

# An Empirical Study on Service Quality Comparison Between Private and Public Hospitals in Delhi-NCR

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## ABSTRACT

The purpose of this study was to compare the healthcare service quality of private hospitals with public hospitals in Delhi-NCR. The data for the study was collected by means of a questionnaire comprising of 52 statements related to tangibility, reliability, empathy, assurance and responsiveness. Only six tertiary-level health diseases were selected for this study. A sample of 249 respondents completed the questionnaire, 121 from private hospitals in Delhi-NCR and 127 from the public hospitals in Delhi-NCR that were selected randomly from two private and two public hospitals. Factor analysis and independent t-test techniques have been employed to analyze the data. The results obtained indicated that there was a significant difference in healthcare service quality between private hospitals and public hospitals in Delhi-NCR. Tangibility, empathy, responsiveness, reliability and assurance all were better in private hospitals compared to the public hospitals. Tangibility was considered to be the most important factor that helps in determining the difference between private and public hospitals. Proper attention of the government is required to be able to improve the service quality of the public hospitals and the development of more public hospitals so as to maintain the healthcare of the people. Recommendations were made to the administrators and the healthcare providers to improve the healthcare delivery system. To improve the quality of healthcare services and for patient satisfaction, continuous monitoring of patient perception is required.

**Keywords:** Healthcare, India, Patients, Hospitals, Service Quality

## INTRODUCTION

A service does not mean something that is made in a factory, taken to a store, displayed on a shelf and then at last bought by the consumer. It is implemented on behalf of, and many times with the connection of, the consumers. There are many ways in which services are defined but all revolve around a common theme of immediate consumption and intangibility. It seems to have a subjective nature mainly because of its experience. It is mainly based upon the judgement that the person makes from the expectations he has from it. In a way, services can be defined as processes, performances and deeds which are provided by one person or entity to another person or entity (Pakdil & Harwood, 2005).

In the healthcare delivery industry, there is mainly the same type of services which is provided by the hospitals,

but these services generally differ at one point, that is, quality. Consumers these days are well aware of the alternatives available and the raising of standards of the services and the expectations. Even the consumers are becoming more critical of the service quality that they tend to experience. Therefore, as a strategic differentiation weapon, service quality can be used to build an advantage which is distinctive in nature and which would be difficult for the competitors to follow too. "zero defections" is the new concept which is introduced by the hospitals so as to be able to cater service excellence. Service quality system has to be improved in order to provide the "zero defections" concept. Furthermore, unless the quality is measured, it cannot be improved. However, hospital service quality needs a distinctive construct unlike the manufactured goods quality. It can be defined in the following ways:

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- The capability to meet the needs and wants of the customers.
- The sum total of characteristics and features of a service that helps in satisfying it needs.

As generally, consumers do not easily express the service quality of hospitals, it is the recipient of the service that can assess it, thereby making the computation more subjective. Therefore, rather than objective quality, perceived quality is taken as the measurement of the service quality of hospitals mainly because services are intangible in nature and heterogeneous too (Lim & Tang, 2000).

Consumer satisfaction has been seen as the most important theme in businesses related to service. It is considered as a psychological outcome, a perception, which is mainly based upon the experience of the service. It is actually considered to be the main source of feedback related to the performance of the employees and the organizations. It is also known as the main tool for evaluating the financial measures of the organization. It can be seen that these days patient satisfaction has become very important and even the central part of the healthcare system, which mainly aims to better the quality in terms of care. It is the satisfaction that is provided from the various indicators of service quality such as environmental, technical, functional, infrastructural and interpersonal. Healthcare industry is mainly considered to be a combination of management, resources financing and organizations that help in perfect delivery of services to the people. Aiming to improve and better the quality of care patient satisfaction is considered to be the central part of the healthcare delivery system. Satisfaction of patients has taken the central part of the healthcare industry, which mainly aims to improve the quality in terms of care (Pakdil & Harwood, 2005).

Service process, customer, management and the employees are four main dimensions that shape the SERVQUAL model of quality related to service. Many customers have wants, needs, expectations and experiences related to a particular service; the perception about the consumer needs is well known by the management and employees of the service providers; as well as the process and specifications of the service delivery. Overall, these factors are the ones that interact with each other and then give rise to mismatches between all the different pair of

factors known as gaps. These gaps mainly involve:

- Perceptions of management and expectations of consumers.
- Management and employee perception.
- Specifications of services and management perception.
- Service delivery and specifications.
- Service delivery perceptions.
- Customers expectations and perception of the employees (Kar, 2016).

To measure the satisfaction level of consumers with different parameters of service quality, SERVQUAL is used as an instrument. This instrument mainly requires the respondents to fulfil the series of scales which helps in measuring the expectations of the company's on a wide variety of issues.

On the other hand, they are required to record the perception of a company's performance on those related characteristics. A sign of poor quality is seen when the perceived performance ratings are less than the expected ones and the reverse will indicate good quality (Lim & Tang, 2000).

