



Service Quality and Cost of Care as Preferred Strategies for Patient Satisfaction and Loyalty: The Mediating Role of Brand Image and Perceived Value in Healthcare Services

Original Article

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Citation

Khan, M.S., Baig, M.K., & Ahmed, S.S.M. (2025).
Service quality and cost of care as preferred strategies
for patient satisfaction and loyalty: The mediating role of
brand image and perceived value in healthcare services.
*Open Access Public Health and Health Administration
Review*, 4(1), 159-176.WEBSITE: www.mdPIP.com
ISSN: Print: 2959-619X
ISSN: Online: 2959-6203
PUBLISHER: MDPIP

Abstract

Satisfying patients and gaining their loyalty has equal importance in a healthcare setup as that of the clinical outcome. However, patient satisfaction is closely associated with service quality, and financial considerations have gained prominence in defining the perceived value and value creation not only in strategy literature but also in healthcare. This study explores the effects of service quality and cost of care on patient satisfaction in defining the perceived value, brand image creating loyalty in Pakistan's hospital sector, as both the direct association and mediators. A non-probability convenience sampling method was used, sample size of 180 patients, using a cross-sectional, quantitative design in private and public hospitals in Karachi city. The findings reveal that the cost of care significantly influences patient satisfaction and perceived value, both of which improve patient loyalty. While service quality positively shapes brand image, its influence was not found to be significant, yet it contributes to loyalty. These results reflect the critical role of affordability and perceived value in shaping patient experiences. The study highlights that healthcare organizations must balance quality with cost efficiency by ensuring transparent pricing and effective service delivery. Moreover, the integration of patient-centered strategies and digital health solutions can further reinforce satisfaction and loyalty, enabling hospitals to develop a sustainable pathway to improving patient relationships and competitive positioning.

Keywords: Patient Centric Care. Healthcare Management, Healthcare Strategy, Healthcare Cost, Patient Satisfaction, Perceived Value.



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Introduction

The perceived value of healthcare, pricing, and quality are critical for improving patient satisfaction in both public and private healthcare sectors (Riska Arsita, 2019). Service quality defines the gap between expected and delivered services (Asnawi, 2019). Patient satisfaction is a key indicator of healthcare service quality and effectiveness. Service quality, care costs, brand image, and perceived value significantly influence patient loyalty (Riska Arsita, 2019). Global competition compels patients to seek cost-effective clinical outcomes, while governments in developing countries emphasize healthcare quality and affordability to reduce financial burdens (AlOmari, 2022). However, financing healthcare remains inadequate, giving way to increased out-of-pocket expenses (AlOmari, 2022). A hospital's image, reflecting public perception and patient memory associations, is a key marketing strategy to attract new patients (Asnawi, 2019). Research highlights that brand image significantly influences patient trust, service quality perceptions, and future healthcare decisions (Taneja, 2020). In today's competitive market, a strong brand image and superior service quality drive patient loyalty and organizational growth (DAM, 2021). Therefore, understanding service quality, brand image, customer satisfaction, and loyalty remains vital for healthcare marketers and policymakers. Growing public health awareness and medical technology advancements have heightened demand for quality care (Riska Arsita, 2019). Global competition pushes patients to seek cost-effective outcomes, making care cost a crucial factor (Riska Arsita, 2019). Governments in developing countries aim to improve healthcare quality and reduce patient financial burdens, yet out-of-pocket expenses and weak healthcare financing persist (Riska Arsita, 2019). Affordable care enhances satisfaction, brand image, and perceived value, strengthening trust and loyalty (Riska Arsita, 2019). Superior service quality improves hospital reputation and patient perceptions (Riska Arsita, 2019). Perceived value and brand image also moderate the impact of cost and service quality on satisfaction (Riska Arsita, 2019). Understanding these dynamics helps hospitals enhance service delivery, brand positioning, and patient retention. The study primarily intended to investigate the impact of service as well as the cost of care on patient satisfaction & patient loyalty in Pakistan's hospital industry. Moreover, it also aims to explore how perceived value contributes and brand image functions as a mediator in the relationship between patient happiness, service quality, and care costs.

Literature Review

The Healthcare Services in Pakistan

The healthcare sector plays a pivotal role in economic growth and public well-being (DAM, 2021; Faulkner, 2020). Unlike other industries, healthcare emphasizes patient satisfaction over service type (Velmurugan, 2019). Service quality, defined as the gap between expected and perceived care, is crucial for competitiveness (Asnawi, 2019; Chang, 2013). Patient perception, shaped by motives, values, and past experiences, guides satisfaction levels (Asnawi, 2019; Fida & Ghaderi, 2021). Service convenience and environment also influence satisfaction (Benoit, 2017; Noor, 2025). In Pakistan, the dual healthcare system—public and private—faces growing competition with new hospital establishments (Ashraf, 2018). Comprehensive services, from prevention to rehabilitation, are integral (Arsita, 2019). Ultimately, healthcare quality enhances productivity and drives national development (Faulkner, 2020). Pakistan's healthcare industry, a major source of employment and revenue, is divided into public and private sectors (Ashraf, 2018). Despite decentralization reforms to improve service delivery (Mashhadi, 2016), poor public policies and low healthcare spending persist (Javed, 2018). Growing hospital competition aims to enhance service quality nationwide (Ashraf, 2018).

