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A Study of Service Quality and Patient Satisfaction in Private Hospitals of North Maharashtra Region

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Abstract: In recent years, developments in the Indian healthcare sector have led the improvement in the quality of healthcare services being offered in the country. The strategic importance of quality service in hospitals is receiving increasing recognition and study. This study aims to measure the expected and perceived quality of healthcare services in private hospitals of Jalgaon and Dhule districts in the North region of Maharashtra, India. To achieve the objectives of the study, a questionnaire was developed using SERVQUAL model for the purpose of data collection. The sample of the study consisted of 120 Patients from 10 different private hospitals in the region. The most important conclusion found by the study is the private hospitals are more reliable as far as the service quality is concerned. But, there is a gap between the actual quality of health services perceived and the quality of health services expected by the patients. The study also revealed that while expecting and evaluating patients give varied importance to all the dimensions.

Keywords: Service quality; service quality dimensions; SERVQUAL, patient expectations; patient perception, patient satisfaction.

I. INTRODUCTION

In recent years, healthcare is one of the fastest growing industries. Medical establishments are becoming organized institutions where complex procedures are followed and efficient manpower is needed to manage these processes. People expect hospitals to deliver quality service 24 x 7 x 365 (Welfare, 2017). Healthcare facilities especially are improving to such level that even people from other countries are looking at Indian hospitals and doctors. Private and government hospitals have thrived in the country and house the best equipment and highly skilled doctors to treat illnesses (Sehat, 2017). There is an urgent need to have professionally trained and competent people in the field of hospital administration who can ensure quality work and better productivity in the delivery of healthcare services (Welfare, 2017). In the healthcare sector, customer satisfaction is a vital concern as in other service sectors (Shabbir S, 2010). Patient satisfaction can be achieved by providing quality services, keeping in view patients expectations and continuous improvement in the healthcare service (Zineldin, 2006). This paper attempts to measure service quality and patients satisfaction of the selected private hospitals of Jalgaon and Dhule districts in the North Maharashtra Region of Maharashtra, India.

II. LITERATURE REVIEW

SERVQUAL is an abbreviation of the term Service Quality and a well-tested survey method for measuring service quality which focuses on five service quality dimensions. SERVQUAL surveys usually include 22 service areas distributed throughout the five service quality dimensions. The survey asks the customers to provide two different ratings on each attribute- one reflecting the level of service they would expect from excellent companies in a given sector and the other reflecting their

perception of the service delivered by a specific company within a sector. The difference between the expectation and perception rating constitutes a qualified measure of service quality (Tazreen, 2012).

(Preeti, 2009) concluded that "In the private hospitals of North Maharashtra region the patients satisfaction in a hospital consists of various quality dimensions such as, satisfaction with food, attitude of support staff and doctors, physicians attending to the needs of patients, their efficiency in between the problems, sincerity in solving problems and responsiveness to patient's requests. It is observed that the strongest predictor of cumulative satisfaction is empathy of nursing staff; assurance and competencies and efficiency of physicians"

The patients from the selected government hospitals in the north Maharashtra region perceive that the efforts are not made to deliver better service quality in terms of SERVQUAL dimensions such as tangibility, responsiveness, assurance, and empathy, except for the reliability dimension. The mean of expectations items is high when compared to the mean of perception items, except for the reliability dimension (Wath Makarand, 2017).

(Parasuraman A., 1985) suggested that the perception of the customer about the service quality depends upon the gap between the service the customer expects to receive and what customer perceives to have been received. Thus, service quality is defined as the gap between the expectation and perception.

Parasuraman's SERVQUAL model is most widely used to measure perceived service quality. He has positioned consumer's perception of service quality along with a gamut ranging from ideal quality to totally unacceptable quality (Sachin S. Kamble, 2011). The starting point in developing quality in services is to analysis and measures it (Edvardsen, 1997).

The SERVQUAL model has five dimensions and comprising 22 statements. These dimensions include tangibility, reliability, responsiveness, assurance, and empathy (Parasuraman A., 1985).