$SERVQUAL = Performance - Expectations$

This tool helps in knowing the difference between customers preferences and customers experiences. The dimensions of SERVQUAL are:

- Reliability/responsiveness
- Empathy
- Tangibles

In 29 states and seven union territories, India has a population of 1.3 billion people living here. These days, the healthcare industry is considered to be one of the largest sectors, in terms of revenue as well as employment. Medical devices, hospitals, clinical trials, outsourcing, telemedicine, medical tourism, health insurance and medical equipment come under the heading "healthcare". The Indian healthcare system is growing fast due to its services and increasing expenditures both by the public as well as private players. There is two major categories in the Indian healthcare system, that is, public and private. The public healthcare system (government) includes

limited tertiary and secondary institutions in the main key cities and their main aim and focus is to provide basic healthcare facilities in the rural areas in the form of primary healthcare centres. Whereas, the private sector in health industry provides the majority of secondary and tertiary institutions with a major hold in metros, tier 1 and tier 2 cities. A large number of well-trained medical professionals indicate the competitive advantage of India (Pakdil & Harwood, 2005).

Tertiary-level healthcare services are considered a third level of the healthcare system, in which proper specialized care is given to the patients who tend to suffer from chronic health diseases. Multispecialty hospitals are considered as excellent centers for these diseases to be catered to and are also known for offering comprehensive treatment for the same (Vikarma & Singh, 2016). Tertiary care is known as the specialized form of consultative care, mainly for inpatients. It also includes emergency and ambulatory patients. Either primary or secondary healthcare professionals give a referral to the patients for the tertiary care facility. In general, the term 'tertiary care hospital' refers to the major hospitals that has infrastructure and personnel for advanced medical services, treatment and diagnosis. It usually has all the services including obstetrics, paediatrics, gynaecology, various surgeries, and a speciality hospital dedicated to specific speciality care. For major operations, consultations with specialists, when sophisticated intensive care is required, patients are mainly referred to tertiary hospitals (Tahir, Nawaz, Zaka butt, and Mahmood, 2012).

## HEALTHCARE IN DELHI-NCR

Ministry of Health & Family Welfare, India has the prime responsibility to provide healthcare services to the people of Delhi-NCR. In administrating healthcare services, hospitals are seen as an integral part unit. 38 government hospitals are there under the Delhi government. Besides these, All India Institute of Medical Sciences (AIIMS), Deen Dayal Upadhyay Hospital, New Delhi, and Ram Manohar Lohia hospital, New Delhi, are some of the important hospitals in Delhi-NCR, which come under the Central government.

There are also a large number of private hospitals in Delhi-NCR. The private hospitals like Apollo Hospitals, Max healthcare Hospitals, Fortis Hospitals in Delhi are

known for the multispeciality types and the hospitals like Centre for Sight hospitals for eye, RG stone clinic for Urology and related medical problems are known as the super specialization types.

The healthcare service systems in Delhi-NCR are a mix of both private and public hospitals which cater to all the population that resides in Delhi and also neighboring places like Gurgaon, Ghaziabad, Faridabad and Noida, which mainly constitute the Delhi-NCR region.

## LITERATURE REVIEW

### Factors Affecting Patients' Satisfaction Level

Patient satisfaction can be defined as the satisfaction which is derived from the various healthcare dimensions, mainly hospital cleanliness, waiting time period, nursing care quality, good quality physician's, kind staff, technology advancement and medicines availability (Al-Omar, 2000). Staff courtesy, friendliness, nursing care quality, information sharing, meals satisfaction, waiting area, cost of staff, cost of service and at last the overall quality of hospital service are the factors which have a positive impact on the satisfaction level of healthcare consumers and their loyalty (Pakdil & Harwood, 2005).

Patients these days have become very health conscious and they see various factors like mode of payment, treatment time, cleanliness, medical qualifications, technological advancements, physical condition of the equipment, waiting time, image and reputation of the hospital, staff behavior, nursing care, range of services, recommendations by relatives, cost, location before deciding on how satisfied they are from the services of the hospital (Verma, 2011). Patient's expectations, mainly about professional communication and the physicians ability, OPD service, laboratory staff behavior, pharmacy in the hospital and service cost are also significant factors determining satisfaction level. Most of the studies that have been published indicate that factors which affect choice of decision in terms of hospitals of the patients are ambulance reference, advice of the physician, income level of family, type of insurance, service cost, publicity and advertisement, admission process time, 24-hour services availability, specialist doctors, confidential record keeping, mode of payment and punctuality of staff (Bahrami & Jannati 2013, Dubey & Sharma, 2013).

The factors which contribute to the patient satisfaction level in the case of private hospitals are fast administration process, hygiene factors, visit of doctors and nurses, service personnel behavior, complaint handling process, service promptness. On the other hand, factors which contribute to the dissatisfaction of patients in the case of private hospitals are high cost of treatment, a lot of unnecessary medical tests, lot of investigations, no permanent doctors, and lack of efficient and effective nurses (Choudhary, 2008).

