# SERVICE QUALITY AND PATIENTS' SATISFACTION TOWARDS CORPORATE HOSPITALS - A STUDY IN ERODE CITY

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#### ABSTRACT

The healthcare industry in recent years has restructured its service delivery system in order to provide service in an forgiving environment resulting from maturation of the industry reduced funding and increased competition. Consumer satisfaction is a basic requirement for health care provider because, the satisfaction related to quality of healthcare is provided by hospitals. Satisfaction is important when patients themselves and institutional healthcare service buyer make selection decisions. T he main objective of this study is to examine the quality of healthcare services delivered by the hospitals to gain patient satisfaction in erode city. For this purpose SERVQUAL instrument was used to examine the Correlation analysis between demographic variables and satisfaction towards perceived service quality dimension and multiple regression analysis between the various dimensions SERVQUAL model. The primary data collected from 500 respondents by using structured questionnaire.

#### Keywords: Health care, service quality, patients satisfaction, correlation and regression analysis.

#### I. INTRODUCTION

The healthcare industry in recent years has restructured its service delivery system in order to provide service in an forgiving environment resulting from maturation of the industry reduced funding and increased competition. Consumer satisfaction is a basic requirement for health care provider because, the satisfaction related to quality of healthcare is provided by hospitals. Satisfaction is important when patients themselves and institutional healthcare service buyer make selection decisions.

Since, services are intangibles, heterogeneous and inseparable, it is difficult to measure service quality objectively. Over the years, many researchers have proposed and evaluated alternative service quality model instruments for measuring service quality. Among these models SERVQUAL is the most prominent and the most widely used. The SERVQUAL model consists of five determinants of service quality i.e Tangible, Reliability, Responsiveness Empathy and Assurance.

# **II. REVIEW OF LITERATURE**

Lim and Tang (2000)<sup>9</sup> examined "Patients' expectations and perceptions about hospital service quality in Singapore". In the beginning, the survey instrument was designed with five dimensions of the SERVQUAL model. The instrument consisted of 25 questions having 5 point Likert scale. In this study another dimension "accessibility

and affordability" was added to the questionnaire in the form of three additional questions that were different from original SERVQUAL model. This additional dimension would also be included as the part of the present study. In addition to this, the questionnaire also had a question on "overall importance" in the expectation section and another question "overall rating of service quality" in the perception section. 252 satisfactorily filled questionnaires out of 300 were collected from four general practitioners and two specialist clinics. The question related to the overall rating of service quality is also included in the present study. SERVQUAL score was calculated by using mean and standard deviation.

In their study on "Comparing public and private hospital care service quality," **David Camilleri and Mark O'Chllaghan (1998)**<sup>7</sup> attempted to compare the two hospitals viz, private and public by using 16 service quality indicators. Two questionnaire was used to measure the patient pre-admission expectation for public and private hospital service quality. On the other hand, the second questionnaire was used to measure patient perceptions of provided service quality. The result of the study showed that 60% of respondents were satisfied with the service provided by the private hospital and 54% of sample were satisfied with the service provided by the public hospital.

#### **III.OBJECTIVES**

The main objective is to study the patients' satisfaction towards medical care in the hospitals in Erode city.

#### **IV.METHODOLOGY**

#### Sample Design

Convenience sampling has been used in the study

#### **Selection of District**

Erode district has been selected for convenience.

#### **Selection of Hospitals**

Corporate hospitals such as KMCH (Kovai medical centre) LOTUS Hospital MMCH (Maruthi medical centre hospital has been selected for the study.

#### V. DATA SOURCE

In order to study the service quality of hospitals in Erode city, a structured questionnaire was used as an instrument to collect the data. In this study the questionnaire has been personally administered size 500 in-patients chosen on the convenient basis from Erode city in this study SERVQUAL Method were used to determine the service quality and patients' satisfaction towards medical care in the hospitals in Erode city. Descriptive Statistics And Pearson Correlation Among The Variables, Correlation Between Demographic Variables And Satisfaction Towards various dimensions Services, Factors Contributing To Satisfaction On Various Dimension Services – Multiple Regression Analysis were determine in this study.