III. RESEARCH OBJECTIVE

This study measures the perceived level of service quality and patient's satisfaction in private hospitals. The objectives of the studies were

1. To measure the service quality expected by the patients in private hospitals

2. To measure the service quality perceived by the patients in private hospitals

3. To determine differences, if any, between the quality expectations and perceptions in private hospitals

Hypothesis

H0: There is no difference in the means of the expectation SERVQUAL dimensions in private hospitals

H1: The means of the expectation differ in at least one SERVQUAL dimensions in private hospitals

H0: There is no difference in the means of the perception SERVQUAL dimensions in private hospitals

H1: The means of the perception differ in at least one SERVQUAL dimensions in private hospitals

H0: There exist no differences between the quality expectations and perceptions in private hospitals

H1: There exist differences between the quality expectations and perceptions in private hospitals

IV. RESEARCH METHODOLOGY

Data collection and research instrument

To achieve the research objectives, a survey involving 120 patients admitted to the 10 private hospitals of Jalgaon and Dhule districts of North Maharashtra region was conducted. The selection of the patients was random. The survey was spread

over 30 days in order to cover a varied range of patients. The instrument used for data collection was a questionnaire developed based on the SERVQUAL measure for evaluating services. The questionnaire was modified for the 22 paired question statements (also called items) to measure expectations and perceptions. The patients of the private hospitals were asked to rate the statements based on the 7-point Likert scale from numerical 1 as strongly disagree to numerical 7 as strongly agree. The questionnaire collected the demographic information such as gender, age, occupation, income, residing area, education and number of days in hospitals.

V. DATA ANALYSIS

To achieve the first two research objectives, the analysis was carried out by calculating the means, to test the significance, repeated measure ANOVA test was used. For the third objective, paired sample t-test was used.

Data Analysis and Inference

A reliability analysis was carried out on the expectation and perception value scale comprising 44 items. Cronbach's alpha showed the questionnaire to reach acceptable reliability, α = 0.901.

Table: I Reliability Analysis

Sr. #	Dimension	Expectation - Cronbach's Alpha	Perception- Cronbach's Alpha
1	Tangibility	0.817	0.798
2	Reliability	0.874	0.612
3	Responsiveness	0.827	0.772
4	Assurance	0.635	0.799
5	Empathy	0.817	0.675
6	Overall	0.912	0.701

The demographic profile of the patients for the selected private hospitals is presented in the Table: II

Table: II Demographic Profile

Demographic	Particular	Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	78	65	65	65
	Female	42	35	35	100
	Total	**120**	**100**	**100**	
Age (Years)	Less than 40 yrs	23	19.2	19.2	19.2
	Between 40 to 60 yrs	74	61.7	61.7	80.8
	More than 60 yrs	23	19.2	19.2	100
	Total	120	100	100	
Marital Status	Married	113	94.2	94.2	94.2
	Unmarried	7	5.8	5.8	100
	Total	**120**	**100**	**100**	
Occupation	Agriculture	44	36.7	36.7	36.7
	Govt. Employee	3	2.5	2.5	39.2
	Pvt. Employee	30	25	25	64.2
	House Wife	28	23.3	23.3	87.5
	Self-Employed	12	10	10	97.5
	Unemployed	3	2.5	2.5	100
	Total	**120**	**100**	**100**	
Income	Less than 1 lac	100	83.3	83.3	83.3
	Between 1 to 3 lacs	17	14.2	14.2	97.5

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	More than 3 lacs	3	2.5	2.5	100
	Total	**120**	**100**	**100**	
Residing in	District	26	21.7	21.7	21.7
	Taluka	17	14.2	14.2	35.8
	Village	77	64.2	64.2	100
	Total	120	100	100	
Education	< HSC	106	88.3	88.3	88.3
	Graduate	13	10.8	10.8	99.2
	Others	1	0.8	0.8	100
	Total	**120**	**100**	**100**	
No. of Days in Hospitals	Between 2 to 5 Days	34	28.3	28.3	28.3
	Between 5 to 10 Days	71	59.2	59.2	87.5
	More than 10 Days	15	12.5	12.5	100
	Total	**120**	**100**	**100**	

It can be observed from the table that the most of the respondents i.e. 65% were male. Similarly, 61.7% of the patients were from the age group of 40 to 60 yrs. Out of the total respondents, 83.3% were having an annual income below 1lac. The patients were mostly housewives 23.3% and involved in agriculture 36.7%. Out of the total 64.2%, respondents were from nearby villages. The 88.3% of the patients had completed their education below HSC. Similarly, 59.2% patients were admitted between 5 to 10 Days.

