# SERVICE QUALITY AND PATIENT SATISFACTION IN MEDICAL DELIVERY SYSTEM – STUDY REFERENCE TO SELECTED CORPORATE HOSPITALS IN TAMILNADU

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#### **Abstract**

The present study is made to discover that, how far the service quality dimensions sway on the patient satisfaction Descriptive research design adopted and a sample size of 775 patient-focused and distinguishes the service quality factors that are critical to patients; it additionally analyzes their connections to patient satisfaction with regards to chosen corporate hospital in Tamil Nadu. Evaluations were gotten from patients on dimensions of apparent service quality including unmistakable, unwavering quality, responsiveness, confirmations, compassion, and communication. Utilizing percentage and statistical analysis, huge affiliations were found between the six dimensions and patient satisfaction, and these six dimensions of service quality significantly affect patient satisfaction. On account of individual characteristics, there were a critical distinction among the age and instructive gatherings, while no huge contrast between sexual orientation, conjugal status and expert gatherings. Result of the study is to be useful to policy makers, researchers, academicians and organizers of the concern area.

**Keywords:** Service Quality dimensions, patient satisfaction.

## Introduction

Physical prosperity is the key prerequisite of any individual, and no one can deny the fact that prevention is better than cure. Most people do not like to visit hospitals however the present generations are required to make a visit to hospital once in a while to ensure better health condition and get diagnosed if necessary. Services are actions, procedures and performances. The intention of the research is to study about the patient satisfaction and service quality in medical delivery system. This helps to distinguish the important service quality measurements utilized by patients to assess benefit quality and to evaluate the connection between

service quality and satisfaction of patients. The research also estimates the gap of satisfaction and anticipation among the patients visiting the hospitals.

The concept of Satisfaction is psychological based and patient satisfaction relies on numerous variables, for example, Quality of clinical administrations provided, accessibility of medication, hygiene and cleanliness, behavior and approach of doctors towards patients and other wellbeing staff, cost of the administrations, healing center framework, physical solace, enthusiastic help, and regard for patient inclinations. Patient satisfaction has been characterized as an assessment that mirrors the apparent contrasts between desires for the patient to what is really obtained amid the procedure of consideration. Understanding patient satisfaction and quality of service is a multidimensional viewpoint. To enhance nature of health administrations it is most vital to acquire criticism from the consumer be it patient or patient group. In each viewpoint satisfaction depends generally on the expectation. So to evaluate quality of service in a hospital it is critical to quantify patients or patient group's desire and recognition and discover their insight to assess quality of services

## Statement of the problem

As the healthcare industry shifts towards managed competition and a modern era of healthcare, information for positioning an entire organization to meet patient requirements effectively will become growingly essential. The quality of health care services has been the subject of constant interest among researchers and health institutions. To date, and despite the fact that many hospitals began to adopt different quality improvement initiatives in the last two decades, the literature on patient perception about the quality of health services is still limited (according to researcher knowledge), especially in the hospitals. This research tries to fill this gap by empirically investigating the impact of healthcare service quality and patient satisfaction in medical delivery system.

Selected corporate hospitals in Tamil Nadu

# **Objectives of the Study**

- To explore the level of patient satisfaction concerning services provided by selected corporate hospitals in Tamil Nadu.
- To analyze the impact of antecedents and service quality on satisfaction of sample respondents
- To suggest some measures for policy makers, including the government and the administrators of hospitals, doctors, nursing and paramedical staff for creating, running and managing hospitals.

# **Research Hypothesis**

## **Research Questions**

**Research Question 1** (RQ1): Does the dimensions viz. Assurance, Empathy, Responsiveness, Reliability, Tangibility and security have an impact on Service Quality?

- **Research Question 2** (RQ2): Does the dimensions viz. Assurance, Empathy, Responsiveness, Reliability, Tangibility and security have an impact on Customer satisfaction?
- Research Ouestion 3 (RO3): Does the dimensions viz. Service Quality and Customer Satisfaction have an impact on Customer Retention?