Healthcare Service Quality

The researchers in healthcare often prioritize technical and functional service excellence over patient satisfaction (AlOmari, 2022). However, the service quality encompasses both functional delivery (how care is provided) and technical outcomes (clinical effectiveness) (AlOmari, 2022). Key factors influencing patient satisfaction include first impressions, clinical and nursing care, communication, housekeeping, and food services (AlOmari, 2022). Hospitals offer comprehensive, personalized health services across emergency, outpatient, and inpatient care, including promotive, preventive, curative, and rehabilitative services (Arsita, 2019). However, many hospitals narrowly focus on service excellence alone for patient retention. Long-term patient relationships foster emotional bonds, reduced

treatment concerns, and loyalty, making patients less likely to switch providers (Wang, 2011). Positive patient experiences also enhance overall visit satisfaction (Wang, 2011). Higher patient satisfaction is linked to improved care processes, lower mortality, and better adherence to medical advice, while reducing malpractice risks (Kessler, 2009). Thus, patient satisfaction remains a strong predictor of provider choice and healthcare outcomes

Patient Satisfaction

Customer satisfaction is pivotal for healthcare management, offering a competitive advantage by better meeting patient needs compared to rivals (DAM, 2021). Widely studied in healthcare literature, patient satisfaction serves as a key outcome measure for care quality and success in quality improvement initiatives (Javed, 2018). It reflects both cognitive and emotional responses shaped by expectations, social influences, and prior experiences (Saglık Kurumlarında Parasal Olmayan Maliyetler, 2013). A practical definition describes it as the degree to which healthcare goals and patient expectations are fulfilled (Saglık Kurumlarında Parasal Olmayan Maliyetler, 2013). In the medical sector, satisfaction reflects perceived value and patient reactions before, during, or after receiving services (Wu, 2011). Meeting patient expectations remains crucial for long-term loyalty and reputation management (Wu, 2011). Higher patient satisfaction is also linked to better clinical outcomes, reduced malpractice risk, and increased adherence to medical advice, making it a strong predictor of provider choice (Kessler, 2009).

Cost of Care

Global competition in healthcare compels patients to seek cost-effective clinical outcomes (AlOmari, 2022). Developing countries now prioritize healthcare quality and affordability to alleviate financial burdens, yet financing remains inadequate, resulting in rising out-of-pocket expenses (AlOmari, 2022). Hospital costs significantly influence patient decisions and service utilization (Arsita, 2019). To enhance satisfaction, hospitals must balance service quality, costs, and facilities in line with patient expectations (Arsita, 2019). The relationship between price and quality is complex; low-quality care often incurs higher costs, while improved quality reduces overall expenses (Wang, 2008). Recent research highlights a positive link between service quality and patient satisfaction, with performance-based incentives improving clinical care standards in resource-limited settings (Peabody, 2010).

Brand Image

In recent years, the service sector has emerged as the main engine of economic growth. Competing companies have consistently offered higher-quality services and a great perceived brand image to win over customers and win their loyalty in the current fiercely competitive market. It has also been acknowledged that the core of marketing and advertising research is brand image research. It has been crucial in establishing long-term brand equity in addition to serving as a principle for tactical marketing mix issues. Brand image was defined as the buyer's perceptions of the brand as revealed by the associations they have with it (Sao Mai DAM, 2021). The primary driver of a brand's success is its ability to affect a customer's degree of satisfaction and purchase choice, which retains them loyal to the brand and encourages them to recommend it to their friends, family, and other acquaintances (Sarfranz Ashraf, 2018).

Perceived Value

Perceived value is a central domain in the healthcare sector, influencing patient satisfaction, decision-making, and competitive advantage (Ashraf, 2018; Rahmani, 2017). It reflects a consumer's overall assessment of service utility, balancing perceived benefits against costs, including time and money (Caruana, 2000; Saglık Kurumlarında Parasal Olmayan Maliyetler, 2013). Patients evaluate service performance, reliability, economy, and safety when determining value (Ashraf, 2018). Managers strive to deliver value by offering low prices, desired features, quality for money, and overall benefits received (Caruana, 2000). In today's competitive healthcare market, enhancing perceived value is essential for improving patient satisfaction and organizational success (Rahmani, 2017).

Patient Loyalty

Patient loyalty refers to a patient's intention to continue using the same hospital's services, reflecting commitment beyond repeated visits (Wang, 2011). It distinguishes truly loyal patients from those returning despite dissatisfaction

(Wang, 2011). Brand images play a strategic role in shaping loyalty, influencing perceptions through lasting brand associations (DAM, 2021). A strong brand image supports long-term equity and marketing success (DAM, 2021). Cost and service quality together impact loyalty, with patients preferring quality services at affordable rates (AlOmari, 2022). Perceived value, closely linked to satisfaction and loyalty, reflects a patient's evaluation of service benefits relative to costs (Sağlık Kurumlarında Parasal Olmayan Maliyetler, 2013). Higher satisfaction also predicts better clinical outcomes and reduced malpractice risk (Kessler, 2009).

Mediating Role of Brand Image

In the marketing literature, brand image has been a topic of great interest. Additionally, brand image is a strong marketing strategy and has been crucial in helping businesses stand out from one another. Similarly, it has been acknowledged that the core of marketing and advertising research is brand image research. It has been crucial in establishing long-term brand equity in addition to serving as a principle for tactical marketing mix issues. Declared that impressions of the brand, as shown by the brand associations that remain in the buyer's mind, constitute the brand image (Sao Mai DAM, 2021). The primary driver of a brand's success is its ability to affect a customer's degree of satisfaction and purchase choice, which retains them loyal to the brand and encourages them to recommend it to their friends, family, and other acquaintances (Sarfranz Ashraf, 2018).

Mediation of Brand Image between Service Quality and Patient Satisfaction

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Mediation of Brand Image between the Cost of Care and Patient Satisfaction

In recent years, the service sector has emerged as the main engine of economic growth. Competing companies have consistently offered higher-quality services and a great perceived brand image to win over customers and win their loyalty in the current fiercely competitive market. It has also been acknowledged that the core of marketing and advertising research is brand image research. It has been crucial in establishing long-term brand equity in addition to serving as a principle for tactical marketing mix issues. Brand image was defined as the buyer's perceptions of the brand as revealed by the associations they have with it (Sao Mai DAM, 2021). Because they seek to build lasting relationships with their clients, service providers aim to keep their current clientele. The new ones appear when clients stop purchasing services. However, because of the costs of advertising, preferential treatment, and the auction, finding new clients is very costly. The primary driver of a brand's success is its ability to affect a customer's degree of satisfaction and purchase choice, which retains them loyal to the brand and encourages them to recommend it to their friends, family, and other acquaintances (Sarfranz Ashraf, 2018).