Equality of Means

The Repeated measure ANOVA (Analysis of Variance) statistical test was carried out to test whether means of the expectation differ in at least one SERVQUAL dimensions in private hospitals. Table: III shows the mean of expectations of the SERVQUAL dimensions.

Table: III Descriptive Statistics

	Mean	Std. Deviation	N
Tangibility Expectation	5.2375	0.83631	120
Reliability Expectation	5.2483	0.91560	120
Responsiveness Expectation	6.0729	0.75898	120
Assurance Expectation	6.1729	0.55458	120
Empathy Expectation	6.5233	0.52256	120

Table: IV shows Mauchly's Test of Sphericity i.e. whether the data have violated the assumption of the sphericity.

Table IV Mauchly's Test of Sphericity

Measure:							
Within-Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
factor1	.133	236.514	9	.000	.589	.601	.250

$\chi 2$ (9) = 236.514, p = 0.000,

The Mauchly's test indicated that the significance value is less than 0.05; hence we conclude that the assumption of the sphericity is violated. Since the sphericity cannot be assumed and epsilon value is < 0.75, we use Greenhouse-Geisser

Table: V shows the Tests of Within-Subjects Effects and Greenhouse-Geisser which makes an adjustment to the degrees of freedom of the repeated measures ANOVA.

Greenhouse-Geisser F (2.355, 280.288) = 136.837, p < 0.001,

As the main ANOVA is significant, we can reject the null hypothesis and conclude that the mean of the expectations differs in at least one SERVQUAL dimensions in private hospitals.

Table: V Tests of Within-Subjects Effects

Measure:						
Source		Type III Sum of Squares	df	Mean Square	F	Sig.
factor1	Greenhouse-Geisser	161.340	2.355	68.499	136.837	.000
Error(factor1)	Greenhouse-Geisser	140.309	280.288	.501		

Similarly, repeated measure ANOVA test was carried out to test whether mean of the perceptions differ in at least one SERVQUAL dimensions in private hospitals. Table: VI shows the mean of perceptions of the dimensions.

Table: VI Descriptive Statistics

	Mean	Std. Deviation	N
Tangibility Perception	5.1354	.84509	120
Reliability Perception	5.4817	.65001	120
Responsiveness Perception	5.9708	.67378	120
Assurance Perception	5.9812	.70574	120
Empathy Perception	5.6400	.58875	120

Table: VII shows Mauchly's Test of Sphericity.

Table: VII Mauchly's Test of Sphericity

Measure:							
Within-Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
factor1	.704	41.193	9	.000	.883	.914	.250

χ^2 (9) = 41.193, p = 0.000,

The Mauchly's indicated that the significance value is less than 0.05; hence we conclude that the assumption of the sphericity is violated. Since the sphericity cannot be assumed and epsilon value is > 0.75 we use Huynh-Feldt.

Table 8 shows the Tests of Within-Subjects Effects. Since the sphericity cannot be assumed we use Huynh-Feldt which makes an adjustment to the degrees of freedom of the repeated measures ANOVA.

Huynh-Feldt F (3.533, 420.429) = 29.241, p < .001,

As the main ANOVA is significant, we can reject the null hypothesis and conclude that the mean of perceptions differs in at least one SERVQUAL dimension in private hospitals. The Table: VIII shows Tests of Within-Subjects Effects.

Table: VIII Tests of Within-Subjects Effects

Measure:						
Source		Type III Sum of Squares	df	Mean Square	F	Sig.
factor1	Greenhouse-Geisser	60.667	3.533	17.171	29.241	.000
Error(factor1)	Greenhouse-Geisser	246.890	420.429	.587		

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The Gap between expectations and perception

To achieve the third objective of the research, the paired sample t-test was carried out to analyze whether expectation and perception differ with each dimension. Table: IX shows Paired Samples Statistics.

Table: IX Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Tangibility Expectation	5.24	120.00	0.8363	0.0763
	Tangibility Perception	5.14	120.00	0.8451	0.0771
Pair 2	Reliability Expectation	5.25	120.00	0.9156	0.0836
	Reliability Perception	5.48	120.00	0.6500	0.0593
Pair 3	Responsiveness Expectation	6.07	120.00	0.7590	0.0693
	Responsiveness Perception	5.97	120.00	0.6738	0.0615
Pair 4	Assurance Expectation	6.17	120.00	0.5546	0.0506
	Assurance Perception	5.98	120.00	0.7057	0.0644
Pair 5	Empathy Expectation	6.52	120.00	0.5226	0.0477
	Empathy Perception	5.64	120.00	0.5887	0.0537
Pair 6	Expectation	5.85	120.00	0.5505	0.0503
	Perception	5.64	120.00	0.2686	0.0245