## **Research Methodology**

The methodology provides an outline of research strategies that were followed in the present study. It gives data on the respondents, that is, the criteria for incorporation in the research, who the members were and how they were used as sample of the research. The analyst portrays the examination structure that was decided with the end goal of this investigation and the explanations behind this decision. The instrument that was utilized for information accumulation is likewise depicted and the techniques that were pursued to do this examination are incorporated. The strategy that has been received in this exploration was so carefully planned as to run well with the region of request. The specialist additionally examines the techniques used to dissect the information. Ultimately, the moral issues that were followed in the process are additionally talked about. The review of literature has helped the researcher to focus on the sort of research technique that will be most appropriate for this territory of study. Descriptive research design has been employed in current research for development of research instrument and measurement scales, collection of data, coding and data entry, analysis and interpretations, formulation and testing of hypothesis.

An organized survey utilizes the same (worded) inquiries in a similar succession to all respondents. Shut finished inquiries are those inquiries wherein classes of reaction are outfitted alongside the inquiry. The respondent needs to pick solitary or numerous things from such classifications (alternatives). Rating questions expect respondents to show their recognition around a quality (variable) on a scale. For instance, 5-point scales are maintained a strategic distance from to limit blunder of focal inclination. Ranking inquiries are those which expect respondents to rank an arrangement of qualities (factors). For instance, a 5-point Ranking scale contains '1' for Strongly Disagree Ranking and '5' for Strongly Agree Ranking. Sampling design comprises four major areas: Population, Frame, Sampling method and size estimation. The frame comprises of selected corporate hospitals of Tamilnadu.

Stratified Random Sampling (Malhotra and Birks, 2006) was employed. The survey was based on the patient satisfaction in selected corporate hospitals in Tamilnadu. The accurate population (patients) of selected corporate hospitals is unknown. The number of patients in selected corporate hospitals differs depending upon the corporate hospitals preferred over the state of Tamilnadu.

The standard deviation value from the pilot study, considering question on 'Customer Satisfaction' was found to be 0.864. Sample size, when population is unknown, is estimated (Malhotra and Birks, 2006) using the formula:

$$n = \sigma^2$$
,  $z^2 / D^2$ 

 $\sigma$  = standard deviation = 0.864 D = level of acceptable error = 0.05 (Level of significance). z = standard variant = 1.61 n = estimated sample size = (774.9) = 775

## **Limitation of the Study**

- 1. The present study is confined to selected hospitals in Tamil Nadu. Hence the result of the study may not be generalized.
- 2. The scope of the study is limited only to the services quality and patient satisfaction on medical delivery services.

## **Review of Literature**

Lalitha Rani. D, Yeshiemebet Demissie (2017) This study pointed that assessing the apparent quality of service conveyance of public hospitals, in Amhara area, Ethiopia. The consequence of this study indicated that the apparent characteristics of the hospital are underneath average level. SEM results portrays the structure display have solid match index and demonstrate all measurement have positive association with Service quality.

Ganesh N Akhade et al (2016) research was led to identify the properties of service quality significant to identify the service quality of healthcare services. Total 67 healthcare service quality characteristics we recollected out of which 43 from review of literature, 24 traits through meeting with key stakeholder and individual perception by visiting various kinds of hospitals.

**Hayat belaid, et al (2015)** found that lately, the heath sector is given a great interest and at all levels and the subject of health services' quality is the fate of a universal expanding interest. So, hospital organizations attempt to provide health services with a high caliber to accomplish the most extreme conceivable satisfaction for the patient.

Samaan Almsalam (2014) the essential objective of this article is to examine the connection between two of the most vital predecessors of consumer satisfaction (to be specific consumer prospect and alleged service quality) and consumer satisfaction. Bank managers must know how development in service quality impacts consumer satisfaction and what prospect levels they should seriously think about to expand buyer satisfaction which at last retains valued consumers.

Joshua Ofori Essiam (2013). The study demonstrated that patients' satisfaction was best clarified by alleged responsiveness, trailed by alleged compassion, alleged assurance, alleged tangibility, and alleged reliability. The study will hold any importance with hospital administrators, stakeholders and academicians researching the connections between the SERVQUAL magnitude and patient satisfaction using the hierarchical relapse model.