#### VI. PERIOD OF STUDY

The period taken for the study is one year ie.2013-2014.

#### VII. RESULTS AND DISCUSSION

#### TABLE 1 DESCRIPTIVE STATISTICS AND PEARSON CORRELATION AMONG THE VARIABLES

Variables	Mean	SD	Tangible	Reliability	Responsiveness	Empathy	Assurance
Tangible	0.183	0.150	1.000	0.292**	0.229**	0.308**	0.301**
Reliability	0.175	0.201		1.000	0.276**	0.360**	0.225**
Responsiveness	0.891	0.589			1.000	0.631**	0.309**
Empathy	0.573	0.365				1.000	0.339**
Assurance	0.245	0.178					1.000

\*\* - Significant at 1% level

The result indicated a positive relationship among all the variables and the relationship was found to be significant for tangible, reliability, responsiveness, empathy and assurance. This shows that all the variables were independent though related with each other.

# TABLE 2CORRELATION BETWEEN DEMOGRAPHIC VARIABLES AND SATISFACTION<br/>TOWARDS TANGIBLE SERVICES

No.	Variables	'r' Value	'p' Value
1	Age	0.153	0.001**
2	Gender	-0.026	0.563 <sup>NS</sup>
3	Education	0.184	0.000**
4	Occupation	-0.178	0.000**
5	Annual Family Income	-0.149	0.001**
6	Residential Area	0.275	0.000**
7	Name of the Hospital	-0.306	0.000**
8	Number of times visited to the hospital	0.055	0.218 <sup>NS</sup>
9	Number of times stayed in the hospital	-0.103	0.021*
10	Length of stay	0.105	0.019*
11	Type of treatment	-0.010	0.829 <sup>NS</sup>

\*\*- Significant at 1% level; \*- Significant at 5% level; NS - Not Significant

The correlation co-efficients are found to be significant in respect of demographic variables such as age, education, occupation, annual family income, residential area, name of the hospital, number of times stayed in the hospital and length of stay at 1 percent and 5 percent level. It is not significant with respect to gender, number of times visited to the hospital, type of treatment towards tangible services. Therefore it can be concluded that the patients in the hospital are fully satisfied with services except three demographic variables.

TABLE 3
CORRELATION BETWEEN DEMOGRAPHIC VARIABLES AND SATISFACTION
TOWARDS RELIABILITY SERVICES

Variables	'r' Value	'p' Value
Age	0.025	0.576 <sup>NS</sup>
Gender	0.039	0.387 <sup>NS</sup>
Education	0.031	0.485 <sup>NS</sup>
Occupation	-0.115	0.010*
Annual Family Income	0.032	$0.480^{ m NS}$
Residential Area	0.093	0.038*
Name of the Hospital	-0.246	0.000**
Number of times visited to the hospital	0.137	0.002**
Number of times stayed in the hospital	0.030	0.505 <sup>NS</sup>
Length of stay	0.030	0.510 <sup>NS</sup>
Type of treatment	-0.038	0.392 <sup>NS</sup>
	VariablesAgeGenderEducationOccupationAnnual Family IncomeResidential AreaName of the HospitalNumber of times visited to the hospitalNumber of times stayed in the hospitalLength of stayType of treatment	Variables'r' ValueAge0.025Gender0.039Education0.031Occupation-0.115Annual Family Income0.032Residential Area0.093Name of the Hospital-0.246Number of times visited to the hospital0.137Number of times stayed in the hospital0.030Length of stay0.030Type of treatment-0.038

\*\* - Significant at 1% level; \* - Significant at 5% level; NS – Not Significant

The correlation co-efficients are found to be significant to respect of variables such as occupation, residential area, name of the hospital and number of times visited to the hospital where as, not significant with respect to age, gender, education, annual family income, number of times stayed in the hospital, length of stay and type of treatment with satisfaction towards reliability services. Therefore it can be concluded that four variables such as occupation, residential area, name of the hospital and number of times visited to the hospital are fully satisfied with reliability services but others are not satisfied.

