Patient Satisfaction Outcomes: A Comparison between Public and Private Healthcare Services in the Twin Cities of Islamabad and Rawalpindi, Pakistan

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ABSTRACT

In contemporary healthcare, hospitals increasingly prioritize delivering quality services aligned with patient preferences and satisfaction. Patient satisfaction primarily hinges on the affordability, accessibility, and availability of services, influencing hospital selection. This study evaluates patient satisfaction across six hospitals—three public and three private—in Islamabad and Rawalpindi, using a modified Patient Satisfaction Questionnaire (PSQ) with an anticipated sample size of 250-300 patients through random sampling. The questionnaire covers seven categories: general satisfaction (GS), technical quality (TQ), interpersonal aspects (IP), communication (COM), financial aspects (FA), time spent (TS), and accessibility/availability (AA). Initial findings indicate high patient satisfaction ratings for access and availability (mean=3.03 out of 5), with interpersonal aspects ranking second highest (mean=2.66). Conversely, financial aspects and time spent received the lowest ratings (mean=1.00), highlighting areas of dissatisfaction. Technical quality and access prove significantly influential compared to other factors. Qualitative insights reveal patient recommendations to enhance medicine stocks, improve doctor and staff quality, and foster better patient-staff interactions. Addressing these areas could markedly enhance patient satisfaction. Recommendations include hospital improvements in seating, restroom cleanliness, water hygiene, time management, financial transparency, interpersonal communication, and regular satisfaction audits to refine service delivery. Enhancing these aspects aligns with patient expectations and contributes to overall satisfaction levels in healthcare settings.

Keywords: Health service research, patient satisfaction experience, health care quality, patient satisfaction questionnaire

INTRODUCTION

In the current period, one of the main concerns of hospitals is the provision of quality services considering patients' preferences and patient satisfaction outcomes. Patient satisfaction is largely driven by the affordability, accessibility, and availability of services, which significantly influence hospital selection criteria. According to [1], patient satisfaction has become a cornerstone of healthcare services, reflecting the expected outcome of medical care. In the modern world, patient satisfaction is a critical aspect of healthcare attention; however, its significance is not a recent phenomenon [2]. Understanding patient satisfaction provides valuable insights into areas needing improvement, thereby enhancing healthcare service quality. The literature on patient satisfaction offers essential background and insights into how patients perceive healthcare services.

Given the critical importance of service quality in Pakistan's healthcare sector, this study aims to compare the service quality between public and private hospitals. However, there is a dearth of literature and research comparing public and private hospital services in Pakistan. General observations suggest that patients

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generally report higher satisfaction levels with treatment at private hospitals compared to government/public hospitals. Unfortunately, research specifically comparing public and private hospitals in Islamabad is sparse. Existing studies often focus on facility comparisons from the perspective of hospital staff, neglecting patient perspectives.

This research fills a significant gap by conducting face-to-face patient interviews using a Patient Satisfaction Questionnaire (PSQ) with Likert scale responses. The PSQ comprises 45 questions covering patient characteristics, hospital or healthcare provider characteristics, and perceptions regarding accessibility, availability, and affordability of healthcare services. Through direct patient interviews and PSQ analysis, this study identifies aspects of service delivery that patients find unsatisfactory and provides recommendations for improvement.

The underutilization of public healthcare facilities can be attributed to economic conditions, low healthcare expenditure as a percentage of GDP, high illiteracy rates, cultural factors, lack of patient satisfaction and trust in government healthcare, inadequate infrastructure and sanitation, geographical inaccessibility, political indifference, and insufficient public health policies.

Despite constitutional obligations to provide quality healthcare, there is a notable absence of patient input in healthcare delivery. Studies indicate lower patient satisfaction with government healthcare facilities and a preference for private alternatives across all income levels. While some studies on patient satisfaction exist in Pakistan, they are often localized and fail to represent national-level satisfaction across different domains [3].

In Pakistan, the responsibility for providing healthcare lies with both federal and provincial governments under the constitution. The healthcare sector in Pakistan faces ongoing challenges due to government neglect and worsening conditions.

Although the concept of patient satisfaction has been explored widely globally, Pakistan lacks sufficient comparative empirical evidence on patient satisfaction between public and private healthcare sectors. Previous work frequently addresses one aspect: service quality or perceived patient trust. Still, it does not provide a comprehensive assessment of patient satisfaction from several perspectives (financial, interpersonal, and accessibility perspectives). Moreover, most findings from previous studies have been based on a single city or region sample; hence, they cannot be generalized to the complexity of the health sector in Pakistan.

For instance, research conducted in developing countries like India and Bangladesh shows that patient satisfaction varies significantly because of geographical, economic, and policy variations [49,50]. However, more substantiated information from Pakistan needs to be provided that supports such findings within the context of overall healthcare development. The study can fill these gaps through a comparative review of the public and the private hospitals in Islamabad and Rawalpindi and provide practical implications for advancing the healthcare sector.

A. Objectives of the Study

- To assess patient satisfaction in three private and three public sector hospitals in Islamabad using an adapted Patient Satisfaction Questionnaire (PSQ).
- To examine patient satisfaction outcomes across different healthcare service providers.
- To evaluate hospital care factors influencing patient satisfaction outcomes.
- To assess the role of socio-demographic factors in determining patient satisfaction outcomes.

B. Research Hypothesis

In the research hypotheses, the main variables are education, age, residence, gender, household income, insurance, and type of hospital.