Mediating Role of Perceived Value

Since perceived value is intimately related to ideas like purchase intentions, customer satisfaction, and loyalty, it becomes a crucial component that requires research and comprehension in both marketing and management contexts. Perceived value is the term used to describe how people view a product's true worth rather than its price. In relation to the perceived value by customers (Sağlık Kurumlarında Parasal Olmayan Maliyetler, Non-Monetary Costs, Hospital Perceived Value and Patient Satisfaction in Health Institutions, 2013)

Mediation of Perceived Value between Service Quality and Patient Satisfaction

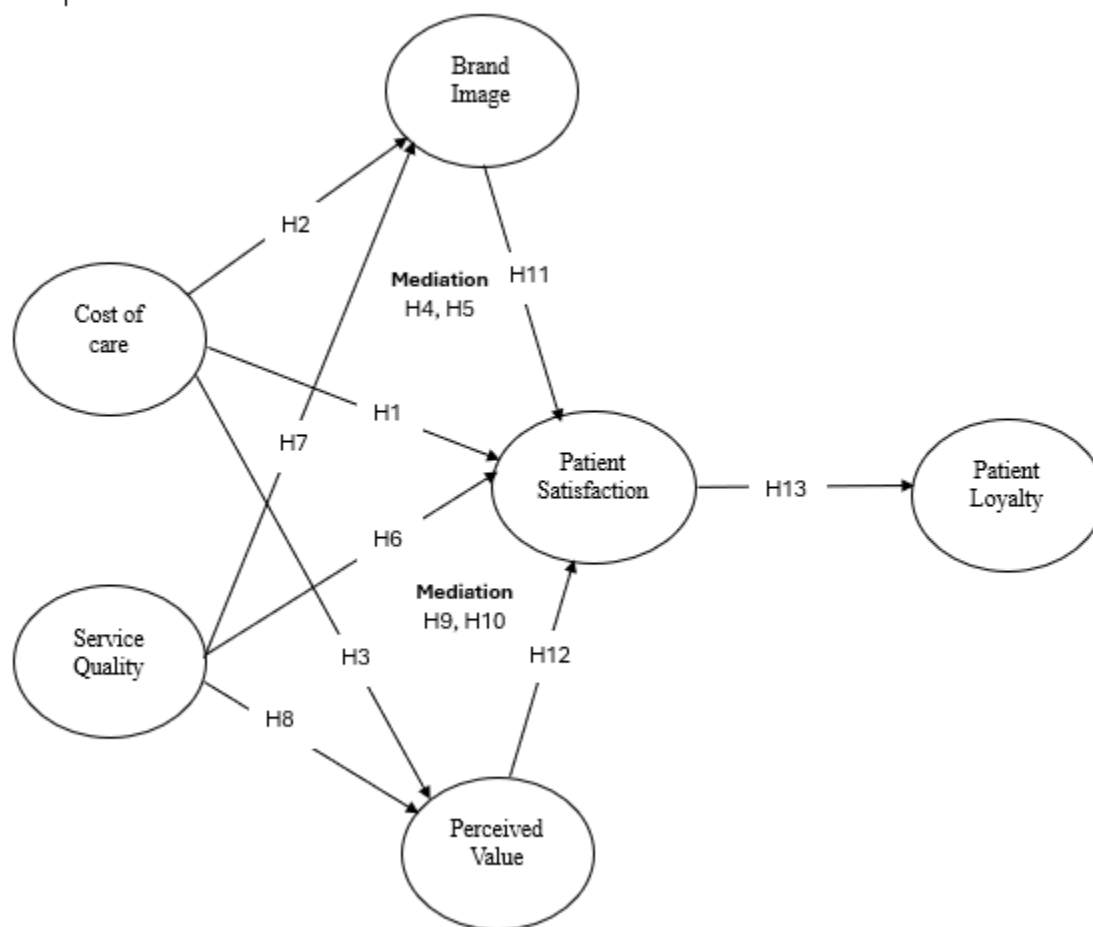
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Mediation of Perceived Value between Cost of Care and Patient Satisfaction

Only when client satisfaction exceeds the mean value do switching costs become a significant factor. The kind of patients and the features of the hospitals used for the analysis have an impact on the relationship between cost and service quality. Elements that ensure good service quality at reduced costs while having a significant impact on patient happiness. They stated that it was unclear how to both lower service costs and enhance performance ([AlOmari, 2022](#)). The connection between the cost and quality of healthcare 3–9, there is a complicated link between these two variables. It was also discovered that the relationship between cost and quality was complicated, with costs rising at lower quality levels and falling at higher quality levels. Measuring healthcare quality from the consumer's point of view has gained more attention recently due to patient satisfaction, which is a measure of patients' subjective experiences with the healthcare system ([Wang, 2008](#)). It is anticipated that budget-holding initiatives may impact care quality. Delegating budgetary and decision-making authority can, on the one hand, improve service delivery units' capacity to address local requirements and boost their incentive to do so. However, the necessity to save money and stick to a set budget might lower the quality of treatment by having a detrimental impact on non-urgent procedures, service accessibility, and comprehensiveness ([Nirel, 1998](#)). Based on the discussion made above, the following hypotheses may be developed, leading to the research framework given as Figure 1.

- H₁: Perception of cost of care positively influences patient satisfaction.
- H₂: Perception of cost of care positively influences brand image.
- H₃: Perception of cost of care positively influences perceived value.
- H₄: The relationship between cost of care and patient satisfaction is mediated by brand image.
- H₅: The relationship between cost of care and patient satisfaction is mediated by perceived value.
- H₆: Perception of service quality positively influences patient satisfaction.
- H₇: Perception of service quality positively influences brand image.
- H₈: Perception of service quality positively influences perceived value.
- H₉: The relationship between service quality and patient satisfaction is mediated by brand image.
- H₁₀: The relationship between service quality and patient satisfaction is mediated by perceived value.
- H₁₁: Perception of brand image positively influences patient satisfaction.
- H₁₂: Perception of perceived value positively influences patient satisfaction.
- H₁₃: Patient satisfaction positively influences patient loyalty.