#### TABLE 4 CORRELATION BETWEEN DEMOGRAPHIC VARIABLES AND SATISFACTION TOWARDS RESPONSIVENESS SERVICES

No.	Variables	'r' Value	'p' Value
1	Age	0.045	0.320 <sup>NS</sup>
2	Gender	-0.013	0.766 <sup>NS</sup>
3	Education	-0.030	0.506 <sup>NS</sup>
4	Occupation	-0.032	0.481 <sup>NS</sup>
5	Annual Family Income	-0.044	0.331 <sup>NS</sup>
6	Residential Area	0.017	0.712 <sup>NS</sup>
7	Name of the Hospital	-0.198	0.000**
8	Number of times visited to the hospital	0.059	0.188 <sup>NS</sup>
9	Number of times stayed in the hospital	0.017	0.704 <sup>NS</sup>
10	Length of stay	-0.041	0.360 <sup>NS</sup>
11	Type of treatment	-0.068	0.132 <sup>NS</sup>

\*\* - Significant at 1% level; \* - Significant at 5% level; NS - Not Significant

The correlation co-efficients are found to be insignificant to respect of variables such as age, gender, education, annual family income, occupation, residential area, number of times visited to the hospital, number of times stayed in the hospital, length of stay and type of treatment where as, significant with respect to name of the hospital and satisfaction towards responsiveness services.

TABLE 5
CORRELATION BETWEEN DEMOGRAPHIC VARIABLES AND SATISFACTION
TOWARDS EMPATHY SERVICES

No.	Variables	'r' Value	'p' Value
1	Age	0.015	0.743 <sup>NS</sup>
2	Gender	0.045	0.316 <sup>NS</sup>
3	Education	-0.015	0.746 <sup>NS</sup>
4	Occupation	-0.058	0.196 <sup>NS</sup>
5	Annual Family Income	-0.025	0.580 <sup>NS</sup>
6	Residential Area	0.022	0.616 <sup>NS</sup>
7	Name of the Hospital	-0.219	0.000**
8	Number of times visited to the hospital	0.023	0.602 <sup>NS</sup>
9	Number of times stayed in the hospital	0.008	0.860 <sup>NS</sup>
10	Length of stay	-0.063	0.161 <sup>NS</sup>
11	Type of treatment	-0.045	0.320 <sup>NS</sup>

\*\*- Significant at 1% level; \*- Significant at 5% level; NS – Not Significant

The correlation co-efficients are found to be insignificant to respect of variables such as age, gender, education, annual family income, occupation, residential area, number of times visited to the hospital, number of times stayed in the hospital, length of stay and type of treatment where as, significant with respect to name of the hospital and satisfaction towards empathy services.

#### TABLE 6 CORRELATION BETWEEN DEMOGRAPHIC VARIABLES AND SATISFACTION TOWARDS ASSURANCE SERVICES

No.	Variables	'r' Value	ʻp' Value
1	Age	-0.010	0.826 <sup>NS</sup>
2	Gender	-0.024	0.592 <sup>NS</sup>
3	Education	0.043	0.342 <sup>NS</sup>
4	Occupation	-0.042	0.349 <sup>NS</sup>
5	Annual Family Income	-0.072	0.108 <sup>NS</sup>
6	Residential Area	0.123**	0.006**
7	Name of the Hospital	-0.133**	0.003**
8	Number of times visited to the hospital	0.042	$0.347^{NS}$
9	Number of times stayed in the hospital	0.201**	0.000**
10	Length of stay	0.049	0.270 <sup>NS</sup>
11	Type of treatment	-0.046	0.300 <sup>NS</sup>

\*\* - Significant at 1% level; \* - Significant at 5% level; NS – Not Significant

The correlation co-efficients are found to be insignificant with respect of variables such as age, gender, education, annual family income, occupation, number of times visited to the hospital, length of stay and type of treatment where as, significant with respect of name of the hospital, residential area, number of times stayed in the hospital and satisfaction towards assurance services.