**Dr. Kavitha.** R (2012) in this research, the researcher displays a service quality observation study attempted in two hospitals in Salem city. In this research the SERVQUAL survey was used for evaluation of Gap 1 Viz., difference between management's discernment of patients' prospect s. A research covering a sample of 400 patients and 50 doctors uncovered that a gap between administration 'discernment about patients' prospect s and patients' prospect s for service quality exists.

## **Analysis and Discussion**

TABLE - 1 **Customer satisfaction on medical Delivery System** 

C Na	Statement	SD	D	N	A	SA
S.No		(N = 775)				
1	Waiting time for daily service was not so long or more than 45 minutes	16 (2.1%)	107 (13.8%)	215 (27.7%)	344 (44.4%)	93 (12.0%)
2	The hospital ensures medications are taken on time and that no mistakes are made with dosage	15 (1.9%)	111 (14.3%)	223 (28.8%)	309 (39.9%)	117 (15.1%)
3	The hospital provides trust and confidence in patients	29 (3. <mark>7%</mark> )	88 (11.4%)	208 (26.8%)	336 (43.4%)	114 (14.7%)
4	Waiting time for admission was not so long or more than a week	22 (2.8%)	96 (12.4%)	273 (35.2%)	315 (40.6%)	69 (8.9%)
5	Nurses do not discriminate against patients with serious conditions	40 (5.2%)	118 (15.2%)	280 (36.1%)	258 (33.3%)	79 (10.2%)
6	The hospital has all advanced and latest equipments	33 (4.3%)	50 (6.5%)	253 (32.6%)	333 (43.0%)	106 (13.7%)
7	Operating hours in the hospital was convenient to patients	63 (8.1%)	71 (9.2%)	279 (36.0%)	302 (39.0%)	60 (7.7%)
8	Doctors monitored my health status regularly/ everyday	53 (6.8%)	28 (3.6%)	216 (27.9%)	338 (43.6%)	140 (18.1%)
9	Doctors explained to me about my health condition, diagnosis and treatment in understandable way	35 (4.5%)	77 (9.9%)	273 (35.2%)	286 (36.9%)	104 (13.4%)
10	I am satisfied with the overall service provided by the hospital	34 (4.4%)	52 (6.7%)	240 (31.0%)	319 (41.2%)	130 (16.8%)

## (Primary Data)

Table 1 shows the customer satisfaction on medical delivery system. Out of the total respondents, (44.4%) of the respondents agree that waiting time for daily service was not so long or more than 45 minutes. (39.9%) of the respondents agree that the hospital ensures medications are taken on time and that no mistakes are made with dosage. (43.4%) of the respondents agree that the hospital provides trust and confidence in patients. (40.6%) of the respondents agree that the waiting time for admission was not so long or more than a week. (36.1%) of the respondents were neutral that the nurses do not discriminate against patients with serious conditions. (43.0%) of the respondents agree that the hospital has all advanced and latest equipments. (39.0%) of the respondents agree that the operating hours in the hospital was convenient to patients. (43.6%) of the respondents agree that the doctors monitored my health status regularly/everyday. (36.9%) of the respondents agree that the doctors explained to me about my health condition, diagnosis and treatment in understandable way. (41.2%) agree that they were satisfied with the overall service provided by the hospital.

It is concluded from the above analysis that maximum numbers of respondents (44.4%) agree that waiting time for daily service was not so long or more than 45 minutes.

#### **ONEWAY ANOVA (AGE)**

H<sub>01.1</sub>: There is no significant difference between age groups with regards to the Assurance, Empathy, Responsiveness, Reliability, Security, Tangibility, Service quality, Customer satisfaction and Customer retention