Figure 1
Research Framework



Methods and Materials

This study adopts a cross-sectional, quantitative, and analytical survey design to examine the influence of care costs and service quality on patient satisfaction and loyalty, with perceived value and brand image as mediators. The choice of this design aligns with the research objectives to explore relationships between variables at a single point in time (George, 2004; Omair, 2015). Quantitative research is appropriate as it tests hypotheses and evaluates factor-outcome relationships (Sutton, 2013). The study population includes patients (of all age groups) and their attendants attending inpatient (IPD), emergency (ER), and outpatient (OPD) departments of a secondary or tertiary care hospital.

Healthcare staff, including doctors, nurses, paramedics, and allied professionals, were excluded (Acharya *et al.*, 2013). A non-probability convenience sampling technique was used, selecting participants based on their availability and willingness to participate at the time of data collection (Albandoz, 2001; Acharya *et al.*, 2013). This method is widely used in clinical settings due to cost-effectiveness and ease of access, but may introduce selection bias (Acharya *et al.*, 2013). The sample size was determined based on the subject-to-variable ratio recommended by Hair *et al.* (2010), suggesting 5–10 respondents per variable. With six study variables, a minimum of 30–60 participants were needed. This study collected data from 180 patients from Karachi's public and private hospitals, achieving a 30:1 ratio, ensuring reliability for factor analysis and hypothesis testing.

Variables and Measures

This study focused on six key variables: perceived value, brand image, cost of care, service quality, patient satisfaction, and patient loyalty. A 5-point Likert scale was used to ensure consistency and reliability in data collection. Cost of Care (2 items) and Service Quality (4 items) were adapted from [AlOmari \(2022\)](#). Brand Image (5 items), also from [AlOmari \(2022\)](#), measured hospital reputation and trustworthiness. The Perceived Value (3 items) scale, adapted from [Ashraf \(2018\)](#), assessed patients' perceived benefit-cost balance. Patient Satisfaction (3 items) and Patient Loyalty (6 items) were sourced from [DAM \(2021\)](#), as given in Table 1.

Table 1

Study Measures

No	Variable Name	No. of Items	Likert Type	Source
1	Cost of Care	2	5-Point	(AlOmari, 2022)
2	Service Quality	4	5-Point	(AlOmari, 2022)
3	Brand Image	5	5-Point	(AlOmari, 2022)
4	Perceived Value	3	5-Point	(Sarfraz Ashraf, 2018)
5	Patient Satisfaction	3	5-Point	(Sao Mai DAM,2021)
6	Patient Loyalty	6	5-Point	(Sao Mai DAM,2021)

Results and Findings

Demographic Profile of Respondents

The healthcare sector has a longer history of using demographic and closely related socioeconomic data for planning, reporting, and analysis than the private sector. (Whicker, 1999). Table No. 4.1. The study's demographic analysis of the 180 participants (by gender, age, marital status, and economic level) sheds light on their distribution. There is balanced gender representation in the sample, with 48% of the participants being men (n=86) and 52% being women (n=94). The highest percentage of responders (42.2%, n=76) is in the 20–30 age bracket, with the 31–40 age group coming in second (35.3%, n=64). The remaining 8.8% (n=16) are over 50, while a lesser fraction (13.7%, n=25) is in the 41–50 age range. According to this distribution, most of the respondents appear to be young, which could affect how they view healthcare services. About the respondents' marital status, 52% (n=94) are married, compared to 48% (n=86) who are single. A variety of viewpoints on encounters with healthcare services are made possible by the almost equal distribution of marital status. Based on the income distribution, the most frequent income range is between 25,000 and 55,000, which is earned by 49.1% (n=88) of the participants. In contrast, 17.6% (n=32) make between 56,000 and 85,000, 13.7% (n=25) make between 86,000 and 110,000, and 19.6% (n=35) make more than 110,000. A wide economic representation is ensured by this distribution across income levels, which could affect patient expectations and satisfaction with medical care.