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- **Ho:** Education, age, residence, gender, household income, insurance, and type of hospital do not affect the general satisfaction level.
- **H1:** Education, age, residence, gender, household income, insurance, and type of hospital do affect the general satisfaction level.

C. Research purpose

The study aims to explore patient satisfaction across healthcare characteristics and patient profiles within organizational contexts, contributing theoretically to understanding the patient-provider relationship. It specifically investigates satisfaction levels in private and public hospitals, assesses perceptions of service quality dimensions, and determines their impact on overall satisfaction. By comparing these sectors, the study aims to identify strengths and weaknesses in healthcare service delivery. Given the competitive healthcare landscape, the research aims to uncover challenges faced by public healthcare providers in meeting and sustaining high standards of care.

D. Locale of the Study

The researcher selected the twin cities of Islamabad and Rawalpindi as the study's locale to investigate patient perspectives on hospital services and satisfaction levels. This choice is justified by these cities' combined healthcare infrastructure, which attracts patients from all regions of Pakistan, providing the researcher with insights from diverse patient backgrounds. Patient satisfaction surveys in this area have informed healthcare leaders on integrating patient perspectives to cultivate a culture where delivering quality services is a paramount strategic objective for healthcare facilities.

METHODS

E. Theoretical Framework

We follow the Ferrer-i-Carbonell and Frijters (2004) patient satisfaction model. Based on previous theoretical studies, our research conceptualizes the results as a difference between personal expectations and perceived performance of outcomes. This is expressed within the framework of the utility theory of economics as follows:

Let $S^*ij = U_2 (PC_i, HC_j) - EU_1 (HC_j)$ ---------- *(i)*

Where S^*ij is latent variable indicating patient satisfaction for patient. $_i$ is treated patients and health care service supplier is denoted by j. U_2 denotes the perceived utility of patient once receiving medical aid services. This utility principally depends on the supplier characteristics (HC_j) and therefore the socio demographic characteristics of the patients (PC_i). EU_1 represents the expected utility that is scaled as average utility values obtained from all patients within the sample space who suffered from a similar wellness and received treatment from health care service supplier.

The basic difference of health characteristics and patient characteristic, researcher observed that satisfaction results while not health characteristics whether it's higher division between them or not. Certain studies observed that S^*ij can be regenerated into a linear function of the managing variables matrix:

F. $S^*ij = Xij\beta + \varepsilon ij$ ---------- **(ii)**

Where, Xij is the set of patient characteristics (PC) and health care supplier service characteristics (HC). $_i$ is treated patients and health care service supplier is denoted by j. β area unit regression coefficients, and ε is an error term.

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G. Conceptual Framework

A conceptual framework for patient satisfaction emphasizes and explains what variables to measure and consider when comparing health services between public and private sectors. This framework facilitates the appropriate assessment of health services, providing measurable and robust evaluations of convenience, availability, and affordability of healthcare facilities. It comprehensively covers the conventional impacts on patients within a restricted sample size.

Patient satisfaction is analyzed and evaluated using various methods and techniques, including staff opinions during hospital stays, analysis of length of stay cases, media coverage, community responses, and structured questionnaire-based patient self-assessment at discharge, suggestion boxes, repeat hospital visits, exit interviews, visitor books, and evaluation forms for patient relatives during hospital stays. For our study, we used a structured questionnaire based on the Likert scale for patient interviews.

Hypothetical studies on patient satisfaction have been conducted since the 1960s. Five representative theories have emerged: Ref. [4] deliberated the discrepancy and transgression theory, where patient satisfaction results from communication between the patient's perspective of what constitutes practical quality healthcare and the provider's standards. Linder's expectation worth theory (1982) focused on socio-psychological factors, stating that patient satisfaction is judged based on the patient's previous expectations, personal beliefs, and values regarding healthcare [5]. Similarly, [6] proposed the causes and elements theory, suggesting that patient satisfaction is influenced by patient preferences and their expectations of healthcare. On the other hand, [7] proposed a multiple model theory, highlighting that expectations should be socially facilitated, reflecting the patient's health concerns and the extent to which healthcare affects the patient's personal sense of well-being. Ref. [8] developed the healthcare value philosophy, stating that satisfaction is an integral part of a three-part structure of the healthcare system: healthcare vision, delivery process, and outcomes. These theories collectively underscore that patient satisfaction with healthcare providers is influenced by multiple factors.