### Consumer Expectations

“The most common definition of service quality in the service marketing is the difference between the expectations of the consumer had before the service encounter and the perception of the consumer after the service encounter” (Clow et al., 1997). This definition basically reflects that the consumer satisfaction level is achieved only if the service experience meets or exceeds their expectations (Bitner, 1990). These imply that the quality of service can be measured by measuring the expectations of the patients.

Gronroos (1990) & Ziethaml (1993) both developed a model of consumer expectations in order to determine different ways of measurement. Gronroos (1990) states that the company image is the main factor that influences customer expectations in terms of service. Therefore, a positive image will always act to the consumer as an excuse for poor performance, and a negative image will be extremely difficult to overcome the indifferent of service performance. Zeithaml (1993) shows a model in relation to customer expectations mainly in four parts: service expectation, service desired, service adequacy and service prediction. Also, this model shows the direct reference to the tolerance zone, the minimum service level that the customer is ready to accept. The efficiency and reliability of the two models are put in doubt. Such old premises might not be applied today mainly because of the constant evolution of consumers and markets.

Thus, Clow et al. (1997) show a new, recent, model of consumer expectations which combines two models formed by Gronroos (1990) & Ziethaml (1993). The author tested the combination model across four industries. The model gives interesting data along with data reliability.

The study finds that the firms' image is the strongest indicator of the expectations of the consumers. Which means that if the consumers have high expectations, it is mainly because of the good image of the firm. Also, the study finds advertisements are less important in case of services than products. But, the author was not able to find out the answer as to why advertisements have no effects on the consumer in terms of the firm's image also what are the various image impacts between different industries.

### Healthcare Quality

Health services are mainly engaged in marketing, in one way or the other. In this scenario, it was observed that most of healthcare organizations were pursuing either of the two alternatives available: 1) To maintain public relations or do proper planning in the same case and 2) to not assign the responsibility of marketing to any individual or administrators (Kotler & Clark, 1987). The question which arises over here is: what is healthcare quality? Service quality research has gained more prominence in just recent years but still there is one difficulty in terms of their measurement and that is its intangible nature (Bolton & Drew, 1991). Practitioners and academicians generally use the term perceived quality whereas there has not yet been any generally accepted definition. The conceptualization in terms of theory of perceived quality shows that it is a multidimensional, high construct and cannot be measured in terms of a single dimension (Brady & Roberston, 2001).

In relation to quality, one of the issues which creates a lot of problem in confronting the researchers in terms of quality management is searching the appropriate definition; defining such a construct which is multifaceted such as “quality” is very difficult mainly because of the possible alternatives which are available (Fynes & Voss, 2002). However, the quality of service can be defined as the global judgement or behavior relating to the overall excellence of the service, which reflects a consumer's expectations of a firm performing a service (Parasuraman et al., 1988). A service can also be seen as a process which mainly consists of a series of more or less activities that are intangible, that normally, but not compulsorily, take place because of the interactions between the service providers and the customers which can be seen as a solution to problems of customers (Gronroos, 2000).

Service quality is also seen as a global judgement or perception in relation to a particular service; the overall impression of a customer of the inferiority or superiority of the firm and its services (Fogli, 2006). Service quality has been defined as a form of perception – a long overall evaluation (Zeithaml, 1988; Parasuraman et al., 1988). Service quality can be seen as a distinct construct. Several perspectives can define service including:

- The be able to satisfy the needs, wants and expectations of the customer (Bergman & Klefsjo, 1994).
- The total number of features and characteristics of a service that bear on its ability to satisfy the given wants and needs (Evans & Lindsay, 1999).

### Measuring of Healthcare Quality

Consumer's perceptions are increasingly becoming very important in doing the evaluation of the healthcare quality even when they differ a little from the concept of quality that is maintained by the providers of healthcare and authorities of healthcare (Calnan, 1988), as their opinions can be taken for meaningful changes in the system of healthcare (Palmer, 1991). Healthcare quality can be seen as multidimensional, and one of the major challenges is to distil the various dimensions into easier measures that can be easily calculated, mostly low cost so that these measures can be taken as the main focus of the main policies made to improve quality of healthcare. To determine the criteria on which the service quality of healthcare is assessed is also considered very important. The main measurement of service quality in the healthcare industry includes functional measurement or process-related (Zeithaml & Bitner, 2003).

Weitzman (1995) shows that quality of healthcare can be defined in relationship to 1) aspects of care in technical terms, 2) practitioner and patient and their interpersonal relationship, and 3) care amenities. In the healthcare industry, the major measurement of perceived service quality includes three-component measurement (structure, process and outcome), SERVQUAL, 5Qs and JCAHO model. SERVQUAL measurement which was proposed by Parasuraman, Zeithaml and Berry in 1985 and later in 1988 and 1991 was, thus, reviewed first.

The functional and technical measurements to measure the services of healthcare. The technical aspect of quality

in healthcare industry refers to the correct accuracy of therapeutic and diagnostic processes, whereas functional dimensional can be defined as the behavior and manner of the healthcare providers during the delivery process of the service (Brook & William, 1975; Babakus & Mangold, 1992).