TABLE - 2 **ONEWAY ANOVA (AGE)** 

Dime	Sum of	Df	Mean	F	Sig	
		Squares		Square		
	<b>Between Groups</b>	215.088	3	71.696	1.753	0.155
Assurance	Within Groups	31537.459	771	40.905		
	Total	31752.547	774			
	<b>Between Groups</b>	174.785	3	58.262		0.276
Empathy	Within Groups	34796.699	771	45.132	1.291	
	Total	34971.484	774			
	<b>Between Groups</b>	172.389	3	57.463	1 406	0.214
Responsiveness	Within Groups	29619.358	771	38.417	38.417	
	Total	29791.747	774			
	<b>Between Groups</b>	311.066	3	103.689	2.589	0.050
Reliability	Within Groups	30872.942	771	40.043	2.389	
	Total	31184.008	774			
	<b>Between Groups</b>	186.856	3	62.285	2.106	0.098
Security	Within Groups	22803.526	771	29.577	2.100	
	Total	22990.382	774			
	<b>Between Groups</b>	255.614	3	85.205	1.005	0.113
<b>Tangibility</b>	Within Groups	32933.224	771	42.715	42.715 1.995	
	Total	33188.839	774			
	<b>Between Groups</b>	548.759	3	182.920	2.962	0.021
Service quality	Within Groups	47609.195	771	61.750		0.031
	Total	48157.954	774			
C	<b>Between Groups</b>	457.754	3	152.585	2.022	0.009
Customer satisfaction	Within Groups	29989.490	771	38.897	3.923	
saustaction	Total	30447.244	774			
<b>C</b>	<b>Between Groups</b>	180.880	3	60.293		
Customer retention	Within Groups	33141.902	771	42.986	1.403	0.241
retention	Total	33322.782	774			

<sup>\*</sup> Significant at the 5% level

## **Analysis:**

It can be seen from above Table that null hypotheses for the Reliability, Service quality and Customer satisfaction are rejected as the p value is lesser than 0.05. For all other dimensions, since the p value is greater than 0.05 the null hypotheses are accepted.

#### **Discussion:**

There is a significant difference between age groups with regards to the Reliability, Service quality and Customer satisfaction.

There is no significant difference between age groups with regards to the Assurance, Empathy, Responsiveness, Security, Tangibility and Customer retention.

# **Structural Equation Modeling (SEM)**

## The Observed, endogenous variables:

Service Quality

**Customer Satisfaction** 

Customer retention

## The Observed, exogenous variables

Assurance

**Tangibility** 

Security

Reliability

**Empathy** 

Responsiveness

## The Unobserved, exogenous variables

e1 (Customer retention)

e2 (Service Quality)

e3 (Customer Satisfaction)

Variable counts (Group number 1)