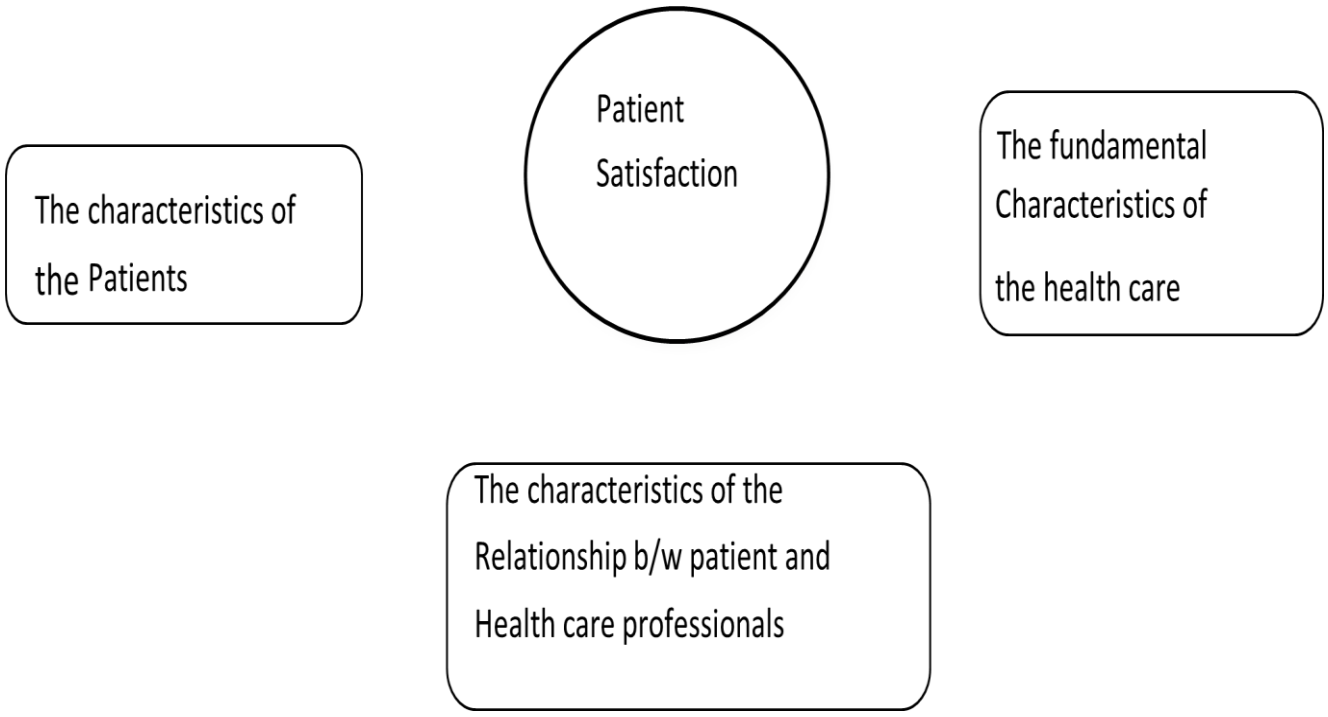

Fig: 1 characteristics of patient satisfaction

Supported by these readings an inclusive model of the patient satisfaction method was developed to try to include all influences on satisfaction, thereby providing a complete outline for discovering the relations between variables that influence the analysis of patients.

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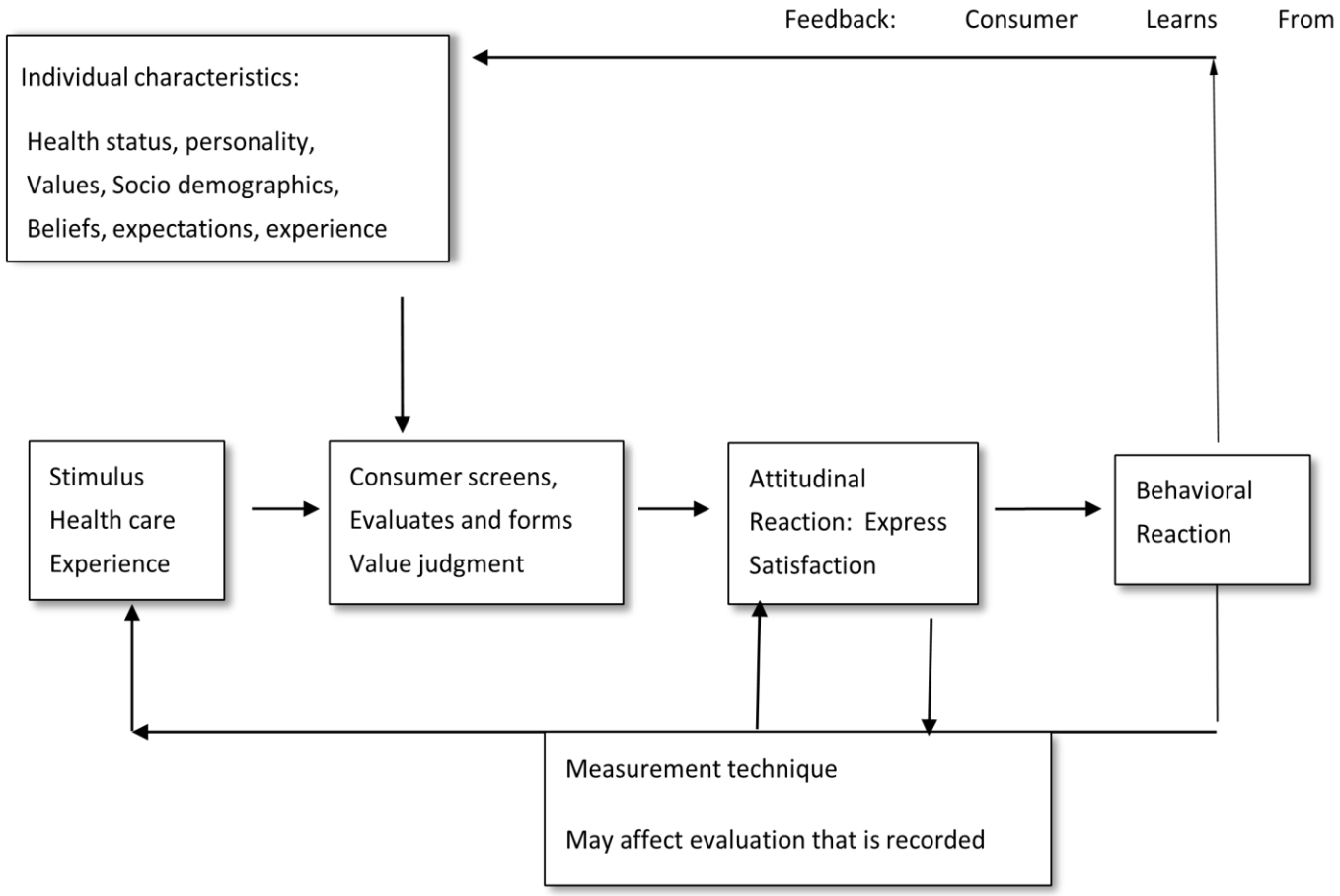

Fig 2: comprehensive model of satisfaction with health care.