The three-component process of measurement which was proposed by Ziko-Baliga & Krampt (1997) mainly includes the structure which is known as the hospital itself which includes the environment as well as physical facilities. The process can be defined as the service events that are encountered by patients from the point they are notified that hospitalization is much needed until the outcome is achieved which includes communication, availability, interaction and so on.

In operations of service, Parasuraman et al. (1988) made a gap model to be able to measure the components of service quality. This gap model includes the following components of service quality:

- Reliability which involves performance and dependability consistency,
- Responsiveness which deals with the readiness and willingness of employees to provide service,
- Competence which means holding the of the required knowledge and skills to perform the services,
- Access which shows the ease of contract and approachability,
- Courtesy which indicated politeness, consideration, respect, friendliness of the personnel,
- Communications which indicates to keep the customers informed in language which is easy to understand and listening too,
- Credibility which shows the trustworthiness and honesty,
- Security which means staying away from danger, doubt or risk,
- Knowing the customer which indicates making an effort to understand the needs and wants of the customer,
- Tangibles which indicates the physical evidence of the service.

All these references are based on concepts which are similar in attitude and expectations. Fishbien (1963) indicates that attitudes are a function of:

- Beliefs in reference to the attitude object, which can be defined as the subjectivity probability that the object has each attribute, and
- The measurement aspect of these beliefs, mainly defined as the evaluation of each attribute.

This model mainly focuses upon the beliefs as the main cause of attitudes and hence assumed that attitudes are mainly derived from beliefs. Gap model of service quality given by Parasuraman et al., 1988 is very widely accepted and applied in healthcare industry also. Many scholars highlight that responsiveness, reliability, assurance and empathy are the important service quality characteristics. Reliability is mainly indicated as the ability of the service provider to implement the service quality that was promised in terms of accuracy and dependability (Wong & Sohal, 2003). Responsiveness is mainly defined as the ability of the service provider to provide service quickly and accurately (Jhonson, 2006).

Assurance can be referred to as the credibility, security and competence in service delivery mechanism (Juhaweer & Ross, 2003) whereas empathy can be related to caring, understanding and attention to the customers' needs while providing the service. This literature indicates that support for the framework proposed and the measuring instrument was not always considered very strong. For example, Carman (1990) suggested that in specific situations of service, it may be essential to delete or modify some of the SERVQUAL components or may introduce some new one. Whereas some studies showed the importance and need of 22 instrument and adjusted it to some settings such as walk-in clients and private hospitals. And, some studies incorporated the other dimensions which were not mentioned in the SERVQUAL instrument.

Bahia & Nantel (2000) did a research to develop a measurement of perceived service quality in the retail banking sector of Canada. They showed that the SERVQUAL approach has not yet except the critic; therefore, a new measurement was developed by them for seeing the perceived service quality in retail banking. A scale was proposed that was known as bank service quality (BSQ). It comprised of 31 items which were then classified into six dimensions as assurance and effective-

ness, price, access, range of services, tangible, reliability and accuracy. The views regarding the factors made the use of problematic Gap model. It was seen in several studies that there was an argument that this gap measurement was not appropriate in the healthcare industry mainly because many patients do not keep expectations from the healthcare services (Backbus & Boller, 1992). Jun et al. (1988) categorized quality perceptions as the evaluations of the experience care. And moreover, previous works have always suggested and supported that caring. Donabedian (1980) provided criteria for what can be considered as 'good care' mainly using the framework structure, process and outcome. Donabedian developed seven attributes of quality of healthcare: effectiveness, equity, legitimacy, efficacy, efficiency, acceptability and optimality. Using the focus group interviews of physicians, patients and administrators, Jun et al. (1988) found 11 dimensions of healthcare quality. Eight of these dimensions were a part of known Parasuraman model. The other three are caring which involves personal and human involvement, outcomes of patients which involves life-saving and relief from pain, and lastly collaboration.

### Perceived Service Quality in the Hospital Sector

Location of the healthcare provider, access to healthcare, personal caring, caring of health, the satisfaction of the patient, and quality are very much researched and talked about. They have always been identified as main indicators to service quality of healthcare. Reidenbach & Smallwood (1990) did a factor analysis and service quality operations in terms of patient confidence, competence business, quality of treatment, the support system of services, waiting time, physical appearances & empathy. Many other researchers also developed a framework of their own and instruments too as to conceptualize quality of service in hospitals. Vandamme and Leunis (1993) developed a scale so as to be able to measure the service quality provided by the hospitals to the patients, but in this case from the patients' point of view. They saw that medical responsiveness, assurance, tangibility, nursing, quality of staff and personal beliefs to be considered as the dimensions of the service quality of hospitals. Tomes & Ng (1995) designed a measurement scale so as to be able to assess the service quality provided by the hospitals in the US. They indicated that mutual relationship, respect, empathy,

dignity, religious needs were considered as the intangible factors whereas food and the physical environment were considered as the tangible factors of the services offered. Strawderman & Koubek (2006) mainly did researches on factors relating to humans. To be able to model the quality of service, six dimensions were proposed wherein the five dimensions of SERVQUAL were considered that are reliability, assurance, responsiveness, empathy and tangibles. Usability was seen as the sixth dimension and was added in the modified instrument of survey termed as SERVICE.