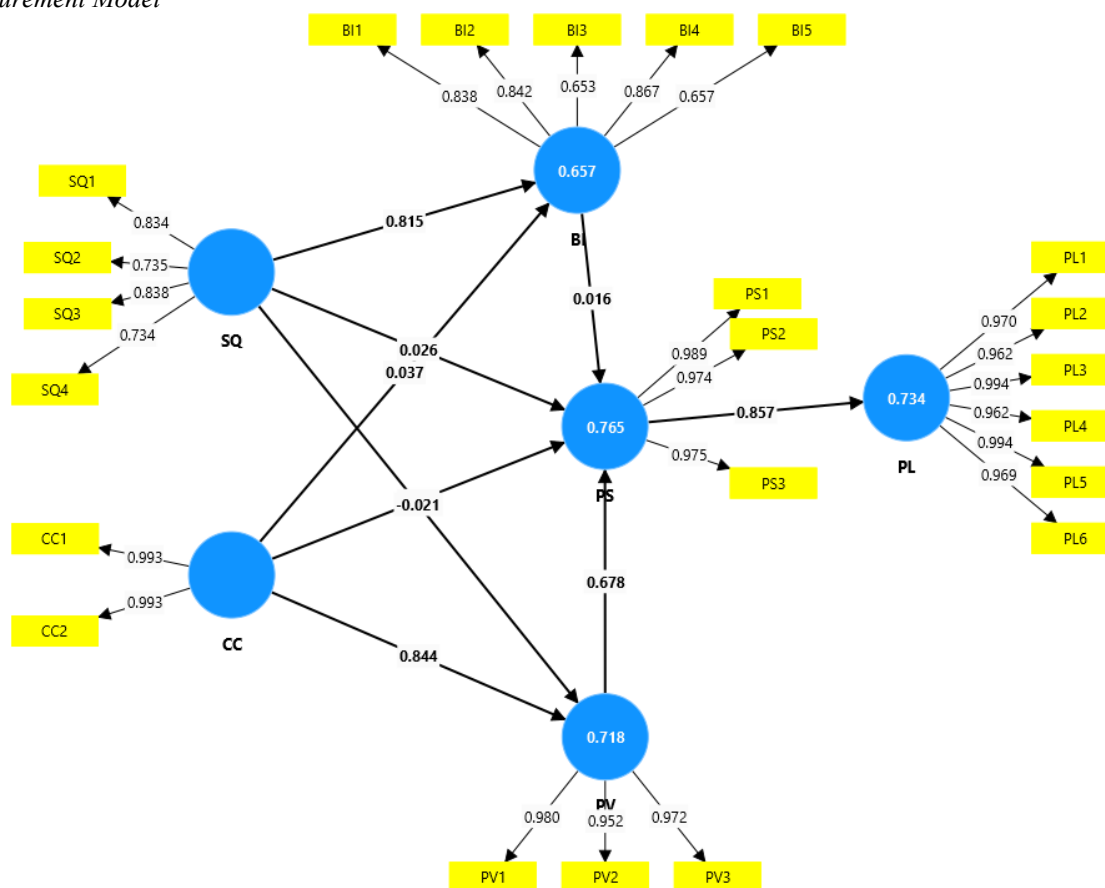
Table 2

Demographic Profile

Category	Item	Frequencies	Percentage
Gender	Male	86	48
	Female	94	52
Age	20-30	76	42.2
	31-40	64	35.3
	41-50	25	13.7
	Above 50	16	8.8

Marital Status	Single	86	48
	Married	94	52
Income	25,000-55,000	88	49.1
	56,000-85000	32	17.6
	86,000-110,000	25	13.7
	Above 110,000	35	19.6

Figure 2
Measurement Model



The measurement model assessment of the study exhibits strong evidence of reliability and convergent validity. Cronbach's alpha (α) values for all constructs exceed the recommended 0.70 threshold, as per [Nunnally & Bernstein, \(1994\)](#), demonstrating satisfactory internal consistency. Specifically, Brand Image ($\alpha=0.831$), Service Quality ($\alpha=0.797$), Cost of Care ($\alpha=0.986$), Perceived Value ($\alpha=0.967$), Patient Satisfaction ($\alpha=0.979$), and Patient Loyalty ($\alpha=0.990$) all show high reliability. Composite Reliability (CR) values also range from 0.866 to 0.993, further confirming the internal consistency of the measurement model ([Hair et al., 2022](#); [Sarstedt et al., 2021](#)). The Average Variance Extracted (AVE) for each construct is above 0.50, ranging from 0.604 (Brand Image) to 0.986 (Cost of Care), meeting the minimum requirement for convergent validity ([Fornell & Larcker, 1981](#)).

In terms of factor loadings, most indicators load strongly on their respective constructs, with values above the acceptable 0.70 threshold (Hair *et al.*, 2017, 2022; Sarstedt *et al.*, 2021). While some items, such as BI3 (0.653), BI5 (0.657), and SQ2 (0.735), load slightly lower, they remain within the permissible range for exploratory research, especially when overall reliability and AVE values are satisfactory. The particularly high factors for Cost of Care (CC1 and CC2 at 0.993 each) and Patient Loyalty (ranging from 0.962 to 0.994) suggest strong reliability for these constructs. Overall, the measurement model shows robust psychometric properties, providing a sound foundation for further structural model testing and hypothesis evaluation in the context of patient satisfaction and loyalty in healthcare services.

Table 3
Loadings, Reliability, and Convergent Validity

Factor Loadings	BI	α	CR	AVE
BI1	0.838	0.831	0.883	0.604
BI2	0.842			
BI3	0.653			
BI4	0.867			
BI5	0.657			
CC1	0.993	0.986	0.993	0.986
CC2	0.993			
PL1	0.970			
PL2	0.962			
PL3	0.994			
PL4	0.962	0.990	0.992	0.951
PL5	0.994			
PL6	0.969			
PS1	0.989			
PS2	0.974			
PS3	0.975			
PV1	0.980	0.979	0.986	0.959
PV2	0.952			
PV3	0.972			
SQ1	0.834			
SQ2	0.735			
SQ3	0.838	0.967	0.978	0.938
SQ4	0.734			

Brand Image (BI), Service Quality (SQ), Cost of care (CC), Perceived value (PV). Patient satisfaction (PS) and Patient loyalty (PL). Cronbach alpha (α) ≥ 0.7 , Composite Reliability (CR) ≥ 0.7 , Average Variance Extract (AVE) ≥ 0.5

Discriminant Validity

Heterotrait-Monotrait Ratio (HTMT)

The majority of the HTMT values in this investigation are below the 0.85 cut-off, suggesting strong discriminant validity (Lay, 2021). This reflects a stronger differentiation of BI, as the correlations between it and other components vary from 0.049 to 0.099. Perceived value (PV) and patient loyalty (PL) have the highest HTMT value (0.927), is just above the 0.90 threshold, and exhibits a possible overlap between these categories that would need more investigation. The brand image (BI) and service quality (SQ) HTMT value (0.99) is higher than the cut-off, suggesting that these constructions might not be sufficiently different (Hair *et al.*, 2017; Henseler *et al.*, 2015).