(Source: adopted from strasser and davis 1991. strasser et al 1993 and crow 2002)

Although numerous studies have examined the causes of patient satisfaction in developed countries, sign from unindustrialized countries remain rare. The findings provided large understanding into the analysts of patient satisfaction from the occupied developing countries. The causes for patient unhappiness are also explored, which helped health service decisions producers classify main goal area for refining patient satisfaction. Per supplier linked influences, including the characteristics of suppliers, the price of health care, types of services available, quality of infrastructure, and the general value of care, have also important analysts of patient satisfaction.

H. Respondent/Target Population of the Study

Unit of the analysis is patient response. Sample for the analysis is taken from the hospital patient. Whereas the form of patients or respondent is the i. admitted patients, ii. Daily visitor's iii. Patients who visit once every week for seeking health service are studied in this research. We have chosen sample space from the whole population of health services market in Islamabad/Rawalpindi to be 3 non-public and 3 public sector hospitals from Islamabad/Rawalpindi (capital of Pakistan and sister city) for data collection. Essential information was assembled through self-regulated standard surveys from the objective populace i.e. Patients who are taking health facilities from hospitals situated in Islamabad/Rawalpindi.

I. Sample Size

In this research the sample size for this analysis was 250-300 patients as respondents. Ideally this should have been a statistical exercise of identifying the total no of admitted and OPD patients in these hospitals, but since due to limited resource and time limitations we are only able to pick theses sample from respective hospitals. We have selected the sample through convenient sampling technique. The data collection is not by

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intervention, rather randomly selected patients both from the in-patient and outdoor patient facilities. Therefore, it's a convenient sampling method being applied for this study.

J. Data Collection

Data was gathered through a self-administered questionnaire. Persistent fulfillment form patient Satisfaction Questionnaire (PSQ), a self-controlled overview instrument intended to be utilized by general in population-based studies. The PSQ contains fifty-five similar type questions that capture attitudes towards the note able characteristics of doctors and medical aid services (technical and social skills of suppliers, waiting time for appointments, workplace waits, emergency care, prices of care, coverage, convenience of hospitals, and alternative resources etc.) and satisfaction with care generally.

K. Primary Data

Essential information in examination contributes unique information that is watched or straightforwardly gathered. This exploration is about "Patient Satisfaction Outcomes: A Comparison between Public and Private Sector Health Care Services in Islamabad/Rawalpindi Hospitals" where it gives measurable and strong assessment about openness, availability and affordability of health care facilities measured through a standard PSQ based questionnaire. A total number of 300 questionnaires were filled from the patients who were taking health care facility in Twin cities of Pakistan. The qualitative interviews were conducted from 20th June 2016 to 30th June 2016. The interviews were taken face to face associated and structured by a standard interview procedure.

L. Econometric Technique

Based on literature the ordered logit probit because of the valid estimates of psychological assessments as mentioned in literature [9]. Therefore, our analysis is mainly based on the OLS results. Using the equation ii, which is mentioned in the previous chapter, we've got here conferred the econometric model for our study.

$$P\_S= \alpha \pm \beta(A) \pm \beta1(E) \pm \beta2(R) \pm \beta3(G) \pm \beta4(HHI) \pm \beta5(I) \pm \beta6(H) \pm Ɛ \ldots\ldots\ldots (i)$$

$$Y = \alpha \pm \beta(X) \pm Ɛ \ldots\ldots\ldots\ldots (i)$$

β indicates coefficient of variables, allowing different estimation of independent variables. ***β(x)***indicate matrix of independent variables identified from literature describe as below. ***y*** indicates patient_ satisfaction which is dependent variable ***p_s*** measured through 5 scaled, 1) strongly dissatisfied 2) dissatisfied 3) neither satisfied or dissatisfied 4) satisfied 5) strongly satisfied)

a indicates age and an independent variable, measured through patients having ages in the following group:

1) 18-30 2) 31-45 3) 46 & above

e is denoted for education also independent variable, measured through patients being classified as,

1) primary 2) middle 3) matriculation 4) intermediate 5) graduate 6) or above 7) illiterate 8) literate

R is Residence independent variable it is measured through

1) Rural residence 2) Urban residence/local

G denoted to Gender also an independent variable, scaled into

1) Male 2) Female

HHI denoted to household monthly income and its measurement scaled is

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1) 0-25000 2)26000-50000 3)51000-75000 4)76000-100000 5) above

I for Insurance variable, also an independent variable measured by 1) Panel 2) self-insurance 3) through donations 4) out of pocket

H for form of hospital or type of hospital and its scaled 1) Public hospital 2) Nonpublic hospital $\mathcal{E}$ = Error

M. Variables

Patient related physical characteristics, this survey followed previous observed study and recorded patient's general information like ages, genders, education level, household income, type of residence, rural or urban, insurance status. Where insurance was an essential variable measuring access to care, and it could assume an imperative part in affecting the kind of wellbeing assets accessible to patients. Hence, we accepted that patients with insurance would be more fulfilled. With respect to provider related factors, both hospital level factors and health care market factors were included in model. Clinic level qualities incorporated the proprietorship kind of medicinal offices (public vs. private), and hospital rank (primary, secondary, tertiary). Household wage was utilized as often as possible as a part of investigations of industrial associations to speak to the business sector focus in an industry, and it is the most regularly utilized variable to show the level of rivalry [10].