Both the tools of measurement SERVICE AND SERVQUAL were found out to be significant predictors of quality of service, behavioral intentions and satisfaction in the healthcare setting. A significant predictor of service quality, satisfaction and behavioral was Usability. It also added significant value to the model of regression when the dependent variable was intended behavior. So, usability should be considered as a factor while measuring service quality. The study by Walsh (2007) provides the healthcare system with more understanding of complexity, gaps and challenges of using an electronic adverse recording system so as to be able to improve the patient safety.

In the healthcare industry, it was also seen that patients considered the physical facilities as least important factor. Outcome, nursing care and physical care consisted technical care whereas noise, food, room temperature, cleanliness & parking were parts of interpersonal care. Jabnoun and Chakar (2003) made use of the five dimensions of the SERVQUAL to be able to compare the quality of public and private hospitals. The results were seen as that the usage of five factors of SERVQUAL were really reliable. It showed that in-patients are mostly unhappy with the overall quality of service and all the other dimensions of the instrument. The most unsatisfactory factors are the ones that are associated with the tangibles components whereas the least unsatisfactory factors are the ones that are associated with empathy. It has been seen that reliability contributes a lot to the variations in perception of the overall service. The results related to the regression and correlation mainly supports the predictive validity of the dimensions of reliability, tangibles, dimensions and supporting skills.

According to the study which was conducted by Hasin et al. (2001), communication, cost, courtesy, responsiveness

and cleanliness were the main component dimensions of the service quality in hospitals. It was found that even though good services were provided by the hospitals but behavior and attitude of the employees had to be improved as in relation to the non-conforming services. Baldwin & Sohal (2003), while evaluating relationship between service quality practices and outcomes in dental care settings, found that patient's involvement in treatment and doctor's support in anxiety and fear have significant impact on overall satisfaction and quality of services. Boshoff and Gray (2004) evaluated the relationship between the service quality of hospitals and buying intentions of patients. The service quality was operationalized using these dimensions, communications, tangibles, nursing staff empathy, physical responsiveness and security. Otazi & Kurtz (2004) found that nursing care, processes of admission & discharge and doctors support are the main components of service quality in healthcare. Dummer (2007) showed that the task of indicating the way in which the healthcare system can be the most efficient and effective is the task of all the healthcare staff. It should be seen that the aims are clarified, performance criteria and measures are set, and appropriate standards are set up. It is also the responsibility of the management to ensure the consistency and coherence of different activities that mainly contribute to the good healthcare. In the study done by Simbhar et al. (2006) with the aim to assess the quality of family planning services mainly in the urban healthcare centers of Shahid Beseti Medical Science University, it was founded that the clients were highly satisfied with the services and happy too.

## **METHODOLOGY**

### **Research Objectives**

- To compare the service quality between private hospitals and public hospitals in Delhi-NCR hospitals.
- To identify the service quality dimensions that have an influence upon the comparison of service quality between private hospitals and public hospitals.
- To study the dimensionality and importance of SERVQUAL instrument.

The main objective of this study was to compare the service quality provided in public and private hospitals in Delhi NCR and also to test the dimensionality of

SERVQUAL instrument in the Delhi NCR hospitals. Another objective was to identify the service quality dimensions which play important role in knowing the difference of service quality between private hospitals and public hospitals. 2 private and 2 government hospitals in Delhi NCR were chosen for the study. Patients suffering from tertiary level health diseases, based in Delhi NCR comprised the population. Patients suffering from 6 types of tertiary health level diseases (Heart By-Pass, Heart Stent Surgery, Knee Joint Replacement, Intestine Problem, Lung Disorders and Hip Joint Replacement) were taken as respondents. Table 1 shows the distribution of the Respondents disease-wise and also according to the hospital whether private or government.

Keeping in mind the awareness level of the respondents, a set of 52 questions, based on self-developed scale, was administered. They were asked to rate the satisfaction level experienced in the hospital on a 5 Point satisfaction level scale (1 = Strongly Dissatisfied, 2 = Dissatisfied, 3 = Neither Dissatisfied nor Satisfied, 4 = satisfied, 5 =

Strongly Satisfied). Various demographic variables were also asked so as to understand the diverse behavior of the respondents. Demographic criteria and health insurance break up has been shown in Table 2. Respondents were given 10 minutes to fill the questionnaire. The questionnaire was distributed to 300 patients, out of which 260 responded, but because not all surveys were fully completed, 250 were included in the analysis. The sample was chosen by non-probability sampling, specifically convenience sampling. Apart from this various research papers from various publications were studied which were mentioned in the reference section.

