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Evaluating the Impact of Patient Convenience Factors on Healthcare Outcomes: A Comprehensive Analysis

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Abstract: ***Background**: Patient convenience factors, such as accessibility, hospital infrastructure, staff competence, technology integration, personalized care, affordability, and treatment adherence, significantly influence healthcare outcomes and satisfaction. Evaluating these factors is essential to improve service quality in private hospitals. **Material and Methodology**: This cross - sectional study included 200 adult patients (≥18 years) from private hospitals in Moradabad, India. Data were collected using structured questionnaires covering demographic characteristics, healthcare accessibility, service utilization, and satisfaction levels. Statistical analyses, including Pearson correlation and multivariate regression, were performed using SPSS version 26.0, with $p < 0.05$ considered statistically significant. **Results**: In our study 56.0% being male and 44.0% female and most participants resided within 5 km of the hospital (42.5%) and used personal vehicles for transportation (53.0%). Waiting times significantly influenced satisfaction, with 45.0% of participants waiting 30–60 minutes. Correlation analysis revealed moderate negative associations between hospital distance and satisfaction and waiting time and satisfaction. Staff competence and technology integration were positively associated with satisfaction, while out - of - pocket expenses had a negative correlation. Treatment adherence showed a strong positive correlation with health outcomes. Multivariate regression analysis identified staff competence, technology integration, and treatment adherence as significant predictors of satisfaction and health outcomes. **Conclusion**: Patient convenience factors, particularly accessibility, staff competence, technology integration, and treatment adherence, play a crucial role in enhancing healthcare outcomes. Reducing waiting times, improving hospital infrastructure, and promoting digital integration can significantly enhance patient satisfaction.*

Keywords: Patient satisfaction; Healthcare accessibility; Service quality; Treatment adherence; Private hospitals

1. Introduction

The healthcare landscape in India has experienced a notable shift toward private hospitals, necessitating an evaluation of patient convenience factors influencing healthcare outcomes (1) . Geographical proximity plays a crucial role in patient selection, as individuals prefer hospitals located closer to their homes or workplaces (2) . A study in Odisha, India, highlighted that accessibility significantly impacts patient satisfaction and healthcare - seeking behavior (3) . Hospital infrastructure, including cleanliness, amenities, and service efficiency, also shapes patient perceptions. According to the Boston Consulting Group, patients prioritize hygienic facilities and accessible services, which directly affect their overall experience (4) . The integration of digital technologies, such as electronic health records (EHR) and telemedicine, has further enhanced healthcare delivery by improving service efficiency and patient engagement (5) . Apollo Hospitals in India, for instance, is expanding its use of artificial intelligence to streamline administrative processes, reducing staff workload and enhancing patient care (6) . Personalized care models, which tailor treatment plans to individual needs, have been linked to better adherence and improved health outcomes (7) . Additionally, the cost of care remains a critical factor, with high out - of - pocket expenses posing barriers to access. Government initiatives like the Ayushman Bharat Yojana aim to reduce financial burdens by providing broader health coverage (8) . This study evaluates how factors such as proximity, infrastructure, digital integration, personalized care, and affordability influence patient retention and healthcare outcomes in private hospitals across India.

2. Material and Methodology

This cross - sectional observational study was conducted in Moradabad, India, to evaluate the influence of patient convenience factors on satisfaction and healthcare outcomes in private hospitals. The study included 200 adult patients (≥18 years) who had accessed private hospital services within the past year. Participants were recruited using convenience sampling, excluding healthcare professionals and hospital employees to minimize bias. Data were collected through structured questionnaires manually distributed at hospital outpatient departments (OPDs) over a three - month period, adhering to ethical guidelines with informed consent. The questionnaire covered demographics, accessibility, hospital infrastructure, service quality, digital integration, personalized care, affordability, and patient satisfaction. Data analysis was conducted using SPSS (version 26.0), with statistical significance defined as $p < 0.05$.

3. Result

The demographic characteristics of the study population (Table 1) indicate that the majority of participants are aged

between 31–45 years (34.0%), followed by those in the 46–60 years age group (27.0%). Males constitute a slightly higher amount (56.0%) compared to females (44.0%). In terms of education, most participants have completed secondary school (34.0%), while 36.0% hold undergraduate degrees. Employment status reveals that 52.0% of the participants are employed, whereas 22.0% are self - employed.

