consistency in protocols) is a strong predictor of patient satisfaction because it enhances patients' sense of security and trust in the healthcare system (Ferreira et al., 2023). Reliability influences patient satisfaction because it encompasses the timeliness of service, consistency of procedures, and accuracy of actions, thereby reducing clinical errors and enhancing a sense of security. In addition, the accuracy of information provided

by healthcare professionals helps patients understand the care process, adjust their expectations, and build trust (Budi Setyawan *et al.*, 2019)

Relationship Between the Tangible Dimension and Patient Satisfaction

The tangible dimension is significantly associated with patient satisfaction ($p = 0.001$). These findings indicate that the physical evidence of services remains an important component of the patient experience during healthcare delivery. The data reveal that 85% of patients who rated the facilities as good were satisfied, whereas only 40% of patients who rated the facilities as less good were satisfied. This difference in proportion underscores that the quality of physical evidence greatly influences patients' perceptions of service quality and comfort. The tangible dimension includes various elements, such as the condition of physical facilities, the completeness and readiness of medical equipment, environmental cleanliness, the appearance of healthcare staff, and the quality of communication materials (e.g., educational posters, information boards, or health promotion media). Clean, well-organized facilities and modern, well-functioning medical equipment create an impression of professionalism and enhance patients' comfort and sense of safety (Aldizulfikar, Damarsiwi and Indriasari, 2022; YuliantoHarinugroho, Rofik and Fahlefi, 2023). Patients tend to perceive services as higher quality when the visible physical evidence meets standards, as visual and material aspects often serve as initial indicators of service quality.

Relationship Between the Assurance Dimension and Patient Satisfaction

The assurance dimension has a significant relationship with patient satisfaction ($p = 0.023$). Among patients who rated healthcare providers as convincing, 71.43% reported satisfaction, whereas only 38.89% of patients who rated providers as less convincing did so. These results illustrate that the assurance aspect, which includes knowledge, competence, courtesy, and healthcare professionals' ability to instill a sense of security and trust, plays a crucial role in shaping patient satisfaction. The assurance dimension is particularly important because inpatients are often in vulnerable conditions, rely on the professionalism of healthcare staff, and need confidence that medical procedures are carried out correctly. When healthcare professionals demonstrate competence and professional behavior through adequate knowledge, clinical skills, clear communication, and polite conduct, patients tend to feel more confident and comfortable during care. Several studies support these findings; research in Indonesian inpatient hospitals using the SERVQUAL model found that assurance contributes significantly to patient satisfaction, with positive regression coefficients and p -values < 0.001 (Rahmatia *et al.*, 2025).

Furthermore, a study conducted in a private hospital in Palembang indicated that assurance, along with other service quality dimensions (reliability and responsiveness), significantly affects patient satisfaction, suggesting that the guarantee of professionalism and service is one of the key determinants of patient satisfaction (Suprpto and Mulat, 2021). Therefore, to enhance patient satisfaction, hospitals need to strengthen the assurance dimension through professional training for healthcare staff, improvement of competency standards, transparent and empathetic communication, and courteous behavior in service delivery, as these aspects not only improve clinical quality but also build patients' trust and sense of security.

Relationship of the Dimension of Responsiveness to Patient Satisfaction

The responsiveness dimension has a significant relationship with patient satisfaction ($p = 0.003$). Most patients who rated nurses as responsive (77.78%) reported satisfaction, whereas most who rated nurses as less responsive (70.83%) reported dissatisfaction. These findings are consistent with the literature, which indicates that healthcare professionals' prompt response to patient needs and complaints has a tangible impact on patients' perceptions and satisfaction with

services. A study conducted in a teaching hospital in Makassar found that nurse responsiveness is positively associated with inpatient satisfaction (Suprpto, 2020). Responsiveness encompasses healthcare professionals' willingness to assist patients, prompt responses to calls, prompt handling of complaints, and the provision of clear and timely information. Inpatients require swift services due to their vulnerable physical and emotional conditions. Improvements in responsiveness can be achieved through workload management, interpersonal communication training, and the optimization of patient needs monitoring systems (Zulfiah, Kadang, 2025). To enhance inpatient satisfaction, hospitals need to strengthen responsiveness by managing workload, improving interpersonal communication skills, and optimizing patient needs-monitoring systems. These measures contribute to more efficient services while also increasing patients' trust and comfort in nursing care.