Table 4
Heterotrait-Monotrait Ratio

	BI	CC	PL	PS	PV	SQ
BI						
CC	0.097					
PL	0.056	0.845				
PS	0.049	0.811	0.87			
PV	0.086	0.866	0.927	0.888		
SQ	0.99	0.174	0.127	0.113	0.174	

Fornell-Larcker Criteria

The Average Variance Extracted (AVE) is another important criterion to ensure discriminant validity; the square root of the AVE for each construct must be higher than the correlations between that construct and any other construct. (Larcker, 1981). As shown in Table 4, the Perceived Value (PV), Patient Loyalty (PL), Service Quality (SQ), Cost of Care (CC), and Brand Image (BI). The numbers, which reflect different degrees of strength in the correlations between the variables, range from 0.787 to 0.993. Moreover, Brand Image (BI) has a strong positive correlation (0.777) with Service Quality (SQ), whereas Cost of Care (CC) has a very high positive correlation (0.993) with itself. These findings imply that a stronger brand image is associated with higher service quality. Strong correlations are often defined as those with values between 0.7 and 0.9, and very strong correlations are defined as those with values over 0.9. According to standards on correlation strength, correlations above 0.7 are typically regarded as strong, and values above 0.9 imply very strong associations (Cohen, 1988). Though they indicate weaker inverse links, the somewhat negative correlations (e.g., -0.088 between Brand Image and Cost of Care, or -0.153 between Service Quality and Perceived Value) are nevertheless worth investigating for their possible influence.

Table 5
Fornell-Larcker Criteria

	BI	CC	PL	PS	PV	SQ
BI	0.777					
CC	-0.088	0.993				
PL	-0.044	0.836	0.975			
PS	-0.035	0.797	0.857	0.979		
PV	-0.076	0.847	0.908	0.866	0.968	
SQ	0.81	-0.153	-0.109	-0.098	-0.15	0.787

Cross Loadings

The Table indicates mixed evidence of indicator discriminant validity. As recommended by [Hair et al. \(2019\)](#), each item should load highest on its intended construct compared to other constructs. The Brand Image (BI) indicators (BI1-BI5) load highest on BI, and Service Quality (SQ) items (SQ1-SQ4) load highest on SQ, supporting discriminant validity for these constructs. However, critical concerns emerge for Cost of Care (CC), Patient Loyalty (PL), Patient Satisfaction (PS), and Perceived Value (PV), where cross-loadings are high across multiple constructs. As shown in Table 6, the CC1 and CC2 show strong loadings on PL, PS, and PV, whereas the PL and PS items also cross-load heavily on CC and PV, which show an overlap among the indicators ([Fornell & Larcker, 1981](#); [Hair et al., 2019](#)).

Table 6
Cross Loadings

	BI	CC	PL	PS	PV	SQ
BI1	0.838	-0.082	-0.036	-0.03	-0.059	0.65
BI2	0.842	-0.035	0.012	0.016	-0.015	0.626
BI3	0.653	-0.065	-0.055	-0.045	-0.078	0.565
BI4	0.867	-0.081	-0.03	-0.026	-0.058	0.688
BI5	0.657	-0.074	-0.064	-0.053	-0.088	0.602
CC1	-0.088	0.993	0.842	0.803	0.855	-0.158
CC2	-0.085	0.993	0.818	0.779	0.827	-0.145
PL1	-0.05	0.807	0.97	0.836	0.876	-0.115
PL2	-0.039	0.796	0.962	0.815	0.867	-0.102
PL3	-0.045	0.841	0.994	0.859	0.912	-0.119
PL4	-0.038	0.799	0.962	0.808	0.877	-0.082
PL5	-0.045	0.841	0.994	0.859	0.912	-0.119
PL6	-0.038	0.805	0.969	0.835	0.869	-0.098
PS1	-0.033	0.804	0.865	0.989	0.874	-0.101
PS2	-0.024	0.762	0.821	0.974	0.829	-0.079
PS3	-0.046	0.774	0.829	0.975	0.839	-0.108
PV1	-0.076	0.865	0.926	0.884	0.98	-0.15
PV2	-0.076	0.772	0.833	0.789	0.952	-0.144
PV3	-0.068	0.82	0.875	0.838	0.972	-0.141
SQ1	0.696	-0.11	-0.055	-0.063	-0.097	0.834
SQ2	0.549	-0.122	-0.112	-0.077	-0.132	0.735
SQ3	0.722	-0.122	-0.067	-0.075	-0.107	0.838
SQ4	0.561	-0.131	-0.122	-0.101	-0.146	0.734

Explanatory Power of the Model

The coefficient of determination (R^2) values show substantial explanatory power within the model. Brand Image (BI) shows an R^2 of 0.657, indicating that 65.7% of its variance is explained by the predictors of the relevant construct. Patient Loyalty (PL) and Patient Satisfaction (PS) exhibit higher R^2 values of 0.734 and 0.765, respectively, reflecting strong predictive accuracy for these constructs. Perceived Value (PV) also shows a notable R^2 of 0.718, suggesting

significant variance explanation. The adjusted R^2 values for all constructs remain closely aligned with the R^2 values, confirming model stability and minimizing the risk of overestimation (Hair *et al.*, 2019).

Table 7
R²-Square and R² adjusted

	R-square	R-square adjusted
BI	0.657	0.656
PL	0.734	0.733
PS	0.765	0.764
PV	0.718	0.717

Structural Model

Smart PLS software was used to run a bootstrapping of 5000 sub-samples. A path coefficient analysis that displays the strength of the correlations between the independent and dependent variables, as well as the R-squared value, is part of the structural model. The significance level of the paths provided inside the structural model is ascertained using a bootstrapping resampling technique. Path coefficients, standard deviations, t-statistics, and p-values are used by the structural model to assess the proposed relationships between variables. P-values ($p < 0.05$ indicates statistical significance) and t-statistics (higher than 1.96 for a 95% confidence level) are used to assess the importance of associations (Joseph Franklin Hair, 2022). The results of the structural model show notable impacts in several areas. While Perceived Value considerably improves Patient Satisfaction ($\beta = 0.678$, $p = 0.000$), Cost of Care has a good impact on Brand Image ($\beta = 0.037$, $p = 0.017$) and a high impact on Perceived Value ($\beta = 0.844$, $p = 0.000$). Patient loyalty is substantially influenced by patient satisfaction ($\beta = 0.857$, $p = 0.000$), which emphasizes how crucial it is to keep satisfaction levels high for retention. Brand image is strongly positively impacted by service quality ($\beta = 0.815$, $p = 0.000$), although patient satisfaction ($p = 0.264$) and perceived value ($p = 0.189$) are not directly impacted. The impact of Cost of Care on Patient Satisfaction ($p = 0.066$) and Brand Image on Patient Satisfaction ($p = 0.389$) are examples of non-significant associations that imply these categories may function through mediators rather than direct impacts.