# TABLE 7

# FACTORS CONTRIBUTING TO SATISFACTION TOWARDS TANGIBLE SERVICES – MULTIPLE REGRESSION ANALYSIS

Constant) ge dender ducation ccupation	0.192 0.000 -0.023 0.005 -0.009	0.007 0.014 0.006	value -0.007 -1.596 0.786	0.994 <sup>NS</sup> 0.111 <sup>NS</sup> 0.422 <sup>NS</sup>
Constant) ge dender ducation vecupation	0.192 0.000 -0.023 0.005 -0.009	0.007 0.014 0.006	-0.007 -1.596 0.786	0.994 <sup>NS</sup> 0.111 <sup>NS</sup>
ge ender ducation ccupation	0.000 -0.023 0.005 -0.009	0.007 0.014 0.006	-0.007 -1.596 0.786	0.994 <sup>NS</sup> 0.111 <sup>NS</sup>
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ducation occupation	0.005	0.006	0.786	0.422 NS
ccupation	-0.009			0.452
	0.009	0.005	-1.598	0.111 <sup>NS</sup>
nnual Family Income	-0.007	0.005	-1.340	0.181 <sup>NS</sup>
esidential Area	0.061	0.016	3.708	0.000**
ame of the Hospital	-0.062	0.008	-7.366	0.000**
umber of times visited to the hospital	0.015	0.009	1.695	0.091 <sup>NS</sup>
umber of times stayed in the hospital	0.003	0.007	0.490	0.625 <sup>NS</sup>
ength of stay	0.023	0.007	3.090	0.002**
ype of treatment	0.011	0.006	1.748	0.081 <sup>NS</sup>
Value	0.948			
<sup>2</sup> Value	0.898			
Value	112.16**			
	inual Family Income sidential Area ime of the Hospital imber of times visited to the hospital imber of times stayed in the hospital ngth of stay pe of treatment Value Value	ccupation-0.009mual Family Income-0.007esidential Area0.061ume of the Hospital-0.062umber of times visited to the hospital0.015umber of times stayed in the hospital0.003ngth of stay0.023upe of treatment0.011Value0.898Value112.16**	ccupation         -0.009         0.005           mual Family Income         -0.007         0.005           esidential Area         0.061         0.016           ume of the Hospital         -0.062         0.008           umber of times visited to the hospital         0.015         0.009           umber of times stayed in the hospital         0.003         0.007           ngth of stay         0.023         0.007           pe of treatment         0.011         0.006           Value         0.898         Value           Value         112.16**	ccupation         -0.009         0.005         -1.598           mual Family Income         -0.007         0.005         -1.340           esidential Area         0.061         0.016         3.708           ume of the Hospital         -0.062         0.008         -7.366           umber of times visited to the hospital         0.015         0.009         1.695           umber of times stayed in the hospital         0.003         0.007         0.490           ngth of stay         0.023         0.007         3.090           pe of treatment         0.011         0.006         1.748           Value         0.898         Value         Value           Value         112.16**         Value         Value

\*\* - Significant at 1% level,\*- Significant at 5% level; NS - Not Significant

The multiple linear co-efficient of tangible service (dependent variable) is found to be statistically good fit as R<sup>2</sup>0.898. It shows that independent variables contribute about 89.8 percent of the variables to the level of satisfaction by the sample respondents and this is statistically significant at 1 percent and 5 percent levels.

