

Evaluating the Impact of Healthcare Service Quality on Patient Satisfaction and Loyalty: A Study of Public and Private Hospitals in Telangana, India

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ABSTRACT

This study investigates the connections between patient loyalty, patient satisfaction, and the quality of healthcare services provided in Telangana, India's public and private hospitals. Data was gathered from 600 respondents, equally distributed throughout seven hospitals, using the SERVQUAL instrument. A stratified random sample was used in the study to guarantee thorough insights from admitted patients. Important results show that patient happiness and loyalty are highly influenced by the perceived quality of healthcare services. Furthermore, particularly in areas like medical treatment, operational activities, and physical upkeep, patient satisfaction acts as a mediator in the relationship between service quality and loyalty. When comparing private hospitals to public hospitals, higher levels of satisfaction and loyalty were found. The study emphasizes how crucial it is for healthcare services to continuously improve their quality to improve patient outcomes and institutional reputation. Future studies should examine how demographic factors, and longitudinal effects affect patient views in various healthcare environments.

Introduction

The service sector is a major engine of economic growth in the modern, quickly developing world, especially in developed countries (Amoah et al., 2022). The emphasis on service quality is growing in the service sectors, with healthcare service quality receiving particular attention (Hashjin et al., 2020).

Hospitals in the healthcare sector provide comparable services, but the caliber of such services can differ greatly (Ajam et al., 2014). Notwithstanding these variations, attaining exceptional service quality continues to be a primary objective for all hospitals, given that a healthy populace fosters economic expansion (Gilavand&Torabipour, 2022; Haj-Ali et al., 2014). Particularly in India, improving the quality of healthcare services has been a priority.

Evaluating the disparities between patient opinions about the caliber of medical care in public and private hospitals is crucial to outperforming rivals. Patient happiness, loyalty, and hospital choice are all directly impacted by these impressions (Ramadhan, Bayu; Rahmiati; Maulana, 2019).

Providing high-quality healthcare services has become essential due to increased living standards and client expectations (Rahimi & Solymani, 2022). Scholars, hospital administrators, legislators, and medical professionals face a problem in this regard since they need to pinpoint variables other than patient satisfaction (Al-Borie and Damanhour, 2013). Hospitals must prioritize patient loyalty to lower perceived risks and establish long-term connections with their patients, in addition to providing high-quality care. It is less expensive and time-consuming to keep current patients than to find new ones (Shafiq et al., 2017).

Even though patient loyalty is becoming more and more important, it's common to ignore the clear correlation between patient loyalty and perceived service quality, particularly when contrasting public and private healthcare providers. The current study attempts to investigate the relationship between patient loyalty and many aspects of the quality of healthcare services, including operational activities, physical maintenance, support personnel, nurse care, and medical care. It will also look at how well healthcare services are viewed generally and how important these factors are in relation to patient loyalty and satisfaction in the public and private healthcare sectors. The mediating role that patient satisfaction plays in the relationship between patient loyalty and the quality of healthcare services will also be examined in this study.

The purpose of this article is to discuss several important research topics about the quality of healthcare services in Telangana, India. It investigates the relationship between patient happiness and loyalty and the perceived quality of healthcare provided in public and private institutions. It also looks at how patient satisfaction affects patient loyalty and whether patient satisfaction mediates the relationship between perceived healthcare service quality and patient loyalty. Additionally, the study investigates whether healthcare services from public and private hospitals differ significantly in quality. These inquiries seek to shed light on the intricate relationships that exist between patient happiness, loyalty, and service quality. They also seek to draw attention to the disparities in service quality that exist between the public and private healthcare systems.

Literature

Service quality has is an important area of study for academics and professionals in the service literature. The SERVQUAL scale was created by Parasuraman & Berry et al. (1991) to gauge perceived service quality. It has undergone successful testing in several service industries. The five qualities covered by this 22-item scale are tangibility, assurance, reliability, empathy, and responsiveness. The SERVQUAL scale may be tailored to individual businesses' needs and is considered one of the most flexible and dependable instruments for evaluating perceived service quality across various service industries.