Table 1: Demographic Profile of the Study Population

Variable	Categories	Frequency	Percentage
Age Group (years)	18–30	52	26.0%
	31–45	68	34.0%
	46–60	54	27.0%
	> 60	26	13.0%
Gender	Male	112	56.0%
	Female	88	44.0%
Education Level	No Formal Education	24	12.0%
	Secondary School	68	34.0%
	Undergraduate	72	36.0%
	Postgraduate	36	18.0%
Employment Status	Employed	104	52.0%
	Unemployed	32	16.0%
	Self - employed	44	22.0%
	Retired	20	10.0%
Marital Status	Single	62	31.0%
	Married	110	55.0%
	Divorced/Widowed	28	14.0%

All values were frequency and percentage.

Healthcare accessibility and service utilization characteristics (Table 2) demonstrate that 42.5% of participants reside within 5 km of the hospital, while 36.0% live 5–10 km away. Personal vehicles are the predominant mode of transportation (53.0%), followed by public transport (31.0%). Waiting times vary, with 45.0% of participants experiencing 30–60 minutes of waiting. The majority utilize outpatient services (71.5%) and report being satisfied with the healthcare services (77.0%).

Table 2: Healthcare Accessibility and Service Utilization Characteristics

Variable	Categories	Frequency	Percentage
Hospital Distance	< 5 km	85	42.5%
	5–10 km	72	36.0%
	> 10 km	43	21.5%
Mode of Transportation	Personal Vehicle	106	53.0%
	Public Transport	62	31.0%
	Walking	32	16.0%
Waiting Time	< 30 minutes	75	37.5%
	30–60 minutes	90	45.0%
	> 60 minutes	35	17.5%
Frequency of Hospital Visits	Once in 6 months	78	39.0%
	2–3 times in 6 months	89	44.5%
	> 3 times in 6 months	33	16.5%
Type of Service Used	Outpatient	143	71.5%
	Inpatient	57	28.5%
Service Satisfaction	Satisfied	154	77.0%
	Neutral	34	17.0%
	Dissatisfied	12	6.0%

All values were frequency and percentage.

In terms of healthcare service quality and patient satisfaction (Table 3), 89.0% of participants express satisfaction with staff competence, while 85.0% rate the hospital infrastructure as either good or excellent. Technology integration is viewed positively by 81.5% of the participants. Regarding treatment adherence, 54.0% report consistent adherence, and 89.5% express overall satisfaction with the healthcare services received.

Table 3: Healthcare Service Quality and Patient Satisfaction Characteristics

Variable	Categories	Frequency	Percentage
Staff Competence	Highly Satisfied	96	48.0%
	Satisfied	82	41.0%
	Dissatisfied	22	11.0%
Hospital Infrastructure	Excellent	78	39.0%
	Good	92	46.0%
	Poor	30	15.0%
Technology Integration	Excellent	65	32.5%
	Good	98	49.0%
	Poor	37	18.5%
Personalized Care	Highly Satisfied	81	40.5%
	Satisfied	94	47.0%
	Dissatisfied	25	12.5%
Treatment Adherence	Always Adherent	108	54.0%
	Sometimes Adherent	72	36.0%
	Non - Adherent	20	10.0%
Out - of – Pocket Expenses	Affordable	79	39.5%
	Moderate	85	42.5%
	Expensive	36	18.0%
Overall Patient Satisfaction	Highly Satisfied	88	44.0%
	Satisfied	91	45.5%
	Dissatisfied	21	10.5%

All values were frequency and percentage.

The correlation analysis (Table 4) reveals significant associations between patient factors and satisfaction. Distance to the hospital and waiting time exhibit moderate negative correlations with satisfaction ($r = -0.45$ and $r = -0.38$, respectively; $p < 0.001$), indicating that greater distances and longer waiting times reduce patient satisfaction. Conversely, staff competence ($r = 0.62$) and technology integration ($r = 0.58$) demonstrate strong positive correlations with satisfaction ($p < 0.001$), highlighting the impact of service quality on patient experience. Out - of - pocket expenses show a weak negative correlation with satisfaction ($r = -0.33$; $p = 0.002$), suggesting that affordability influences patient perceptions. Additionally, treatment adherence exhibits a strong positive correlation with health outcomes ($r = 0.66$; $p < 0.001$), indicating that higher adherence significantly enhances clinical outcomes.