Relationship Between the Empathy Dimension and Patient Satisfaction

The empathy dimension has a significant relationship with patient satisfaction ($p = 0.002$). Among patients who felt cared for, 85.71% were satisfied, whereas only 48% of those who felt less cared for were satisfied. In the context of nursing services, empathy encompasses healthcare professionals' ability to demonstrate care, patience, effective interpersonal communication, and understanding of each patient's emotional state and unique needs. Empathic interactions not only create a more humane care experience but also help reduce anxiety, enhance a sense of security, and strengthen the therapeutic relationship between nurses and patients. Various studies indicate that healthcare professionals' empathic attitudes are a key determinant in shaping perceptions of service quality and overall patient satisfaction. Empathy includes care, patience, effective interpersonal communication, and understanding of patients' emotional conditions. Empathic interactions foster a more comfortable recovery environment and reduce anxiety (Suprpto, Mulat and Lalla, 2021; Karmadi *et al.*, 2023)

CONCLUSION

This study confirms that all dimensions, tangible, reliability, responsiveness, assurance, and empathy, have a significant relationship with inpatient satisfaction, indicating that healthcare service quality is multidimensional and interrelated. These findings highlight the importance of improving physical facilities, healthcare professionals' professionalism, prompt responsiveness, service consistency, and empathetic interpersonal communication as key factors shaping a positive patient experience. The implications of these results include the need for hospitals to integrate SERVQUAL-based evaluations into quality policy development, human resource competency enhancement, and service system strengthening. Furthermore, this study opens the door to further research on other variables, such as patient safety, workload, and the implementation of health technology, to enrich the understanding of the determinants of patient satisfaction.

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Conflict of Interest

The authors declare that they have no financial or non-financial conflicts of interest that could have influenced the conduct of the study, data analysis, or preparation of this manuscript.