Within the healthcare domain, scholars have elucidated the notion of service quality and discerned multiple facets that influence service results. Five elements of hospital service quality were discovered by (Rahim et al., 2021) and dubbed PubHosQual: medical services, admission, overall services, social responsibility, and discharge services. The physical environment, outcome quality, and interactional quality were the three criteria used by (Altuntas et al., 2020) to gauge perceived service quality. In order to characterize the quality of healthcare services, (Taner & Antony, 2006) measured patients' impressions of six different categories: the physical environment, food, staff-patient relationships, empathy, professionalism, and priority given to inpatient needs.

According to (Bakar et al., 2008), there are seven components that make up the perceived quality of healthcare services: hospital infrastructure, staff quality, safety, administrative processes, clinical treatment process, social responsibility, and the entire medical care experience. (Mostafa, 2005) used admission processes, doctor and nurse care, friend and family consideration, a comfortable atmosphere, and discharge procedures to gauge the quality of their services. In hospitals, patient views on service performance are crucial because their evaluation of the quality of care encourages communication between patients and medical staff, which in turn increases patients' trust in the general standard of care (J. Lee, 2006).

The current study is predicated on (Hu et al., 2010) identified elements of perceived healthcare service quality (HCSQ), such as the care provided by physicians, nurses, supportive personnel, operational activities, and physical maintenance. Although SERVQUAL's dimensions have been validated in a western setting, consumer cultural differences will impact its applicability (Li et al., 2015).

According to (Mendes et al., 2018), patient satisfaction is a crucial component of the quality of healthcare services and a noteworthy indicator of progress in the field. A clear definition of customer satisfaction is when expectations are met, and perceived performance is compared. If perceived performance meets or exceeds expectations, customers are said to be content; if not, they are said to be unhappy (Ahmed et al., 2020; Galanakis & Goula, 2022).

The disconfirmation model has been widely used as a satisfaction model across numerous industries (Kalaja & Krasniqi, 2022; Mohebifar et al., 2016). The disconfirmation hypothesis asserts that disconfirmation is the fundamental driver of consumer contentment. This theory states that the link between actual performance and expectations determines satisfaction (A'aqoulah et al., 2022). Patient satisfaction is a critical metric for assessing the quality of hospital services in the healthcare setting (Alumran et al., 2021). Additionally, it is important for establishing long-term relationships, ensuring patient loyalty (Taufiq et al., 2023), fostering interpersonal relationships between patients and healthcare providers, and increasing the likelihood that patients will return to the facility.

Because customer loyalty affects behavioral intentions, it is heavily discussed in marketing literature (AlOmari, 2021). Because patient happiness can improve an organization's reputation and raise its market share, loyalty is becoming increasingly important in the service industry (Kansra & Jha, 2016). According to ("Adapting the Servqual Scale to a Private Hospital Emergency Services: An Empirical Investigation," 2014), loyalty is characterized as a strong attachment to a good or service that encourages regular future purchases.

Rebuying behavior, according to (Ali et al., 2018), entails preserving ties with service suppliers. According to (Rezaei et al., 2018), word-of-mouth is the result of consumers telling others about their positive experiences with a good or service. Positive experiences can encourage repurchases, loyalty, and positive word-of-mouth (Zaheer, 2020). poor experiences, on the other hand, might result in poor word-of-mouth and cause customers to switch to competitors. According to (Budiharto, 2020), loyalty is therefore a feature of attitude that leads to recurring purchasing behavior.

Hypothesis

The SERVQUAL instrument, which evaluates customers' expectations and perceptions of service quality, was developed by Parasuraman & Berry (1991) and serves as the theoretical foundation for the research framework for this study. The expectancy confirmation theory (Shafii et al., 2016), which assesses how consumers' expectations and perceptions influence satisfaction and loyalty intentions, is the foundation of this tool.

Based on a review of the literature, the following research hypotheses are proposed:

H1: Perceived healthcare service quality is positively related to patient loyalty.

H2: Perceived healthcare service quality is positively related to patient satisfaction.

H3: Patient satisfaction is positively related to patient loyalty.

H4: Patient satisfaction mediates the relationship between perceived healthcare service quality and patient loyalty.

H4a: Patient satisfaction mediates the relationship between physicians' care and patient loyalty.

H4b: Patient satisfaction mediates the relationship between nurses' care and patient loyalty.