N. Reliability Estimation of Scale Items

The basic formula used for Cronbach Alpha test is:

$\alpha = N.\acute{C} / V + (N-1).\acute{C}$

Where N: the number of items, Ć: the average inter-item covariance, V-Bar: the average variance. For reliability testing, a minimum of 10% of sample size was collected from different hospitals. Researcher obtained raw data for pre-test study of research which interpret and processed by the Statistical Package of Social Sciences (SPSS) program. If the reliability value exceeds 0.60, it is reliable. Per the result shown in table I, the value 0.85 is greater than 0.60, so the results assure that this data is considered reliable for further research.

Table I: Reliability statistics

Cronbach's Alpha	No of items
7.85	7

O. Ethical Consideration

Ethical consent was requested from and approved by the hospitals (three public and three private from Islamabad/Rawalpindi). Patients sharing was volunteer with the declaration of privately and the freedom to remove at any time**.**

P. Methodological Limitations

This study acknowledges several methodological limitations that may affect the interpretation and generalizability of its findings:

Sample Size and Representativeness: Despite this study enrolling 300 patients, the sample size could have been more significant to represent the population of Islamabad and Rawalpindi. Another disadvantage of convenience sampling is that it limits the study population's representation because people from specific minority groups or individuals who are more challenging to reach, including rural patients or patients with severe diseases or other complications, could not participate in the research. Future research should involve a larger sample size stratified according to demographic, geographic, and economic differences.

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Geographical Constraints: More importantly, the study areas are the twin cities, and although the findings are informative, they cannot be generalized to other parts of Pakistan. Out of both capitals, Rawalpindi and Islamabad, as developed cities, health care facilities are comparatively better than those in the rural zones. Therefore, the study results do not point to the actual difficulties of patients in such less-developed regions.

Data Collection Method: Self-administered questionnaires help identify individual patient feedback but may contain response bias. Patients sometimes will agree with every statement to avoid confrontation or may misunderstand such questions because of differing literacy levels. Combining focus groups or interviews with a quantitative survey could generate deeper qualitative information.

Cross-Sectional Design: Cross-sectional studies are used in this research as they measure the degree of patient satisfaction at a given period. They do not, therefore, consider temporal changes, such as changes in levels of satisfaction due to changes in hospital management or healthcare policies. This kind of study could be improved using a longitudinal study design to have a dynamic view of patient satisfaction patterns.

Q. Significant Findings

This study shows that accessibility/availability (AA) and technical quality (TQ) were also the strongest predictors of patient satisfaction. These insights indicate that infrastructure and medical knowledge are significant determinants of how patients perceive themselves. For example: The observed direct, positive relationship between private hospitals and better satisfaction indicates public sector improvement initiatives to match those of private units.

R. Non-Significant Findings

Potential factors include the financial aspects of the treatment (FA) and the time invested (TS); while not meeting statistical significance, they were found to be areas of dissatisfaction in the patients. For instance, the patients complained about long waiting times for services and the high cost of the services offered. The regression model does not capture these but, as revealed by the qualitative data, is crucial in enhancing overall patient satisfaction. Some of the challenges could be handled by improving how hospitals run their appointments and establishing how they can support low-income patients.

RESULTS

A total of 300 patients had been visited, out of which at least 38 patients were admitted and 112 patients who visited once a week in public hospitals. On the other hand, 27 patients admitted and 123 patients visit once a week in non-public hospitals or private hospitals, Table II shows the summary and statistics of the important variables in the example.

II. Table: Descriptive Statistics

		Male	**Female**	**Total**
Age	18-30	12.3%	25.7%	300
	31-45	14.3%	16.7%	
	46 & above	14%	17%	
Education	Primary	2.7%	4%	300
	Middle	4.7%	6%	
	Matriculation	8.7%	12.3%	
	Intermediate	4.7%	12.3%	
	Graduate	8%	7.3%	
	Above	5%	2%	

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	Illiterate	5.7%	14%	
	Literate	1.3%	1.3%	
Employment	Yes	19.7%	8.7%	300
	No	21%	50.7%	

As we have visited 300 patients among them there were 122 males and 178 females. If we categorize these patients with respect to their age then we have 114 patients in range of 18 to 30, 93 patients in range of 31 to 46 and 93 patients of age above 46. On the other hand, if we look at the education level of these patients then we have 20 patients with basic primary education, 32 patients had middle level education, 63 with matriculation, 51 patients with intermediate level, 46 were graduate, and 21 patients were post-graduates. Besides that, 59 patients were illiterate, and 8 patients were literate, but they were not educated through formal education system. 28.3 percent of the patients, which is 85 out of 300 were having employment and the called independent and the remaining 215 were unemployed and they were called dependent patients on their families.