For analysis, SPSS (Statistical Package for the Social Sciences), a software by IBM used for analyzing the data and deriving relevant conclusions.

The above-mentioned approach, tools, questions were chosen as they fit perfectly with research and would answer all the relevant questions in the best possible manner.

**Table 1: Disease Wise Distribution of Respondents from Each Hospital**

	<i>Heart By-Pass</i>	<i>Heart Stent Implant</i>	<i>Knee Joint Replacement</i>	<i>Intestine Problem</i>	<i>Lung Disorders</i>	<i>Hip Joint Replacement</i>	<i>Total</i>
Private hospital 1	11	10	16	7	8	7	59
Private hospital 2	17	16	10	8	7	5	63
Government hospital 1	10	12	13	6	8	4	53
Government hospital 2	17	17	16	11	10	3	74
Total	55	55	55	32	33	19	249

**Table 2: Demographic Criteria and Health-Insurance - Wise Break up of Respondents**

	<i>No. of Respondents</i>	<i>Percentage</i>
Age		
Up to 20 years	10	.04
21 to 35 years	5	.02
36 to 50 years	98	.39
50 years and above	136	.54
Gender		
Male	106	.42
Female	143	.57
Education		
Post-Graduation and above	35	.14

	<i>No. of Respondents</i>	<i>Percentage</i>
Graduation	80	.32
Diploma	75	.30
Class 12 <sup>th</sup> or below	59	.23
Monthly Family Income		
Up to 25,000	16	.06
25,001 to 50,000	110	.44
More than 50,000	123	.49
Health insurance		
Yes	117	.46
No	132	.53

## Measures

*Tangibility:* Tangibility is the first construct of service quality in this study, which represents the appearances of physical equipment, personnel and communication relate materials. This includes the availability of proper signboards, adequate space for parking, convenient location of hospital, availability of trolley at the reception etc. All the items under tangibility were measured under five-point Likert scale from 1 = strongly dissatisfied to 5 = strongly satisfied.

*Empathy:* Empathy is the second construct of service quality which includes items such as courteous and cooperative behavior of registration staff, courteous and cooperative behavior of security and supporting staff, courteous and cooperative behavior of nursing staff, required tests and diagnosis were explained properly etc. All the items under Empathy were measured under five-point Likert scale from 1 = strongly dissatisfied to 5 = strongly satisfied.

*Assurance:* The third construct of service quality consists of items such as schedule and time of treatment were explained properly, tension-free relaxed environment, efficient system of addressing complaints, waiting time at registration counter etc. All the items under Assurance were measured under five-point Likert scale from 1 = strongly dissatisfied to 5 = strongly satisfied.

*Reliability:* The fourth construct of service quality includes items such as correct and timely reports given by the laboratories, availability of required blood group,

sufficient nursing staff, years of existence of the hospital, awareness about disease and its treatment process etc. All the items under Reliability were measured under five-point Likert scale from 1 = strongly dissatisfied to 5 = strongly satisfied.

*Responsiveness:* The fifth construct of service quality included items such as disease and consequences were properly explained, doctors advise about the ways to avoid illness and stay healthy, query handling at reception, speed in the delivery of services etc. All the items under Responsiveness were measured under five-point Likert scale from 1 = strongly dissatisfied to 5 = strongly satisfied.

Measures of Sample adequacy such as Kaiser-Meyer-Olkin (.963) and Barlett's Test of Sphericity (approximate chi-square 8.932E3, degrees of freedom 1326, significance .00) indicates that factor analysis can be applied. Principal component analysis with varimax rotation method has been used for extracting the factors. Statements which have factor loadings value greater than 0.5 have been taken. Independent t-test has been used as a measure.

## RESULTS AND DISCUSSIONS

Five factors have been extracted, which cumulatively explain 57.121 of the total variance. Statistically, significant differences have been found between the five dimensions of SERVQUAL. Only statements which have factor loadings more than 0.5 have been considered in this study.

## Factor Analysis

**Table 3: KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.963
Bartlett's Test of Sphericity	Approx. Chi-Square	8.932E3
	df	1326
	Sig.	.000

### Tangibility

This factor is considered to be the most important factor which helps in comparing service quality difference between private hospitals and public hospitals. There were five service features which significantly load on this factor are adequate space of parking vehicles, cleanliness of the toilets, convenient location of the hospital, quality of ambulance service, facility of ATM/banks.

### Empathy

This is another factor that is considered to be important and helps in determining the service quality difference between public and private hospitals. There were five service features which significantly load on this factor are courteous and cooperative behavior of nursing staff, courteous and cooperative behavior of registration staff, personal attention and proper time given by doctors, personal and proper attention given by nursing staff.

### Assurance

This is another factor that is considered to be important and helps in determining the service quality difference between public and private hospitals. There were five service features which significantly load on this factor which are brand name of the hospital, efficient system of addressing the complaints, privacy during clinical examination, a tie-up of hospitals with insurance companies.