H4c: Patient satisfaction mediates the relationship between supportive staff and patient loyalty.

H4d: Patient satisfaction mediates the relationship between operational activities and patient loyalty.

H4e: Patient satisfaction mediates the relationship between physical maintenance and patient loyalty.

H5: There is a difference in the quality of healthcare services provided by public and private sector hospitals in Telangana, India.

Seven hospitals in all, chosen from Hyderabad, the capital city of Telangana, India, are included in the study. From six hospitals, five are owned by the commercial sector and two are operated by the public sector. The selection of the hospitals was predicated on their stature and size. By using the recommendations established by Krejcie and Morgan (1970), a sample size of 600 was obtained, with 300 respondents coming from hospitals in the public sector and 300 from hospitals in the private sector. To guarantee greatest generalizability, this strategy was used. For a thorough examination, identical data from hospitals in the public and private sectors were acquired.

Data were only gathered from admitted patients using the stratified random sampling technique since they have firsthand knowledge with the caliber of care provided by the individual hospitals and are exposed to a range of services. Various hospital wards, barring the intensive care unit (ICU), outpatient department (OPD), psychiatric, pediatric, and emergency wards, were utilized as strata. Within each stratum, admitted patients were chosen at random. Since hospital stays range from a few days to several weeks, data were gathered at varied intervals (every two to three weeks) to get input from new respondents. For sample statistics of hospitals in the public and private sectors, see Table 1.

Table 1: Respondents Data

Hospital Type	Hospital	No. of Beds	No. of Beds Concerned	No. of Participants
Public Hospitals (n=2)	A	775	301	150
	B	545	246	150

Private Hospitals (n=5)	C	397	190	115
	D	67	30	25
	E	95	85	75
	F	60	65	50
	G	45	40	35
Total		1984	957	600

Measurement

An established and standardized tool was used in the investigation. The supplies for medical care came from (Chahal & Sharma, 2004) and (Sardana & Madan, 2003). Items were taken from Gilson et al. (1994) and Newman et al. (1998) for use in nursing care. Items pertaining to supportive staff were acquired from (Sardana & Madan, 2003) and Kotler and Zaltman (1971), whereas items pertaining to operational operations were taken from (Sardana & Madan, 2003). The physical maintenance components were taken from (Kang & James, 2004) and (Sardana & Madan, 2003). The sources of the patient loyalty items were Cooper et al. (1979), and Kotler and Zaltman (1971). Items from Oliver (1980), (Baker & Lamb, 1994), and Wu et al. were used to evaluate the mediating function of patient satisfaction. These metrics have already been examined in Asian nations that are culturally comparable to India, such as Pakistan and Malaysia. It is expected that the outcomes will be similar because these Asian nations have similar cultures ((Chahal & Mehta, 2010); Aliman and Mohamad, (2013)).

Demographic Analysis of Respondents

Six hundred people from Telangana, India's public and private hospitals made up the study's sample. The respondents' gender distribution was about equal, with 51.7% women and 48.3% men. The bulk of participants (32.8%) were over 45, with those between the ages of 36 and 45 coming in second (24.0%). The distribution of educational attainment showed that 18.0% had a bachelor's degree and 28.5% had no schooling at all. A sizeable section of the sample (42.8%) was unemployed, whilst 15.0% of people in the sample were self-financed and 13.8% worked in the private sector.

The distribution of income showed that 60.8% of respondents had no relevant income and that 22.3% earned less than Rs. 25,000. 43.8% of participants were from outside the city, while the majority (56.2%) were from their hometowns. When it came to hospital type, there was a clear preference for private hospitals (65.8%), followed by public hospitals (34.2%).

31.0% of visitors were first-timers, 26.2% returned, and 24.3% had been more than three times. This information was based on the visit frequency. These demographics point to a varied sample with notable differences in occupation, education, and preferred hospitals, offering a thorough picture of patient experiences in Telangana's public and private hospitals. Greater preference for private hospitals can be a sign of better patient experiences or perceived higher service quality in the private sector.