III. Table Descriptive Statistics of Scale Items

Items	**Min**	**Max**	**Mean**	**S.D**
GS	1	3	2.45	0.53
TQ	2	3	2.47	0.44
IA	2	3	2.66	0.47
COM	1	3	2.52	0.5
FA	1	1	1	0.0
TS	1	1	1	0.0
AA	1	4	3.03	0.59

The above table presents the mean and standard deviation of the all the attributes, computed to the dependent variables' patient satisfaction. All the variables on a scale of 1-5 (1- strongly dissatisfied, 2- dissatisfied, 3- neither satisfied nor dissatisfied, 4- satisfied, 5- strongly satisfied).

In terms of patient satisfaction accessibility/availability (AA) was highly ranked (mean = 3.03), interpersonal aspect (IA) was close to high ranked (mean = 2.66). In terms of patient dissatisfaction or lowest satisfaction was financial aspect (FA) and time spent (TS) where both were lowest ranked (mean = 1.00).

IV. Table Regression results

Variables	**GS**	**TQ**	**IA**	**COM**	**FA**	**TS**	**AA**	**PSQ***
Constant	14.4	11.4	25.99	25.16	3.18	3.164	22.568	110.95
Gender	1.23***	0.68***	0.47***	1.06***	-0.16	0.124***	1.28***	4.70***
Age	-0.114	-0.301	-0.326	-0.213	-0.05	-0.002	0.034*	-0.97
Education	-0.160	0.016*	-0.048	-0.179	-0.017	0.008*	-0.267	-0.64
Residence	1.04***	0.237***	0.098**	0.234***	0.367***	-0.124	1.587***	3.44***
HH income	-3.001 E-006	1.775E-006	-2.350 E-006	5.223E-007	-1.307 E-006	2.915E-007	-3.036 E-006	-7.105 E-006
Insurance	-0.109	-0.089	0.017*	-0.068	-0.02	-0.015	0.113***	-0.36
Hospital	5.78***	1.618***	3.957***	3.588***	0.596***	0.584***	6.288***	22.41***
R2	0.374							
F- statistics	24.97							

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Above table shows the results from regressing the general satisfaction on gender, age, education, residence, total monthly HH income, insurance and type of hospitals. The results indicate that Gender, Residence, and type of hospital positively affect the general satisfaction level. These variables have coefficients that are statistically significantly different from zero. Under the variable gender, male have a higher satisfaction level (on Likert scale, male have 1.23 units more satisfaction level than the female). On the same Likert scale as GS, urban people have higher satisfaction level i.e. 1.04units on the scale of satisfaction. The change in type of hospital, i.e. from public to nonpublic yields a coefficient of 5.8 which means that GS increases by 5.8 units on the Likert scale of 40.

S. The technical quality

Results indicate that Gender, Education, Residence, monthly HH income and type of hospital positively affect the technical quality level. These variables have coefficients that are statistically significantly different from zero. Under the variable gender, male have a not much higher satisfaction level then female (on Likert scale, male have 0.68 units more satisfaction level than the female). On the same Likert scale as TQ, urban people do not have a much higher satisfaction level i.e. 0.23 then the other units on the scale of satisfaction. The change in the type of hospital, i.e. from public to non-public yields a coefficient of 1.6, which means that TQ increases by 1.6 units on the Likert scale of 20.

T. The interpersonal aspects:

Results indicate that Gender, Residence, Insurance and type of hospital positively affect the interpersonal aspects level. These variables have coefficients that are statistically significantly different from zero. Under the variable gender, male have not much higher satisfaction level then female (on Likert scale, male have 0.47 units more satisfaction level than the female). On the same Likert scale as IA, urban people do not have a higher satisfaction level i.e. 0.09 units on the scale of satisfaction. The change in type of hospital, i.e. from public to nonpublic yields a coefficient of 3.9, which means that IA increases by 3.9 units on the Likert scale of 40.

U. The communication

Results indicate that Gender, Residence, HH income and type of hospital positively affect the communication level. These variables have coefficients that are statistically significantly different from zero. Under the variable gender, male have a higher satisfaction level (on Likert scale, male have 1.06 units more satisfaction level than the female). On the same Likert scale for COM, urban people do not have a much higher satisfaction level i.e. 0.2 units on the scale of satisfaction. The change in type of hospital, i.e. from public to non-public yields a coefficient of 3.6 which means that COM increases by 3.6 units on the Likert scale of 40.

V. The Financial aspect

Results indicate that Residence and type of hospital positively affect the financial aspect level. These variables have coefficients that are statistically significantly different from zero. Under the variable gender, male have less satisfaction level (on Likert scale, male have -0.1 units less satisfaction level than the female). On the same Likert scale for FA, urban people have less high satisfaction level i.e. 0.3 units on the scale of satisfaction. The change in type of hospital, i.e. from public to non-public yields a coefficient of 0.6 which means that FA increases by 0.6 units on the Likert scale of 1-5.

W. Time spent

Results indicate that Gender, education, HH income, and type of hospital positively affect the time spent. These variables have coefficients that are statistically significantly different from zero. Under the variable gender, male have a less high satisfaction level (on Likert scale, male have 0.1 units more satisfaction level

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than the female). On the same Likert scale for TS, urban people have less satisfaction level i.e. -0.1 units on the scale of satisfaction. The change in the type of hospital, i.e. from public to non-public yields a coefficient of 0.5 which means that TS increases by 0.5 units on the Likert scale of 1-5.