Number of variables in your model: 12

Number of observed variables: 9

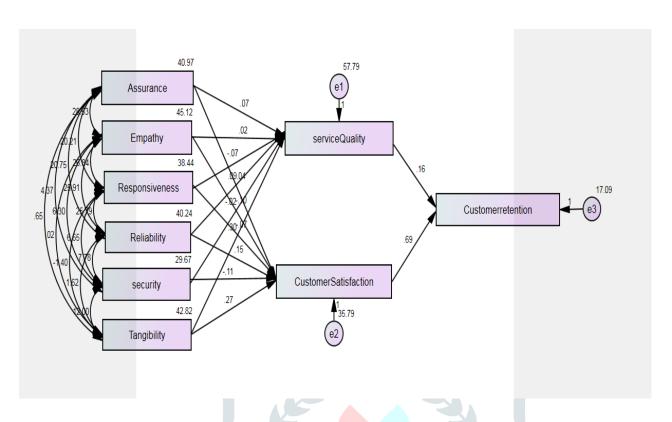
Number of unobserved variables: 3

Number of exogenous variables: 9

3 Number of endogenous variables:

# **SEM Path Analysis**

## FIGURE: 1



**Source: Primary Data** 

## **SEM PATH** ANALYSIS

## TABLE NO – 3

Dimensions	Path	Dimensions	SE	P Value	Result	
Service Quality	<	Assurance	0.058	0.261	Not Significant	
Service Quality	<	Empathy	0.063	0.765	Not Significant	
Service Quality	<	Responsiveness	0.065	0.002	Significant	
Service Quality	<	Reliability	0.061	0.000	Significant	
Service Quality	<	Security	0.055	0.709	Not Significant	
Service Quality	<	Tangibility	0.045	0.000	Significant	
<b>Customer Satisfaction</b>	<	Assurance	0.046	0.000	Significant	
<b>Customer Satisfaction</b>	<	Empathy	0.050	0.056	Not Significant	
Customer Satisfaction	<	Responsiveness	0.051	0.191	Not Significant	
Customer Satisfaction	<	Reliability	0.048	0.002	Significant	
<b>Customer Satisfaction</b>	<	Security	0.043	0.010	Significant	
Customer Satisfaction	<	Tangibility	0.035	0.000	Significant	
Customer retention	<	Service Quality	0.019	0.000	Significant	
Customer retention	<	Customer	0.024	0.000	Significant	
Customer retention		Satisfaction		0.000		

<sup>\*\*</sup>Significant at 0.01

Research Question 1 (RQ1): Does the dimensions viz. Assurance, Empathy, Responsiveness, Reliability, Tangibility and security have an impact on Service Quality.

H<sub>01.1</sub> Assurance has no impact on Service Quality.

Analysis: It can be seen from Table, the p value is greater than the significance level, hence the null hypothesis is accepted.

**Result:** Assurance has a Negative impact on Service Quality.

H<sub>01.2</sub> Empathy has no impact on Service Quality.

**Analysis:** It can be seen from Table, the p value is greater than the significance level, hence the null hypothesis is accepted.

**Result:** Empathy has a Negative impact on Service Quality.

H<sub>01.3</sub> Responsiveness has no impact on Service Quality.

Analysis: It can be seen from Table, the p value is lesser than the significance level, hence the null hypothesis is rejected.

**Result:** Responsiveness has a positive impact on Service Quality.

H<sub>01.4</sub> Reliability has no impact on Service Quality.

Analysis: It can be seen from Table, the p value is lesser than the significance level, hence the null hypothesis is rejected.

**Result:** Reliability has a positive impact on Service Quality.

H<sub>01.5</sub> Security has no impact on Service Quality.

Analysis: It can be seen from Table, the p value is greater than the significance level, hence the null hypothesis is accepted.

**Result:** Security has a Negative impact on Service Quality.

H<sub>01.6</sub> Tangibility has no impact on Service Quality.

Analysis: It can be seen from Table, the p value is Lesser than the significance level, hence the null hypothesis is rejected.

**Result:** Tangibility has a Positive impact on Service Quality.

**Research Question 2** (RQ2): Does the dimensions viz. Assurance, Empathy, Responsiveness, Reliability, Tangibility and security have an impact on Customer satisfaction.

H<sub>02.1</sub> Assurance has no impact on Service Quality.

**Analysis:** It can be seen from Table, the p value is Lesser than the significance level, hence the null hypothesis is rejected.

**Result:** Assurance has a positive impact on Service Quality.

H<sub>02.2</sub> Empathy has no impact on Service Quality.

Analysis: It can be seen from Table, the p value is greater than the significance level, hence the null hypothesis is accepted.

**Result:** Empathy has a Negative impact on Service Quality.

H<sub>02.3</sub> Responsiveness has no impact on Service Quality.

**Analysis:** It can be seen from Table, the p value is greater than the significance level, hence the null hypothesis is accepted.

**Result:** Responsiveness has a negative impact on Service Quality.

H<sub>02.4</sub> Reliability has no impact on Service Quality.

**Analysis:** It can be seen from Table, the p value is lesser than the significance level, hence the null hypothesis is rejected.

**Result:** Reliability has a positive impact on Service Quality.

H<sub>02.5</sub> Security has no impact on Service Quality.

**Analysis:** It can be seen from Table, the p value is equal to the significance level, hence the null hypothesis is rejected.

**Result:** Security has a positive impact on Service Quality.

H<sub>02.6</sub> Tangibility has no impact on Service Quality.

**Analysis:** It can be seen from Table, the p value is Lesser than the significance level, hence the null hypothesis is rejected.

**Result:** Tangibility has a Positive impact on Service Quality.

**Research Question 3** (RQ3): Does the dimensions viz. Service Quality and Customer Satisfaction have an impact on Customer Retention.