Table 2: Demographic Profile of Respondents

Demographics	Overall (n=600)	Public Hospitals (n=300)	Private Hospitals (n=300)
Gender	F	%	f
Male	290	48.3	150

Female	310	51.7	150
Age			
Less than 18 years	68	11.3	35
18-25 years	96	16	55
26-35 years	95	15.8	48
36-45 years	144	24	58
Above 45 years	197	32.8	104
Education			
Zero education	171	28.5	109
Less than or equal to Matric	156	26	106
Intermediate	96	16	40
Bachelor	108	18	35
Masters or Above	69	11.5	10
Occupation			
Public sector employee	54	9	27
Private sector employee	83	13.8	39
Student	74	12.3	32
Self-financed (business)	90	15	39
Retired	42	7	20
Unemployed	257	42.8	143
Income Range			
Less than Rs. 25,000	134	22.3	88
Rs. 26,001-50,000	62	10.3	16
Rs. 50,001-100,000	30	5	4
Above Rs. 100,000	9	1.5	1
Not applicable	365	60.8	191
Locality			
Home town	337	56.2	155
Out of city	263	43.8	145
Preferred Hospital			

Public	205	34.2	194
Private	395	65.8	106
Visit to Hospital			
First	186	31	117
Second	157	26.2	72

Reliability and Validity

The survey instrument's reliability is evidenced by high Cronbach's Alpha ratings for every variable. The items consistently measure the same construct, as demonstrated by the excellent internal consistency of Physician's Care ($\alpha = 0.899$), Nurses' Care ($\alpha = 0.914$), Supportive Staff ($\alpha = 0.854$), Operational Activities ($\alpha = 0.876$), Physical Maintenance ($\alpha = 0.897$), and Patients Satisfaction ($\alpha = 0.901$). Despite having an alpha score of 0.730, which is significantly lower than the average, Patients Loyalty still falls within the acceptable range, indicating a respectable degree of internal consistency. The study's findings are more solid because of the excellent reliability scores, which guarantee that the survey items generate consistent measurements.

There are multiple pieces of evidence that support the survey instrument's validity (P. C. Lee et al., 2022). The survey items appear to assess the desired constructs adequately, as evidenced by their sourcing from well-established studies, hence demonstrating face validity. Ensuring content legitimacy involves thoroughly covering pertinent areas of the constructs and selecting items from multiple verified sources. Significant correlations between related constructs, like the one between Nurses Care and Patient Satisfaction (Public: 0.425**, Private: 0.511**), serve as evidence of the construct validity. The substantial correlations between patient satisfaction and loyalty (Public: 0.659**, Private: 0.568**) demonstrate the strong predictive linkages between service quality, patient satisfaction, and loyalty that support the criterion validity (Raziei et al., 2018). These results support the validity and reliability of the survey instrument employed in the study by showing that the measures accurately capture the theoretical constructs and predict associated outcomes.

Table 3: Reliability and Validity

Variables	No. of Items	α	M (Public)	SD (Public)	M (Private)	SD (Private)	1	2	3	4	5	6	7
1. Physician's Care	10	0.9	4.2	0.785	4.25	0.55	1						
2. Nurses Care	10	0.913	3.75	0.91	4.2	0.485	0.535**	1					
3. Supportive Staff	6	0.853	3.25	0.955	4.35	0.415	0.393**	0.410**	1				
4. Operational Activities	7	0.875	3.85	0.87	4.4	0.405	0.470**	0.425**	0.450**	1			
5. Physical Maintenance	7	0.896	3.12	0.945	4.48	0.35	0.380**	0.355**	0.582**	0.430**	1		

6. Patients Satisfaction	7	0.902	3.85	0.955	4.22	0.545	0.645**	0.420**	0.444**	0.572**	0.548**	1	
7. Patients Loyalty	9	0.731	3.78	0.705	3.93	0.505	0.460**	0.355**	0.392**	0.415**	0.330**	0.657**	1