X. The access and availability

Results indicate that Gender, Age, Residence, Insurance and type of hospital positively affect the general satisfaction level. These variables have coefficients that are statistically significantly different from zero. Under the variable gender, male have a higher satisfaction level (on Likert scale, male have 1.3 units more satisfaction level than the female). On the same Likert scale as AA, urban people have higher satisfaction level i.e. 1.6 units on the scale of satisfaction. The change in type of hospital, i.e. from public to non-public yields a coefficient of 6.3 which means that AA increases by 6.3 units on the Likert scale of 50.

If compare the all the patient items that results show TQ which is technical quality and AA access, and availability are highly significant than other items. At other side GS and FA have a highly insignificant of variables relationship.

Y. Qualitative results

The PSQ form entailed a single qualitative question to get suggestions from patients for improvement within and outside the hospitals. The patients responded that they were currently facing problems in the hospital in availing the desired health services. In the meanwhile, they highly suggested and recommended in improvement of the following areas: the increase in medicine stock, prohibition of mobile usage during patient checkup, the quality of the credentials of the hired doctors and other staffs, an overall improvement in the attitude of doctors and other staff in dealing and handling patients, increases the number of beds for patients, more attention and possibly free checkup for needy people. They also brought to the notice that some hospitals have not any proper place for worship and suggested to display the map of hospitals in the entrance. Besides that, there should be proper ventilation system, parking area, last but not the least, some patients suggested that some hospitals laboratory results have reported to be incorrect, so there is a need to improve quality and services of hospital's laboratory services. Thus, their response resulting that they are facing financial issues and smooth availability of service. If the concerned authorities overcome these suggestions, then it can create positive impact and big improvement in the overall health service delivery in hospitals.

V. Table: Education and Hospital

Education	**Public Hospital**	**Non Public Hospital**	**Education**
Primary	12	8	Primary
Middle	23	9	Middle
Matriculation	28	35	Matriculation
Intermediate	29	22	Intermediate
Graduate	16	30	Graduate
Above	7	14	Above
Illiterate	28	31	Illiterate
Literate	7	1	Literate
Total	**150**	**150**	**Total**

The above table shows the comparison of public and private with education. The results show that mostly more educated patients visited the nonpublic hospital graduate 30, above 14. The middle 23, primary 12 were mostly visited the public hospitals.

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VI. Table: Insurance and Hospital

	Public Hospital	Non Public Hospital	Total
Panel	84	41	125
Self-insurance	10	16	26
Through Donations	4	5	9
Out of Pocket	52	88	140

The above table shows the result of insurance and type of hospital. The highest 84 patients were panel patients and visited the public hospital.88 patients were spending from out of pocket for seeking the health services from nonpublic hospital.

This study reveals the results of patient satisfaction outcomes in Islamabad through comparison of public and private hospitals. It investigates the specific reasons for unsatisfied patients which indicate areas of improvement in the current health care system. By using PSQ, this study further measures the OPD patient's perception about health services. It needs to be noted that our analysis only concentrated on the regression analysis of scale items (patient satisfaction) and the independent variables. In the analysis results find that access/availability and technical quality were highly significant in both descriptive and regression results. It shows that patients were mostly satisfied with these scale items. Patients in private sector hospitals were more satisfied than those in public sector hospitals. However, in qualitative results patients were satisfied with treatment but not satisfied with system of hospital in public hospitals. Both patients in public and private were equally unsatisfied about the time spending with doctors [11]. Private hospitals delivered better quality of services to their patients as compared to public hospitals [12]. As our analysis in scale items patients responded with strongly dissatisfied with time spent. As discuss these factors or scale items easily explains why patients are unsatisfied from the GS, TS, FA, IA, and COM.

It also explains why these issues were insignificant with reasons. Perhaps patient satisfaction can be improved by working on these scale items in hospitals, for example, established a proper fund-raising system, staff quality training programs, and increased medicine stocks for enhancing patient satisfaction.

DISCUSSION

This study conducts an empirical analysis and comparison of patient satisfaction outcomes between public and private healthcare services in hospitals located in Islamabad and Rawalpindi. The methodology employed both descriptive and exploratory approaches, with results and analysis drawn accordingly.

A total of 300 patients consented to participate in the study by completing questionnaires, contributing to the conclusive results. Among these, 38 patients were admitted and 112 visited public hospitals weekly, whereas 27 were admitted and 123 visited non-public or private hospitals weekly. Urban residents showed higher satisfaction levels than rural residents on a Likert scale, with a difference of 1.6 units in satisfaction. The study has several limitations that suggest directions for future analysis. The information was gathered solely from hospitals located in Islamabad. Therefore, future studies could extend these findings to other cities in Pakistan to assess their generalizability, considering Islamabad's status as the capital and its potential for delivering improved services to meet the needs of patients. Patient behavior can vary significantly in different parts of the country.

The research results of this study support the literature similar to other developing nations like India and Bangladesh, where the private hospitals are more favorably rated by the patients than the public hospitals primarily due to better physical infrastructure ambiance, less waiting time, and perceived quality of care is often better in private hospitals than the public ones [49, 53]. Likewise, this study established that the extent of availability, access, and technical quality of the hospitals contributed towards overall satisfaction in private healthcare hospitals more than other factors.

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On the other hand, many public hospitals in Pakistan have qualities similar to those of Low and medium-income countries, including poor funding, congestion, and administrative constraints [51]. For example, in research on patient satisfaction in India conducted by Shrivastava et al. (2017), waiting for time and availability of medicines were dissatisfied with our results as financial aspects and time were rated lowest by patients [52].