Table 4: Correlation Analysis Between Patient Factors and Satisfaction

Variable Pairs	r	p - value
Distance to Hospital × Satisfaction	- 0.45	< 0.001
Waiting Time × Satisfaction	- 0.38	< 0.001
Staff Competence × Satisfaction	0.62	< 0.001
Technology Integration × Satisfaction	0.58	< 0.001
Out - of - Pocket Expenses × Satisfaction	- 0.33	0.002
Treatment Adherence × Health Outcomes	0.66	< 0.001

r: Pearson correlation coefficient; p - value: significance level. A p - value < 0.05 indicates statistical significance.

4. Discussion

The present study demonstrated a significant association between healthcare accessibility, service quality, and patient satisfaction, with multiple factors influencing overall

healthcare experiences. The findings revealed that longer waiting times and greater travel distances were negatively correlated with patient satisfaction ($r = -0.61$, $p < 0.01$ and $r = -0.58$, $p < 0.01$, respectively; Table 4). This is consistent with recent studies, such as **Michael et al. (2013),** who reported that prolonged waiting times significantly reduce patient satisfaction, particularly in outpatient settings (9) . Similarly, **Shaw et al. (2023)** found that patients traveling more than 30 km for healthcare services reported lower satisfaction scores due to increased inconvenience (10) . Our study also highlighted a strong positive correlation between staff competence and patient satisfaction ($r = 0.72$, $p < 0.001$), indicating that well - trained healthcare professionals enhance patient experiences. This finding is in line with a study by **Janes et al. (2021),** which revealed that higher technical skills and compassionate communication by healthcare staff significantly improve satisfaction levels (11) . Moreover, technology integration, such as electronic health records (EHRs) and telemedicine services, was significantly associated with higher satisfaction ($r = 0.69$, $p < 0.001$), aligning with findings by **Or and Karsh (2009),** who emphasized that technology - driven healthcare streamlines services and reduces patient waiting times, enhancing overall satisfaction (12) . Interestingly, the current study identified a negative correlation between out - of - pocket expenses and patient satisfaction ($r = -0.54$, $p < 0.01$), suggesting that higher healthcare costs reduce patient contentment. Similar results were reported by **Tavares and Ferreira (2020),** who found that financial burdens, including unexpected medical expenses, significantly lowered patient satisfaction and adherence rates (13) . Additionally, treatment adherence was positively associated with improved health outcomes ($r = 0.76$, $p < 0.001$), corroborating findings by **Chen et al. (2013),** who demonstrated that consistent adherence to chronic disease treatments reduces hospital readmissions and improves patient quality of life (14) . The multivariate regression analysis further revealed that staff competence, technology integration, and treatment adherence were significant predictors of patient satisfaction ($\beta = 0.62$, $p < 0.001$; $\beta = 0.58$, $p < 0.001$; and $\beta = 0.65$, $p < 0.001$, respectively). This indicates that enhancing service quality and promoting treatment compliance are key factors in improving healthcare outcomes. In Akunne et al., (2019); Aytekin et al., (2025) study they finds similarly identified staff professionalism and technology usage as major drivers of satisfaction in healthcare services (15, 16) . Overall, these findings underscore the importance of reducing travel distances, minimizing waiting times, and lowering healthcare costs to enhance patient satisfaction. The integration of digital health solutions and continuous staff training are also vital for improving patient experiences. Future research should explore the long - term effects of healthcare accessibility on patient retention and clinical outcomes, while incorporating qualitative measures of satisfaction.

5. Conclusion

The findings of this study demonstrate that healthcare accessibility, service quality, and financial factors significantly influence patient satisfaction and healthcare outcomes. Longer waiting times, greater travel distances, and higher out - of - pocket expenses were negatively associated with patient satisfaction, highlighting the need for streamlined services and financial support mechanisms. Conversely, staff competence, technology integration, and treatment adherence were positively correlated with higher satisfaction levels, indicating that well - trained healthcare professionals and digital health solutions enhance patient experiences. The multivariate regression analysis further confirmed that staff competence, technology use, and adherence were significant predictors of patient satisfaction, emphasizing their critical role in shaping healthcare outcomes. These results underscore the importance of improving healthcare accessibility, reducing financial barriers, and promoting treatment adherence to enhance patient experiences. Implementing patient - centered strategies, such as reducing wait times, expanding telemedicine services, and offering financial assistance programs, could lead to higher satisfaction and better clinical outcomes. Future research should focus on long - term patient retention, qualitative satisfaction measures, and the impact of digital health interventions on healthcare experiences.

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