Findings and Discussion

The findings of the regression analysis shed important light on the connections between patient loyalty, patient satisfaction, and perceived healthcare service quality. H1 is backed by the fact that patient loyalty and perceived healthcare service quality are positively correlated ($\beta = 0.275^{***}$, t-value = 4.420). Likewise, H2 is validated by a robust positive correlation between patient satisfaction and perceived healthcare service quality ($\beta = 0.427^{***}$, t-value = 8.810). Additionally, H3 is maintained, showing that patient loyalty is positively influenced by patient satisfaction ($\beta = 0.661^{***}$, t-value = 15.120). While the direct effect of healthcare service quality on patient loyalty declines but is still significant in Model 4 ($\beta = 0.576^{***}$, t-value = 9.417), the partial mediation effect of patient satisfaction on the relationship between perceived healthcare service quality and patient loyalty, as indicated by H4, is clear. This implies that this association is partially mediated by patient satisfaction. These findings are in line with (A'qoulah et al., 2022; Ahmed et al., 2020; Mendes et al., 2018)

Patient satisfaction has a variety of mediating impacts on some aspects of healthcare services. The association between patient loyalty and physicians' treatment is totally mediated (H4a), as patient satisfaction nullifies the direct effect. Both operational activities and supportive personnel exhibit partial mediation (H4c and H4d), showing their direct and indirect effects on patient satisfaction and, consequently, patient loyalty. These mediation hypotheses are not supported but given the lack of evidence demonstrating a substantial direct association between nurses' care (H4b) and physical upkeep (H4e) and patient loyalty. Lastly, as this factor was not specifically covered by the regression analysis, H5 necessitates a different comparison study to ascertain variations in the quality of healthcare services between public and private hospitals in Telangana, India.

Table 4: Hypothesis Testing (Public Sector Hospitals)

Model	Variables	B	t-value	F-value	R ²	Adjusted R ²	Durbin-Watson
1	Physician care	0.275** *	4.42	24.820** *	0.299	0.287	1.9
	Nurses care	0.058	0.92				
	Supportive staff	0.165**	2.555				
	Operational activities	0.177**	2.905				
	Physical maintenance	0.041	0.622				
2	Physician care	0.427** *	8.81	78.875** *	0.575	0.568	1.768
	Nurses care	-0.098	-0.21				
	Supportive staff	0.009	0.151				

	Operational activities	0.255** *	5.392				
	Physical maintenance	0.281** *	5.731				
3	Overall HCSQ	0.526** *	10.62	228.565* **	0.435	0.433	1.82
	Patients Satisfaction	0.661** *	15.12				

The regression analysis results indicate a robust relationship between various dimensions of healthcare service quality (HCSQ) and patient satisfaction and loyalty. In Model-1, physician care ($\beta = 0.118$, $t = 1.789$), nurses care ($\beta = 0.131$, $t = 1.928$), supportive staff ($\beta = 0.030$, $t = 0.512$), operational activities ($\beta = 0.126$, $t = 2.048$), and physical maintenance ($\beta = 0.260$, $t = 4.162$) collectively explain 24.7% of the variance in patient loyalty, with significant F-value ($F = 20.212$, $p < 0.001$) and Durbin-Watson value indicating no autocorrelation. Model-2 highlights a strong impact of physician care ($\beta = 0.427$, $t = 8.810$), operational activities ($\beta = 0.255$, $t = 5.392$), and physical maintenance ($\beta = 0.281$, $t = 5.731$) on patient satisfaction, explaining 57.5% of the variance ($F = 78.875$, $p < 0.001$). In Model-3, overall HCSQ significantly predicts patient satisfaction ($\beta = 0.526$, $t = 10.620$) and patient loyalty ($\beta = 0.661$, $t = 15.120$), with a R^2 of 0.443 ($F = 117.270$, $p < 0.001$) further supports the mediating role of patient satisfaction between overall HCSQ and patient loyalty in Model 4 ($\beta = 0.576$, $t = 17.100$ and $\beta = 0.577$, $t = 9.420$, respectively). These results highlight how crucial it is to uphold excellent service standards in healthcare environments to increase patient loyalty and happiness.