Although this study has contributed to knowledge about patient satisfaction in Pakistan, such comparisons reveal significant variations in cultural and institutional factors that affect outcomes. For example, community health worker programs reduce dissatisfaction with public hospitals in Bangladesh, but Pakistani Public health has no such facility at the community level to dampen dissatisfaction [49].

Cultural Dynamics: Satisfaction with and usage of health services vary significantly between males and females, sometimes due to culturally prejudiced beliefs regarding the right of males to healthcare services compared to females. Some may experience challenges like inadequate privacy or community cultures that prevent women from being attended to by male physicians. Reducing health disparities could include introducing gender-sensitive healthcare training and increasing female staff.

Institutional Challenges: Factors such as bureaucracy, inadequate funding, or staff shortages, therefore, put public hospitals at a disadvantage to private hospitals in terms of satisfaction level. High patient turnover and poor staff-patient ratios were cited; patients complained a lot about the conduct of healthcare staff, mainly how they treated them. These systemic problems could be solved through programs such as constant staff training, incentives, and improving public hospitals' financial positions at the state level.

Z. Linking Findings to Broader Healthcare Reforms

This research contributes to understanding Pakistan health services delivery by focusing on patient satisfaction in quality assessment. It points to areas that need reform by comparing public and private hospitals. For example, experiences from the National Health Mission of India could be upscale while implemented in Pakistan, emphasizing a reduction in waiting time and rational distribution of essential medicines in public health facilities.

The research also recommends that patient feedback, including the more frequent use of standardized Patient Satisfaction Questionnaires (PSQs), enhance accountability and services. These practices, common in European and Southeast Asian countries' health systems, could be implemented in Pakistan to improve patient care.

Improving Accessibility and Availability: The relatively high importance to patients of accessibility/availability of services indicates the necessity of developing the health care services provision network, with special emphasis on the regions with shortages. Possible solutions for the gaps include mobile health centres and tele-health that the government may deploy to address the problem.

Addressing Financial Barriers: The dissatisfaction with the financial aspects of care proves the call for effective and relatively cheap healthcare services like increasing health insurance, or introducing graduated tariffs for inhabiting public hospitals.

Reducing Waiting Times: The problem of long waiting times can be overcome through digitization of appointments and utilizing triage procedures to identify emergency cases. Experience with coordination of field operations suggested that efficiency of private hospitals in patient admission log can also be controlling inspiring the public sector hospitals.

Cultural Sensitivity and Patient Engagement: Hospitals should embrace patient feedback by conducting surveys on patients' experiences and engaging them in patient advisory boards in order to earn their trust and satisfaction. Moreover, awareness could inform patients about their entitlement and services they might receive.

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FUTURE DIRECTIONS - EXTENDING RESEARCH TO OTHER REGIONS

This study targeted only Islamabad and Rawalpindi because those areas had comparatively better healthcare facilities than others in Pakistan. Applying the rules derived from this study on patient satisfaction to other cities of different provinces in Pakistan—Karachi, Lahore, and Peshawar—would offer a better prognosis of patient satisfaction in Pakistan. For example, the prevalence and distribution differences of factors in rural Sindh or Balochistan may offer insight into other factors determining patient perceptions.

Further, provincial data will increase external validity because patients' actions and healthcare accessibility differ across Pakistan. A multiple-city study may be more beneficial in policy formulation since it allows for interventions that are sensitive to city characteristics, such as offering free or low-cost health care to rural cities or implementing quality improvement in patient-centered programs in large cities with public hospitals.

CONCLUSION

The research examines outpatient satisfaction levels and perceptions of service quality across various dimensions. Factors influencing patient satisfaction include overall satisfaction, technical quality, financial aspects, access and availability, interpersonal interactions, time spent, and communication. Independent variables studied encompassed education, residence, gender, age, insurance coverage, household income, and hospital type.

Changing from public to non-public hospitals resulted in significant increases in satisfaction across various dimensions: 6.3 units for overall satisfaction, 0.5 units for technical quality, and 3.6 units for communication, all on their respective Likert scales. Urban residents also reported higher general satisfaction, with a difference of 1.04 units on the satisfaction scale.

Technical quality and access and availability were found to be highly significant factors influencing satisfaction, while factors such as general satisfaction and financial aspects showed less significant relationships.

Overall evaluation of services in public and non-public hospitals indicates common challenges in accessibility, availability, and affordability of healthcare services. Patients frequently highlighted the need for improved medicine stock, better staff and nurse behavior through enhanced medical training, longer appointment durations for check-ups, and better cleanliness and hygiene of facilities including washrooms and drinking water.

The use of patient satisfaction as a critical metric for evaluating hospitals is a common and essential practice in many developed countries such as France, the UK, and various other European nations. These policies and practices have significantly enhanced patient satisfaction with healthcare services and overall quality of life in these developed regions. In contrast, many developing countries, including Pakistan, have largely overlooked these practices, highlighting a pressing need for substantial improvements in healthcare service delivery based on patient satisfaction. While some private hospitals in Islamabad maintain service quality, overall oversight and improvement are crucial, particularly in government hospitals.

The researcher recommends the implementation of Patient Satisfaction Questionnaires (PSQ) using international scales such as the Likert scale in hospitals. This method has proven effective in enhancing service quality and patient satisfaction in developed countries. The study findings indicate that Access and Availability, as well as Technical Quality, hold greater significance compared to General Satisfaction, Time Spending, Financial Aspects, Interpersonal Aspects, and Communication. Therefore, the research suggests that hospitals focus on improving these areas where patient satisfaction is currently lacking.

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