References

- Aldizulfikar, A., Damarsiwi, E. P. M. and Indriasari, N. (2022) 'The Influence of Service Quality and Facilities on Inpatient Satisfaction at Assyifa Manna Hospital, South Bengkulu', *Jurnal Ekonomi, Manajemen, Akuntansi dan Keuangan*, 3(3), pp. 1169–1182. doi: <https://dx.doi.org/10.53697/emak.v3i3.722>.
- Asri Rosnita Dewi, Chriswardani Suryawati and Septo Pawelas Arso (2023) 'Pengaruh Kualitas Pelayanan dan Citra Rumah Sakit terhadap Kepuasan Pasien di Indonesia: Literature Review', *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, 6(10), pp. 1940–1949. doi: <https://dx.doi.org/10.56338/mppki.v6i10.4075>.
- Budi Setyawan, F. E. *et al.* (2019) 'Medical staff services quality to patients satisfaction based on SERVQUAL dimensions', *International Journal of Public Health Science (IJPHS)*, 8(1), p. 51. doi: <https://dx.doi.org/10.11591/ijphs.v8i1.17066>.
- Ferreira, D. C. *et al.* (2023) 'Patient Satisfaction with Healthcare Services and the Techniques Used for its Assessment: A Systematic Literature Review and a Bibliometric Analysis', *Healthcare*, 11(5), p. 639. doi: <https://dx.doi.org/10.3390/healthcare11050639>.
- Fitriani, E. *et al.* (2024) 'Penerapan Indikator Nasional Mutu (INM) untuk Peningkatan Mutu Pelayanan dalam Pencapaian Standar Akreditasi Rumah Sakit di RSUD Bangkinang', *Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM)*, 7(2), pp. 517–529. doi: <https://dx.doi.org/10.33024/jkpm.v7i2.12278>.
- Karmadi, K. *et al.* (2023) 'Meta-Analisis Pengaruh Empati dalam Kualitas Pelayanan terhadap Kepuasan Pasien di Rumah Sakit', *Jurnal Penelitian Perawat Profesional*, 5(3), pp. 1209–1218. doi: <https://dx.doi.org/10.37287/jppp.v5i3.1748>.
- Kemenkes RI (2022) 'Peraturan Menteri Kesehatan Republik Indonesia Nomor 30 Tahun 2022 Tentang Indikator Nasional Mutu Pelayanan Kesehatan Tempat Praktik Mandiri Dokter Dan Dokter Gigi, Klinik, Pusat Kesehatan Masyarakat, Rumah Sakit, Laboratorium Kesehatan, Dan Unit Transfu'. Kementerian Kesehatan RI.
- Legstyanto, R. E. (2025) 'Pengaruh Mutu Pelayanan Terhadap Kepuasan Pasien di Rumah Sakit Bangkalan Binjai', *All Fields of Science Journal Liaison Academia and Society*, 5(1), pp. 39–44. doi: <https://dx.doi.org/10.58939/afosj-las.v5i1.961>.
- Lisna, Syafar, M. and Rifai, M. (2022) 'Pengaruh Mutu Pelayanan terhadap Tingkat Kepuasan Pasien Rawat Inap di Puskesmas Lapai Kabupaten Kolaka Utara', *NERSMID : Jurnal Keperawatan dan Kebidanan*, 5(1), pp. 14–27. doi: <https://dx.doi.org/10.55173/nersmid.v5i1.100>.
- Rahayuningsih, L. A. S. and Cahyaningrum, N. (2023) 'Pengaruh Sikap Empati Tenaga Kesehatan Terhadap Kepuasan Pasien: Meta Analisis', *Infokes: Jurnal Ilmiah Rekam Medis dan Informatika Kesehatan*, 13(2), pp. 122–127. doi: <https://dx.doi.org/10.47701/infokes.v13i2.3130>.
- Rahmatia, S. *et al.* (2025) 'Service quality in hospital inpatient care: SERVQUAL model approach', *Health SA Gesondheid*, 30, pp. 1–10. doi: <https://dx.doi.org/10.4102/HSAG.v30i0.3055>.
- Rosidah *et al.* (2024) 'Analisis Mutu Pelayanan Terhadap Kepuasan Pasien Rawat Inap Rumah Sakit Umum Daerah Tahun 2024', *Cendekia Medika: Jurnal Stikes Al-Ma'arif Baturaja*, 9(1), pp. 135–144. doi: <https://dx.doi.org/10.52235/cendekiamedika.v9i1.350>.
- Siregar, H. K., Lipin and Pipin, A. (2021) 'Kepuasan Pasien Rawat Inap Terhadap Mutu Pelayanan Kesehatan Di Rumah Sakit : A Literature Review', *Jurnal Kesehatan Holistic*, 5(2), pp. 18–30. doi: <https://dx.doi.org/10.33377/jkh.v5i2.107>.
- Suprpto, S. (2020) 'Nurse Compliance using Basic Personal Protective Equipment in Providing Health Services Nursing Actions', *International Journal of Medicine and Public Health*, 10(3), pp. 119–121. doi: <https://dx.doi.org/10.5530/ijmedph.2020.3.25>.
- Suprpto, S. and Mulat, T. C. (2021) 'Faktor Determinan Pengembangan Kapasitas Perawat dalam Pelayanan Kesehatan', *Jurnal Ilmiah Kesehatan Sandi Husada*, 10(2), pp. 416–422. doi: <https://dx.doi.org/10.35816/jiskh.v10i2.628>.
- Suprpto, S., Mulat, T. C. and Lalla, N. S. N. (2021) 'Nurse competence in implementing public

- health care', *International Journal of Public Health Science (IJPHS)*, 10(2), p. 428. doi: <https://dx.doi.org/10.11591/ijphs.v10i2.20711>.
- Wening Palupi Dewi *et al.* (2022) 'Determinants of Satisfaction of Inpatients in Hospitals', *Journal for Quality in Public Health*, 5(2), pp. 444–452. doi: <https://dx.doi.org/10.30994/jqph.v5i2.332>.
- WHO (2016) 'Framework on integrated, people-centred health services'. World Health Organization.
- Yulianto harinugroho, Y., Rofik, M. and Fahlefi, W. (2023) 'Pengaruh Kualitas Pelayanan Dan Fasilitas Fisik Terhadap Kepuasan Pasien', *Jurnal Ilmu Manajemen dan Akuntansi Terapan (JIMAT)*, 14(1), pp. 18–26. doi: <https://dx.doi.org/10.36694/jimat.v14i1.442>.
- Zulfiah, Z., Kadang, Y. and Suprpto, S. (2025) 'Correlation Analysis of Knowledge and Attitude Toward Treatment Adherence Among Type 2 Diabetes Mellitus Patients at Nur Ichsan Clinic, Makassar City', *Media Kesehatan Politeknik Kesehatan Makassar*, 20(2), pp. 304–309. doi: <https://dx.doi.org/10.32382/medkes.v20i2.1709>.