# TABLE 8FACTORS CONTRIBUTING TO SATISFACTION ON RELIABILITY SERVICES –<br/>MULTIPLE REGRESSION ANALYSIS

No.	Variables	Coefficient	SE	't' value	P value
	(Constant)	0.195			
1	Age	-0.014	0.010	-1.394	0.164 <sup>NS</sup>
2	Gender	-0.008	0.020	-0.390	0.697 <sup>NS</sup>
3	Education	-0.001	0.009	-0.101	0.920 <sup>NS</sup>
4	Occupation	-0.013	0.008	-1.703	0.089 <sup>NS</sup>
5	Annual Family Income	0.008	0.007	1.085	0.279 <sup>NS</sup>
6	Residential Area	0.041	0.023	1.772	$0.077^{NS}$
7	Name of the Hospital	-0.075	0.012	-6.330	0.000**
8	Number of times visited to the hospital	0.037	0.012	3.002	0.003**
9	Number of times stayed in the hospital	0.028	0.010	2.794	0.005**
10	Length of stay	0.016	0.010	1.573	0.116 <sup>NS</sup>
11	Type of treatment	-0.002	0.009	-0.240	0.811 <sup>NS</sup>
	R Value	0.971			
	R <sup>2</sup> Value	0.942			
	<b>F</b> Value	512.889**			

\*\* - Significant at 1% level, \*- Significant at 5% level; NS– Not Significant

The multiple linear co-efficient of reliability service (dependent variable) is found to be statistically good fit as  $R^2 = 0.942$ . It shows that independent variables contribute about 94.2 percent of the variables to the level of satisfaction by the sample respondents and this is statistically significant at 1 percent level.

# TABLE 9

# FACTORS CONTRIBUTING TO SATISFACTION ON RESPONSIVENESS SERVICES – MULTIPLE REGRESSION ANALYSIS

No.	Variables	Coefficient	SE	't' value	P value
	(Constant)	1.348			
1	Age	0.006	0.029	0.191	0.848 <sup>NS</sup>
2	Gender	-0.023	0.061	-0.372	0.710 <sup>NS</sup>
3	Education	-0.030	0.027	-1.098	0.273 <sup>NS</sup>
4	Occupation	-0.010	0.023	-0.445	0.656 <sup>NS</sup>
5	Annual Family Income	-0.038	0.022	-1.715	$0.087^{NS}$
6	Residential Area	-0.016	0.070	-0.234	0.815 <sup>NS</sup>
7	Name of the Hospital	-0.169	0.036	-4.725	0.000**
8	Number of times visited to the hospital	0.052	0.038	1.373	0.170 <sup>NS</sup>
9	Number of times stayed in the hospital	0.062	0.030	2.081	0.038*
10	Length of stay	-0.005	0.031	-0.160	0.873 <sup>NS</sup>
11	Type of treatment	-0.030	0.027	-1.103	0.270 <sup>NS</sup>
	R Value	0.962			
	R <sup>2</sup> Value	0.925			
	F Value	29.423**			

\*\* - Significant at 1% level, \*- Significant at 5% level; NS - Not Significant

The multiple linear co-efficient of responsiveness service (dependent variable) is found to be statistically good fit as  $R^2 = 0.925$ . It shows that independent variables contribute about 92.5 percent of the variables in the level of satisfaction by the sample respondents and this is statistically significant at 1 percent and 5 percent levels.

# TABLE 10 FACTORS CONTRIBUTING TO SATISFACTION TOWARDS EMPATHY SERVICES – MULTIPLE REGRESSION ANALYSIS

No.	Variables	Coefficient	SE	't' value	P value
	(Constant)	0.863			
1	Age	-0.011	0.018	-0.584	0.560 <sup>NS</sup>
2	Gender	0.017	0.038	0.442	0.658 <sup>NS</sup>
3	Education	-0.010	0.017	-0.603	0.547 <sup>NS</sup>
4	Occupation	-0.011	0.014	-0.796	0.426 <sup>NS</sup>
5	Annual Family Income	-0.015	0.014	-1.140	0.255 <sup>NS</sup>
6	Residential Area	-0.001	0.043	-0.032	0.975 <sup>NS</sup>
7	Name of the Hospital	-0.113	0.022	-5.104	0.000**
8	Number of times visited to the hospital	0.012	0.023	0.509	0.611 <sup>NS</sup>
9	Number of times stayed in the hospital	0.038	0.018	2.041	0.042*
10	Length of stay	-0.010	0.019	-0.538	0.590 <sup>NS</sup>
11	Type of treatment	-0.014	0.017	-0.828	0.408 <sup>NS</sup>
	R Value	0.965			
	R <sup>2</sup> Value	0.931			
	F Value	32.079**			

\*\* - Significant at 1% level, \*- Significant at 5% level; NS – Not Significant

The multiple linear co-efficient of empathy service (dependent variable) is found to be statistically good fit as  $R^2 = 0.931$ . It shows that independent variable contribute about 93.1 percent of the variable in the level of satisfaction by the sample respondents and this is statistically significant at 1 percent and 5 percent levels.