### Reliability

This is another factor that is considered to be important and helps in determining the service quality difference between public and private hospitals. There were five service features which significantly load on this factor which are awareness about disease and its treatment process, years of existence of the hospital, sufficient nursing staff, timings of the OPD area, availability of required blood groups.

### Responsiveness

This is another factor that is considered to be important and helps in determining the service quality difference between public and private hospitals. There were five service features which significantly load on this factor which are disease and its consequences were explained properly, doctors advised the way to be healthy, queries handling at reception counter, problem was listened carefully by the doctors, ease of getting appointments.

**Table 4**

<i>Name</i>	<i>Statements</i>	<i>Factor Loadings</i>
Tangibility	Adequate space of parking vehicles	.812
	Cleanliness of the toilets	.804
	Convenient location of the hospital	.796
	Quality of ambulance service	.736
	Facility of ATM/banks	.694
Empathy	Courteous and cooperative behavior of nursing staff	.735
	Courteous and cooperative behavior of registration staff	.705
	Personal attention and proper time given by doctors	.701
	Personal attention and proper time given by doctors	.694
	Personal and proper attention given by nursing staff	.609
Assurance	Brand name of the hospital	.801
	Efficient system of addressing the complaints	.762
	privacy during clinical examination	.713

Name	Statements	Factor Loadings
	Tie-up of hospitals with insurance companies	.693
	Efficient system of addressing complaints.	.610
Reliability	Disease and its treatment process	.782
	Years of existence of the hospital	.789
	Sufficient nursing staff	.634
	Timings of the OPD area	.606
	Availability of required blood groups	.601
Responsiveness	Disease and its consequences were explained properly	.768
	Doctors advised the way to be healthy	.756
	Queries handling at reception counter	.707
	Problem was listened carefully by the doctors	.688
	Ease of getting appointments	.654

### Independent t-test

**Table 5: Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Tangibility	Equal variances assumed	5.494	.020	38.966	246	.000	1.53856	.03948	1.46079	1.61633
	Equal variances not assumed			39.214	235.216	.000	1.53856	.03924	1.46126	1.61585
Responsiveness	Equal variances assumed	2.765	.098	29.211	246	.000	1.10739	.03791	1.03272	1.18206
	Equal variances not assumed			29.330	242.478	.000	1.10739	.03776	1.03302	1.18176
Reliability	Equal variances assumed	3.388	.067	28.780	246	.000	1.11488	.03874	1.03858	1.19118
	Equal variances not assumed			28.878	243.927	.000	1.11488	.03861	1.03884	1.19093
Assurance	Equal variances assumed	10.642	.001	33.759	246	.000	1.38067	.04090	1.30012	1.46123
	Equal variances not assumed			34.011	230.400	.000	1.38067	.04059	1.30069	1.46066
Empathy	Equal variances assumed	9.344	.002	34.754	246	.000	1.78266	.05129	1.68163	1.88370
	Equal variances not assumed			35.010	230.877	.000	1.78266	.05092	1.68234	1.88299

Values of Levene's test for equality of variances is reported which shows insignificant p-values (0.20) showing the variances of both groups are same. At-value 39.214, df 235.216 has a significant p-value 0.000 which indicates that the factor tangible is better than public hospitals. As private hospitals are aimed to provide the best service quality to their patients, they have better infrastructure as compared to the public hospitals. Even in the case of hygiene, private hospitals are providing better facilities. Areas of the hospitals such as toilets, waiting areas, wards, rooms are cleaner in private hospitals than public hospitals, and even germ-killing techniques used are better in case of private hospitals. It can be interpreted that private hospitals provide a healthy environment

which shows their dedication towards providing excellent service quality to their patients.

Values of Levene's test for equality of variances is reported which shows insignificant p-values (0.98) showing the variances of both groups are same. At-value 29.211, df 242.478 has a significant p-value 0.000 which indicates that private hospitals are more responsiveness while attending the patients as compared to the public hospitals. Patient satisfaction is the main aim of private hospitals, which includes quick relief from illness by providing good quality of services to the patients. To make a comfortable and developed feedback mechanism for increasing their service quality on a continuous basis,

the doctors, nurses and other supporting staff respond to the patients call quickly. Although, in public hospitals, there is a very slow feedback mechanism, as they lack in that. Therefore it can be interpreted that private hospitals are more responsiveness than public hospitals.

Values of Levene's test for equality of variances is reported which shows insignificant p-values (0.67) showing the variances of both groups are same. At-value 28.878, df 243.927 has a significant p-value 0.000 which indicates that private hospitals are more reliable than the public hospitals. Private hospitals have sufficient and talented nursing staff as compared to public hospitals. In private hospitals the patients are dealt with sympathetic behavior, supporting staff answer their queries patiently, which is not the same in public hospitals. Private hospitals due to the use of expensive technology are more aware of the diseases and their treatment as compared to public hospitals. Therefore it can be interpreted that private hospitals have more reliability factor than the public hospitals.