H<sub>03.1</sub> Service Quality has no impact on Customer Retention.

**Analysis:** It can be seen from Table, the p value is lesser than the significance level, hence the null hypothesis is rejected.

**Result** Service Quality has a positive impact on Customer Retention.

H<sub>03,2</sub> Customer Satisfaction has no impact on Customer Retention.

**Analysis:** It can be seen from Table, the p value is Lesser than the significance level, hence the null hypothesis is rejected.

**Result:** Customer Satisfaction has a Positive impact on Customer Retention.

**Model Fit Indices Summary:** The important fit indices are presented in the Table below.

## **Major Model Fit Indices Summary**

TABLE - 3

Parameters	Acceptable values	Research Model
	for Good Fit	Values
GFI	>0.9	0.949
AGFI	>0.9	0.925
CFI	>0.9	0.921
RMSEA	>0.06	0.042
RMR	>0.02	0.003

Source: Primary Data, SPSS AMOS output, Haier et al. (2009); Hooper et al. (2008); Steiger (2007); Hu and Bentler (1999).

## **Interpretation**

It can be seen from Table that the Goodness of Fit Index (GFI) value was 0.949, Adjusted Goodness of Fit Index (AGFI) value was 0.925 and Comparative Fit Index (CFI) value was 0.921. All these values are (greater than 0.9) indicating a very good fit. It was found that Root Mean Score Error of Approximation (RMSEA) value was 0.042 (lesser than 0.06) and Root Mean Square Residual (RMR) value was 0.003 (lesser than 0.02).

## **Conclusion for the interpretation**

The values indicate that the model is an extremely good fit.

#### **FINDINGS**

#### **ANOVA**

It can be seen from above table that null hypotheses for the Reliability, Service quality and Customer satisfaction are rejected as the p value is lesser than 0.05. For all other dimensions, since the p value is greater than 0.05 the null hypotheses are accepted.

#### **SEM**

It can be seen from Table that the Goodness of Fit Index (GFI) value was 0.949, Adjusted Goodness of Fit Index (AGFI) value was 0.925 and Comparative Fit Index (CFI) value was 0.921. All these values are (greater than 0.9) indicating a very good fit. It was found that Root Mean Score Error of Approximation (RMSEA) value was 0.042 (lesser than 0.06) and Root Mean Square Residual (RMR) value was 0.003 (lesser than 0.02).

#### **SUGGESTIONS**

- > Patients' inputs are basic with the end goal to quantify execution and to make healthcare experts more mindful of perspectives upgrading patient's satisfaction.
- The review on patients' satisfaction is expected to gauge both the patients' anticipation and recognitions on service and service quality. There ought to be a system at the clinics which would gather the pertinent information and break down the information for suitable strategy suggestions in future. It should not be a period bound process; it ought to be a persistent one. For that reason, the healing facility ought to build up information bank.
- A coordinated patient-driven innovation guarantees that the aggregate prerequisites of the patient is in reliable with the whole association and gives the correct data at the opportune time, to the perfect individual and enhance the patient endeavor relationship. The innovation spine ought to likewise be reached out all through the venture to incorporate esteem included systems.

#### **CONCLUSION**

The significant zone of concern is the quality of health care conveyed by the private hospitals. The private sector has turned into the overwhelming sector with part of the general population looking for indoor service and other piece of the general population taking mobile care, i.e. outpatient service. The most importantly undertaking of hospital is to convey quality services to patients and furthermore to enhance the quality of services where the circumstance is by all accounts basic. The enhancement in the quality of medical services to be made accessible to clients is the need of great importance. The hospital services require both subjective and quantitative enhancements, especially in developing nations. This enhancement in the medical services can be accomplished through logical developments and advancements. Presently the whole procedure of treatment has been changed by refined hardware and innovations. The quality of services is chosen by the offices accessible in the hospital. The increase in the span of life and having a healthy existence all through life are the critical elements of human development. The healthcare business is progressively trying endeavors towards patient's satisfaction by methods for service quality. Through predictable enhancement for the distinctive components of service quality in the hospitals, patient's satisfaction is upgraded.

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