Table 8
Structural Model

	Path Coefficient	S.D.	T values	P values
BI → PS	0.016	0.018	0.861	0.389
CC → BI	0.037	0.016	2.385	0.017
CC → PS	0.228	0.124	1.837	0.066
CC → PV	0.844	0.048	17.53	0.000
PS → PL	0.857	0.047	18.30	0.000
PV → PS	0.678	0.125	5.443	0.000
SQ → BI	0.815	0.037	22.10	0.000
SQ → PS	0.026	0.023	1.117	0.264
SQ → PV	-0.021	0.016	1.314	0.189

Mediation Analysis

Specific Indirect Effects: Investigating whether a particular data set has a mediational structure is done using a group of statistical methods known as mediation analysis. The mediation structure proposes a particular conceptualization

of the process via which an independent variable may affect a dependent variable—not directly, but through an intermediary process that is recorded by the mediator variable (Iacobucci, 2008). The findings indicate that Perceived Value strongly mediates the relationship between Cost of Care and both Patient Satisfaction and Loyalty. Perceived Value → Patient Satisfaction → Patient Loyalty ($\beta = 0.581$, $p = 0.000$) and Cost of Care → Perceived Value → Patient Satisfaction → Patient Loyalty ($\beta = 0.490$, $p = 0.000$) are both highly significant.

The high indirect effect of Cost of Care → Perceived Value → Patient Satisfaction ($\beta = 0.572$, $p = 0.000$) further supports the significance of perceived value in influencing satisfaction. Nevertheless, many indirect effects, including Cost of Care → Brand Image → Patient Satisfaction ($p = 0.446$) and Service Quality → Brand Image → Patient Satisfaction → Patient Loyalty ($p = 0.394$), are not significant, indicating that these pathways do not significantly mediate relationships in the model. Service Quality does not significantly affect loyalty through these indirect channels, as evidenced by the relationships between Service Quality → Perceived Value → Patient Satisfaction → Patient Loyalty ($p = 0.196$) and Service Quality → Patient Satisfaction → Patient Loyalty ($p = 0.249$).

Table 9
Specific Indirect Effects

	Path Coefficient	S.D.	T statistics	P values
CC → BI → PS → PL	0.000	0.001	0.768	0.442
PV → PS → PL	0.581	0.116	4.990	0.000
CC → BI → PS	0.001	0.001	0.763	0.446
SQ → PS → PL	0.022	0.019	1.153	0.249
SQ → PV → PS	-0.014	0.011	1.309	0.191
SQ → BI → PS	0.013	0.015	0.846	0.398
SQ → BI → PS → PL	0.011	0.013	0.853	0.394
CC → PV → PS → PL	0.490	0.090	5.463	0.000
BI → PS → PL	0.013	0.015	0.869	0.385
CC → PS → PL	0.195	0.109	1.789	0.074
CC → PV → PS	0.572	0.094	6.061	0.000
SQ → PV → PS → PL	-0.012	0.009	1.294	0.196

Total Direct effects: High correlations between the elements of the total direct effects analysis are demonstrated by the path coefficients, T statistics, and P values. The magnitude and importance of direct relationships between variables are shown by the total direct effects. If the t-statistic is greater than 1.96 and the p-value is less than 0.05, the link is deemed significant (Joseph Franklin Hair, 2022).

Cost of Care → Patient Satisfaction ($\beta = 0.573$, $p = 0.000$), Cost of Care → Patient Loyalty ($\beta = 0.686$, $p = 0.000$), and Perceived Value → Patient Loyalty ($\beta = 0.581$, $p = 0.000$) are all highly significant, according to the results, indicating that Patient Satisfaction and Loyalty are significantly influenced by both Cost of Care and Perceived Value. Service Quality → Patient Satisfaction ($p = 0.925$), Brand Image → Patient Loyalty ($p = 0.385$), and Service Quality → Patient Loyalty ($p = 0.206$) are not statistically significant, indicating that neither Brand Image nor Service Quality directly affects Patient Satisfaction or Loyalty.

Table 10
Total Direct Effects

	Path coefficient	S.D.	T statistics	P values
BI → PL	0.013	0.015	0.869	0.385
CC → PL	0.686	0.076	8.999	0.000
CC → PS	0.573	0.094	6.073	0.000
PV → PL	0.581	0.116	4.990	0.000
SQ → PL	0.021	0.016	1.265	0.206
SQ → PS	-0.002	0.016	0.094	0.925