#### TABLE 11 FACTORS CONTRIBUTING TO SATISFACTION ON ASSURANCE SERVICES – MULTIPLE REGRESSION ANALYSIS

No.	Variables	Coefficient	SE	't' value	P value
	(Constant)	0.243			
1	Age	-0.013	0.009	-1.551	0.122 <sup>NS</sup>
2	Gender	-0.014	0.018	-0.786	0.432 <sup>NS</sup>
3	Education	0.004	0.008	0.442	0.659 <sup>NS</sup>
4	Occupation	-0.002	0.007	-0.345	0.731 <sup>NS</sup>
5	Annual Family Income	-0.007	0.006	-1.086	0.278 <sup>NS</sup>
6	Residential Area	0.032	0.020	1.587	0.113 <sup>NS</sup>
7	Name of the Hospital	-0.058	0.010	-5.553	0.000**
8	Number of times visited to the hospital	0.009	0.011	0.851	0.395 <sup>NS</sup>
9	Number of times stayed in the hospital	0.055	0.009	6.334	0.000**
10	Length of stay	0.017	0.009	1.857	0.064 <sup>NS</sup>
11	Type of treatment	-0.006	0.008	-0.704	0.482 <sup>NS</sup>
	R Value	0.911			
	R <sup>2</sup> Value	0.829			
	F Value	51.996**			

\*\* - Significant at 1% level, \*- Significant at 5% level; NS – Not Significant

The multiple linear co-efficient of assurance service (dependent variable) is found to be statistically good fit as  $R^2 = 0.829$ . It shows that independent variable contribute about 82.9 percent of the variable in the level of satisfaction by the sample respondents and this is statistically significant at 1 percent level.

# **VIII. FINDINGS**

#### **Correlation Analysis Results**

- The correlation co-efficients are found to be significant with respect of demographic variables such as age, education, occupation, annual family income, residential area, name of the hospital, number of times stayed and length of stay and satisfaction towards tangible services.
- The correlation co-efficients are found to be significant with respect of demographic variables such as occupation, residential area, name of the hospital and number of times visited to the hospital and satisfaction towards reliability services.
- Correlation co-efficients are found to be significant with respect of name of the hospital and satisfaction towards responsiveness and empathy services.
- Correlation co-efficients are found to be significant with respect of name of the hospitals, residential area, number of times stayed in the hospital and satisfaction towards assurance services.

#### **Multiple Regression Analysis Results**

Factors contributing with satisfaction towards various dimension were given below :

The result of multiple regression analysis shows that the variables such as residential area, name of the hospital and length of stay were significant at 5 percent level towards tangible dimension services.

- Hospital related variables such as name of the hospital, number of times visited to the hospital and number of times stayed in the hospital were significant at 1 percent level towards reliability dimension services.
- Variables such as name of the hospital and number of times stayed in the hospital were significant at 1 percent and 5 percent level respectively towards responsiveness, empathy and assurance dimension services.

#### IX. CONCLUSION AND SUGGESTIONS

The findings have important implications for three corporate hospitals owners, managers, government officials, academics and other related parties in the hospital services in Erode city.

The service quality of the selected hospitals - KMCH, Lotus and MMCH has been measured in five dimensions, namely tangible, reliability, responsiveness, empathy and assurance. The expectation of patients is greater towards responsiveness services. The loyalty of patients is greater towards Lotus hospital than the other two hospitals.

#### X. REFERENCE

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