Table: X shows Paired Samples Test

Table: X Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean Difference	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Tangibility Expectation - Tangibility Perception	0.102	.46910	.04282	.01729	.18688	2.384	119	.019
Pair 2	Reliability Expectation - Reliability Perception	-0.233	1.16542	.10639	-.44399	-.02267	-2.193	119	.030
Pair 3	Responsiveness Expectation - Responsiveness Perception	0.102	.80472	.07346	-.04338	.24754	1.390	119	.167
Pair 4	Assurance Expectation - Assurance Perception	0.192	.78840	.07197	.04916	.33418	2.663	119	.009
Pair 5	Empathy Expectation - Empathy Perception	0.883	.71365	.06515	.75434	1.01233	13.559	119	.000
Pair 6	Expectation - Perception	0.210	.44308	.04045	.12908	.28926	5.171	119	.000

Table: IX provides the Paired Samples Statistics. It provides the descriptive statistics for the paired samples. Table X provides the Paired Samples Test. The values for the Paired Samples Test are **Pair 1 t (119) = 2.384, p < 0.05**

Since p-value (0.019) is less than the level of significance (0.05), hence it is concluded that expectation perception differs with respective to Tangibility in private hospitals.

From the descriptive statistics table, it can be seen that mean of expectations of tangibility is 5.24 and perception mean is 5.14, hence it can be concluded that expectations are higher compared to perception with respect to the tangibility dimension.

Pair 2 t (119) = -2.193, p < 0.05

Since p-value (0.030) is less than the level of significance (0.05). Hence it is concluded that expectation perception differs with respective to reliability.

From the descriptive statistics table, it can be seen that mean of expectations of reliability is 5.25 and perception mean is 5.48, hence it can be concluded that perception is higher compared to the expectations with respect to the reliability dimension.

Pair 3 t (119) = 1.390, p > 0.05

Since p-value (0.167) is more than the level of significance (0.05). Hence it is concluded that expectation perception does not differ with respect to Responsiveness.

Pair 4 t (119) = 2.663, p < 0.05

Since p-value (0.009) is less than the level of significance (0.05). Hence it is concluded that expectation perception differs with respective to Assurance.

From the descriptive statistics table it can be seen that the mean of expectations of assurance is 6.17 and perception mean is 5.98, hence it can be concluded that expectations are higher compared to perception with respect to the assurance dimension.

Pair 5 t (119) = 13.559, p < 0.05

Since p-value (0.000) is less than the level of significance (0.05). Hence it is concluded that expectation perception differs with respective to Empathy.

From the descriptive statistics table, it can be seen that mean of expectations of empathy is 6.52 and perception mean is 5.64, hence it can be concluded that expectations are higher compared to perception with respect to the empathy dimension.

Pair 6 t (119) = 5.171, p < 0.05

Since p-value (0.000) is less than the level of significance (0.05). Hence it is concluded that expectation perception differs with respect to overall means of expectations and perceptions.

From the descriptive statistics table it can be seen that the overall mean of expectations is 5.85 and the perception mean is 5.64, hence it can be concluded that the expectations are higher compared to the perception with respect to the overall expectations and perceptions.

VI. CONCLUSION

The research studied the level of satisfaction of the patients from the selected private hospitals. The private hospitals are doing better in terms of the reliability dimension. The patients are satisfied with the services like promised to do something by a certain time, sincere interest in solving problems, performing services right the first time, provide their services at the time they promise to do so and keeping error-free records.

Patients perceived that the efforts are not made to deliver better service quality in terms of the empathy dimension which plays a vital role in patient's satisfaction. The expectations are more with respect to individual attention, convenient operating hours, concerning about patient's interests at heart and understanding the specific needs of patients. We can conclude that empathy is turned out to be the weakest dimension with the highest gap between expectations and perception. Patients are expecting better infrastructure and appealing facilities. The private hospitals are not able to provide assurance at the expected level. They are lacking to instill confidence and answering patient's questions. Though all dimensions of health services provided by hospitals are highly positive but less than what the patients expected, except for the reliability dimension. Based on the various mean of expectations and perception, patients give varied importance to all the dimensions.

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