Values of Levene's test for equality of variances is reported which shows insignificant p-values (0.01) showing the variances of both groups are same. At-value 34.011, df 230.400 has a significant p-value 0.000 which indicates that private hospitals provide more assurance in terms of better treatment to the patients than the public hospitals and provides better satisfaction. An expert panel of doctors, well-equipped labs, highly skilled lab technicians helps in generating better results regarding any test which helps in getting accurate results. Public hospitals generally lack in all the above mentioned. Therefore, it can be interpreted that patients perceive higher assurance in case of private hospitals than public hospitals.

Values of Levene's test for equality of variances is reported which shows insignificant p-values (0.02) showing the variances of both groups are same. At-value 35.010, df 230.877 has a significant p-value 0.000 which indicates that private hospitals are more empathetic in dealing with patients as compared to the public hospitals. Doctors are seen to be more concerned towards their patients as private hospitals have their main aim as providing the best of services to their patients and have hired the best doctors for the same. To achieve the goal of being at the top, and ahead of their competitors to get the

competitive edge, all the people involved in operations, being it nurse, doctor, other staff are trying their best to provide extra care to their patients and showing more concern to make their customer happy. Therefore, it can be interpreted that private hospitals are seen to be more empathetic towards their patients as compared to the public hospitals.

## CONCLUSION

From the discussions and the results above, it can be concluded from the empirical findings that Private hospitals are generally providing better facilities to the patients in the healthcare industry and are seen contributing positively in so as to lower the burden of government hospitals. This concludes are study that private hospitals in Delhi-NCR provide better healthcare service quality as compared to the government hospitals. Private hospitals in Delhi-NCR are making much more efforts in comparison to public hospitals. Reason being that private hospitals are fully dependent upon the customers in order to be able to meet the financial requirements and be able to gain profits. It can be concluded from the results of this study that private hospitals like many other service organizations or businesses mainly focus upon their patients' requirements and demands and developing themselves so as to be able to provide good healthcare service quality to their patients. The above-discussed results also show that in case of private hospitals, everyone including the nurses, doctors and support staff have their basic aim so as to provide proper care to their patients, healthy and clean environment not only to their patients but also to the attendants, excellent equipment, efficient call handling system, all medical tests and pharmacy facilities in the hospitals along with the development of feedback mechanism. It is mainly because of all these efforts that these hospitals to bring continuous improvements in their processes, system and providing better and better healthcare-service quality improvements to their patients.

Although there are many reasons and factors due to which poor quality of healthcare services are provided to the patients by public hospitals in comparison to the private hospitals. Government funding, over-crowded public hospitals, over-burdened public hospitals, less-newer initiatives by government in government hospitals, the rapid growth of rural population moving to the major

cities from rural cities are some of the reasons of poor service quality by public hospitals in comparison to the private hospitals. These reasons are the main sources that are affecting the service quality of government hospitals. It can be seen from the results that in public hospitals pain is not at all taken by the supporting staff nurses, doctors so as to provide individual attention to their patients and take care of them, take care of clean environment, provision of sterilized equipment, low feedback mechanism provision, and low commitment level towards taking up their responsibilities. Proper attention of the government is required to be able to improve the service quality of the public hospitals and the development of more public hospitals so as to maintain the healthcare of the people.

It was also seen that Tangibility is the most important factor in the SERVQUAL that affects the service quality comparison between private and public hospitals in Delhi-NCR. Responsiveness was the least important factor in this case. This shows that tangibility such as location, equipment, personnel, parking space etc. play an important role in service quality. Even the patients consider the factors under Tangibility and then decide which hospital provides better service quality.

### LIMITATIONS AND FUTURE RESEARCH

The basic limitation of this study is that it is conducted only in Delhi NCR, which explains the viewpoints of only one region and other regions have been excluded. Another limitation is that the study has been conducted within a limited period of time due to which many only 6 tertiary level diseases have been included. The study has been conducted only with a limited number of respondents using a convenience sampling method.

In future research, other methods of sampling can be used, and even the sample size can be increased so as to get better results in terms of service quality comparison between private and public hospitals. Researchers can also include more tertiary diseases and then conduct disease-wise analysis to understand the service quality comparison between the same. This research has included only five service quality dimensions but in future for better and comprehensive results many other service quality dimensions can also be included, it might provide a more accurate response.

### FUTURE RECOMMENDATIONS

With a proper understanding of how patients are evaluating the quality of healthcare services, administrators and health-care providers can improve and better their healthcare delivery system. If proper monitoring of patient perceptions is done on a continuous basis it will help in improving the quality of healthcare along with patient satisfaction. The difference in the scores gives insights that there is a lot of scope of improvement so as to get better overall quality evaluations from patients in public hospital services.

Also, the findings of this study may help the hospital managers to understand the perception of patients/customers about service quality. Hospital managers can use these findings to improve the service delivery process hence resulting in customer satisfaction. Moreover, patients can refer these findings to understand service quality which has a direct impact on their expectations from the service provider. These findings may help the researchers to carry out empirical studies in future.

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