Discussion

This study examined the relationship between service quality and care costs and patient satisfaction and loyalty, using perceived value and brand image as mediators. The findings suggest that the cost of care has a significant impact on patient satisfaction and perceived value, both of which affect patient loyalty. The direct correlation between service quality and patient satisfaction was not found to be statistically significant, which goes against the widely accepted notion that service quality plays a substantial role in determining patient satisfaction. Perceived value is a crucial component in comprehending the relationship between patient satisfaction and healthcare expenses, according to the mediation study. If patients feel that the expense of medical services is reasonable and justified, they are more likely to be satisfied and to stay loyal. However, brand image did not appear to mediate the relationship between patient satisfaction and care costs, which suggests that factors other than perceptions of brand reputation may affect patient satisfaction and loyalty. The positive association that service quality has with brand image lends more weight to the idea that a healthcare institution's reputation is determined by the quality of care it offers. However, the results of the study did not support the hypothesis that brand image mediates the relationship between service quality and patient happiness or that service quality influences perceived value. These findings highlight that while delivering high-quality care may contribute to the creation of a strong reputation for healthcare institutions, patients' perceived value may be impacted by financial constraints more so than just care quality. Another important area that requires further attention is the role that psychological and emotional factors have in patient satisfaction and loyalty. Patients often form emotional bonds with healthcare providers because of their experiences and trust in the institution. A patient's experience of care can be significantly improved by a strong and compassionate relationship with healthcare providers, even when cost and service quality considerations are taken seriously. Future studies should investigate how emotional bonds and empathy-driven healthcare models affect patient satisfaction and loyalty since they can create long-lasting relationships between patients and healthcare professionals. Furthermore, the interplay of perceived value, brand image, treatment cost, and service quality highlights the importance of patient decision-making in healthcare settings. Side by side to be affordable, patients need the services that are reliable, efficient, and conveniently accessible. Hospitals should attempt to integrate digital healthcare solutions, such as online appointment scheduling, telemedicine, and electronic medical records, to enhance the patient experience. Government regulations and healthcare laws should also safeguard the patient's needs and rights to reduce gaps in service cost and accessibility. By addressing these interconnected issues and finding a long-term balance between affordability and high-quality care, hospitals can improve patient satisfaction and loyalty.

Conclusion

This study provides empirical proof that perceived value in healthcare has a major effect on patient satisfaction and loyalty. It also shows that service quality has a positive impact on brand image, even though it does not directly affect customer satisfaction. These findings focus on the critical role that affordability and perceived value play in shaping patient experiences. A hospital's brand image improves its reputation, but unless it is paired with a favorable cost-value assessment, this does not always translate into patient satisfaction. Healthcare providers should prioritize policies that balance price and service quality to increase patient satisfaction and retention. The study also emphasizes

how crucial it should be considered in both service quality and financial accessibility when evaluating patient loyalty and happiness. Even if the overall quality of the services is not great, patients are more likely to stick with a healthcare provider if they believe that the cost of care is fair and justified to the level of treatment. Because it emphasizes the necessity of putting in place cost-effective healthcare models without sacrificing care quality, this insight is especially pertinent for legislators and healthcare administrators. In addition to that, the findings highlight that while perceptions are influenced by brand image, patient satisfaction is not directly impacted by it. Therefore, healthcare businesses should balance on the holistic methods that integrate affordability, service effectiveness, and patient engagement to improve overall patient experiences. Future studies can delve deeper into these topics and offer a more complete understanding of the factors impacting patient loyalty by incorporating patient trust, technology developments, and healthcare accessibility into satisfaction models.

Limitations

This study has several shortcomings despite its informative findings. Because the study was conducted in Karachi, Pakistan, which is a big metropolitan city, the findings may lack generalizability to other regions with different healthcare systems and socioeconomic conditions. Moreover, although the study provides useful information, its sample size of 180 patients may not fully capture the complexity of patient experiences across a range of demographics. This study's cross-sectional methodology also limits the capacity to reflect causality among the variables under investigation because it only collects data at one moment in time. The study relied on self-reported data, which is subject to personal and environmental biases of patients. The other potential mediators, such as patient involvement and trust in medical practitioners, that may provide a deeper understanding of patient loyalty and satisfaction, are another disadvantage. Future research should bridge these limitations by using different study designs, such as longitudinal designs, with a bigger sample size, and more importantly by adding other variables that potentially influence patient attitudes and behaviors.

Recommendations

The study's findings provide the development of several significant recommendations meant to improve patient satisfaction and loyalty. Hospitals should focus on increasing perceived value using cost-effective care and transparent and fair pricing structures to lower the cost of healthcare for patients. Enhancing service quality is crucial even when it has no direct impact on customer satisfaction in a cost-constrained setup. Hospitals must make sure that the quality of their services encourages effectiveness, reliability, and a patient-centered approach. Marketing strategies should prioritize both cost and service performance rather than relying solely on brand recognition. For better understanding and to meet the requirements of their patients, healthcare practitioners should also implement patient-centric policies and protocols, which should include the use of feedback mechanisms. To improve patient relations and service delivery, regular staff training should be carried out. Finally, incorporating digital health technology like telemedicine, online appointment scheduling, and digital billing systems will improve accessibility and expedite patient encounters, which will ultimately result in increased patient satisfaction and enduring loyalty.

Directions for Future Research

Different study settings for example, the in-patients or critical care patients, different population centres/cities, are the advisable new research directions. A varied sample size should be administered in future research to build on the findings of this study and increase the results' generalizability. For a better understanding of changing healthcare user expectations, longitudinal studies could be conducted to look at trends in patient satisfaction and loyalty over time. Future research should also investigate the effects of emerging medical technologies on patient experiences, such as artificial intelligence and telemedicine. Comparative studies carried out in various cultural contexts and healthcare systems would provide additional insight into the ways that various factors influence patient perspectives globally. By addressing these concerns, future research can contribute to the development of all-encompassing, patient-centred healthcare models that balance accessibility, quality, and affordability.

Declarations

Ethical Approval and Consent to Participate: This study strictly adhered to the Declaration of Helsinki and relevant national and institutional ethical guidelines. Informed consent was not required, as secondary data available on websites was obtained for analysis. All procedures performed in this study were by the ethical standards of the Helsinki Declaration.

Consent for Publication: The authors give their consent for publication.

Availability of Data and Materials: Data will be made available upon request from the corresponding author.

Competing Interest: The authors confirm that there are no conflicts.

Funding: No research support grant applies.

Authors' Contribution: MSK, MSB: conceived the idea and literature review. MSSA: collected the data. MSK, MSB, MSSA: developed methodology, did data analysis, wrote and finalized the draft, proofread, edited, and submitted the final draft for publication.

Acknowledgement: The authors gratefully acknowledge the respondents and fellows for their cooperation in conducting this study.

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