Table 5: Hypothesis Testing (Public Sector Hospitals)

Model	Variables	B	t-value	F-value	R ²	Adjusted R ²	Durbin-Watson
1	Physician care	0.118	1.789	20.212** *	0.26	0.247	2.145
	Nurses care	0.131*	1.928				
	Supportive staff	0.03	0.512				
	Operational activities	0.126*	2.048				
	Physical maintenance	0.260** *	4.162				
2	Physician care	0.427** *	8.81	78.875** *	0.575	0.568	1.768
	Nurses care	-0.098	-0.21				
	Supportive staff	0.009	0.151				
	Operational activities	0.255** *	5.392				
	Physical maintenance	0.281** *	5.731				
3	Overall HCSQ	0.526**	10.62	228.565*	0.435	0.433	1.82

		*		**			
	Patients Satisfaction	0.661** *	15.12				
4	Overall HCSQ	0.576** *	17.1	117.270* **	0.443	0.439	1.838
	Patients Satisfaction	0.577** *	9.42				

A thorough understanding of how various aspects of healthcare service quality affect patient happiness and loyalty is offered by the study of the hypotheses. Strong evidence supports Hypotheses H1 and H2, which state that patient happiness and loyalty are positively correlated with perceived healthcare service quality. This result emphasizes how crucial it is to uphold high standards of service quality in all areas since it has a big influence on how people view and stick with healthcare providers. In particular, the positive correlation between patient satisfaction and overall healthcare service quality ($\beta = 0.427^{***}$, $t\text{-value} = 8.810$) indicates that increases in service quality are probably going to lead to higher patient satisfaction, which will increase patient loyalty ($\beta = 0.661^{***}$, $t\text{-value} = 15.120$).

While service quality directly affects loyalty, patient satisfaction also plays a critical intermediary role, according to the partial mediation effect of patient satisfaction on the connection between perceived healthcare service quality and patient loyalty (H4). The direct impact on patient loyalty is greatly diminished when patient pleasure is considered, which makes this mediation especially notable for medical services and supportive personnel. On the other hand, the lack of significant mediation for physical maintenance and nursing care (H4b and H4e) implies that these factors could not have as much of an indirect impact on patient pleasure and loyalty. The findings suggest that while patient happiness continues to be a crucial component to the overall effect, certain components of healthcare service quality still have a direct impact on loyalty. Furthermore, this analysis did not directly address hypothesis H5, which aims to determine the variations in service quality between Telangana, India's public and private hospitals. Additional research would be necessary to reach a firm conclusion on this hypothesis. All things considered, these results underscore the critical role that patient satisfaction plays in connecting service quality to loyalty and point out specific areas where healthcare providers may concentrate their efforts toward improvement.

Practical Implication

The study's conclusions have important ramifications for legislators and hospital administrators. First and first, hospitals must focus and constantly enhance service quality across all dimensions, as seen by the positive association between patient loyalty and perceived healthcare service quality. To increase patient satisfaction and, in turn, loyalty, hospitals should concentrate on improving medical care, supportive staff interactions, and operational operations. In real terms, this entails making training investments for employees, expediting administrative procedures, and upholding strict physical upkeep standards. Furthermore, because patient happiness acts as a mediator in the relationship between loyalty and service quality, healthcare providers ought to put in place feedback systems that allow them to routinely monitor and manage patient satisfaction. By using this strategy, hospitals will be able to draw in new patients and keep their existing ones by building a positive reputation and word-of-mouth.

Conclusion and Future Scope

This study successfully demonstrates how patient satisfaction and loyalty are greatly impacted by perceived healthcare service quality. There is evidence to suggest that raising the standard of total service quality improves patient happiness, which encourages higher levels of patient loyalty. Particularly, the quality of medical care and the assistance of staff members are important factors that both directly and indirectly affect patient loyalty by affecting satisfaction. Patient satisfaction's significance in the framework for evaluating the quality of healthcare services is shown by its partial mediation effect. The research indicates that whereas certain aspects of service quality can impact patient loyalty directly, others might need patient satisfaction to increase their impact. These observations provide hospitals looking to enhance patient relations and service performance with a clear path forward.

This study could be furthered in the future by delving deeper into the disparities in service quality between public and private hospitals, especially across different geographic locations and healthcare environments. Further research on the ways in which particular organizational, cultural, or economic issues impact the relationships found in this study may be helpful. Further research might also look at the long-term implications of higher patient happiness and service quality on patient loyalty, as well as any possible effects on the financial performance and reputation of the hospital. Developing focused interventions based on the results to address important service quality attributes that are shown to be poorer could be another topic of investigation. Lastly, adding a more varied sample with a range of healthcare institutions and geographical areas could offer a deeper comprehension of the relationships among patient happiness, loyalty, and service quality.

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