PATIENTS' EXPECTATIONS AND PERCEPTIONS IN HOSPITALS: A COMPARATIVE STUDY

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Abstract

In today's highly competitive healthcare environment, service quality and patient satisfaction have become critical for any healthcare organisation seeking to carve out a competitive advantage**.** This is because in a competitive environment, as the race to compete intensifies, business firms discover their offerings becoming dangerously similar to one another. Under such circumstances patient's decision to patronize one and not the other is based on quality service offered to him. Patient-based determinants and perceptions of service quality, therefore, play an important role when choosing a hospital. This paper attempted to determine the expectations and perceptions of patients of four hospitals in J&K State and Chandigarh (Punjab) through the use of a self developed and statistically tested research instrument. Based on data gathered from five hundred twenty (520) patients, the study concludes that there is an overall service quality gap between patients' expectations and perceptions and suggests improvements across all the six dimensions particularly on Nursing Care and Treatment Results to improve the overall quality of medical services.

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Introduction

The medical related sector, particularly hospitals, is one of the major parts of the service industry. However, it distinguishes itself from other industries by its dealings with human life and health. As such, the issue of health-care quality management has always drawn considerable attention from both academicians and practitioners. The enhanced focus on customer satisfaction in today's competitive environment (Anderson and Sullivan, 1993; Bearden and Teal, 1983; Churchill and Suprenant, 1982; Spreng, et. al., 1996) appears to have led to widespread attention for patient satisfaction in healthcare literature (Cronin and Taylor, 1994). In view of this, service quality and patient satisfaction have become critical for any healthcare organisation seeking to carve out a competitive advantage (Collier, 1991; Taylor, 1994). To gain patient's confidence, hospitals are concentrating on better medical services and have gradually implemented many approaches, including reducing medical mistakes and improving administrative efficiency, quality circles, total quality management, business process re-engineering and benchmarking.

The health care service product is a unique combination of tangible and intangible benefits that should be flexible to the needs of the patients (Lytle and Mokwa, 1992). The consumer will be satisfied if the service quality confirms to their needs and requirements (Lytle and Mokwa, 1992 and Parasuraman, et al., 1988). Greater the service conformance to the requirements of the consumers, the better will be the service quality and consequently greater will be the patient satisfaction (Berry, et al., 1988; Parasuraman, et.al., 1988). In India, many academicians and practitioners have highlighted the need for better service quality in hospitals, mostly public sector hospitals, and offered guidelines for improvement in hospital services (Bhat, 1990; Buch, 1993; Mukhopadhayay, 1993; Prakash, 1993; Ramesh, 1993). These studies have also alarmed public sector hospitals that if the present trend of patient dissatisfaction continues unabated, they would loose their valuable patients to their competitors' especially private hospitals. Therefore, excellent service quality is not an optional competitive strategy which may or may not be adopted to differentiate one service provider from the other, but it becomes essential to corporate profitability and survival (Berry and Parasuraman, 1997; Bhat and Joo, 2005; Bhat and Gani, 2003; Muller, 1991; Smith, 2000).

Several studies have proposed that significant variation exists between patient expectation of treatment quality and the perceived service quality of the treatment received, and

that this is due to a number of factors related to the service quality of the treatment delivered (Butler, et al., 1996; Kandampully, 1997; Strasser, et al., 1995). Despite the consensus that patient satisfaction in services is important for quality assurance in medical services and hospitals (Laslett, 1994), there is a dearth of empirical information on consumers' acceptance of health care practices. Given the rapid changes in the healthcare environment, increased competitiveness, and an increasing awareness of patients for customer satisfaction, the present study will provide valuable insights regarding quality of medical services for hospital administration. The study, therefore, attempts to achieve the following objectives: -

- To study the expectations and perceptions of patients regarding quality of medical service in hospitals, under study.
- To suggest, on the basis of study results, ways and means of improving medical services in hospitals with a view to make the overall quality of medical services more effective and efficient.

Literature Review

Service Quality

The most recent trend in many service organisations is to consider quality service as a critical factor in enabling them to achieve a differential advantage over their competitors (Albrecht and Zemke, 1985; Berry, et al., 1989; Leonard and Sasser, 1982; Ross and Shetty, 1985). Increasingly, quality is becoming a key variable in strategic planning. However, unlike manufactured goods quality, hospital service quality is an elusive and distinctive construct. It is defined as, "the ability to satisfy the needs and expectations of the customer (Bergman and Klefsjo, 1994) or "the totality of features and characteristics of a product or service that bear on its ability to satisfy given needs" (Evans and Lindsay, 1996). As consumers do not easily articulate hospital's service quality, the recipient of the service can only really assess it, thereby making its measurement more subjective than exact. Hence, the measurement of hospitals' service quality has to be based on perceived quality rather than objective quality because services are intangible, heterogeneous and their production and consumption occurs simultaneously (Buttle, 1996; Berry and Parasuraman, 1991; Zeithaml et al., 1990). However, Lewis and Booms (1983) and Webster (1989) believed service quality to be a measure of how well the service level

matches customers' expectations, or "providing the customer with what he wants, when he wants it, and at acceptable cost, within the operating constraints of the business" (Lewis, 1991), and "providing a better service than the customer expects" (Lewis, 1988). A number of researchers refer to the importance of the clients'/ customers' perceptions of quality (Takeuchi and Quelch, 1983) which are consumers' attitudes or judgements resulting from comparison by consumers of expectations of service with their perceptions of actual service performance (Berry, et.al. 1985; 1988; Gronroos, 1984; Lewis and Booms, 1983). Parasuraman, et.al. (1985) found that consumers' perceptions of quality are influenced by various gaps which lead to service quality shortfalls and, in particular, the "quality perceived in a service is a function of the gap between customer's desires/expectations and their perceptions of the service that is actually received," i.e., service quality is a measure of how well the service delivered meets the expectations of service.

The quality of service – both technical and functional – is a key ingredient in the success of service organizations (Gronroos, 1984). Technical quality in healthcare is defined primarily on the basis of the technical accuracy of the diagnosis and procedures. Several techniques for measuring technical quality have been proposed and are currently in use in healthcare organizations. Information relating to this is not generally available to the public, and remains within the purview of healthcare professionals and administrators (Bopp, 1990). Functional quality, in contrast, relates to the manner of delivery of healthcare services.

To sum up, because patients are often unable to assess the technical quality of medical services accurately, functional quality is usually the primary determinant of patients' perceptions of quality (Donabedian, 1980, 1982). There is a growing evidence to suggest that this perceived quality is the single most important variable influencing consumers' perceptions of value, and this, in turn, affects their intention to purchase products or services (Bolton and Drew, 1991; Zeithaml, 1998).

Sample Profile

The study seeks to analyse the expectations and perceptions of patients regarding quality of medical service in hospitals in Jammu and Kashmir State and Chandigarh (Punjab). However, the study was confined to urban areas only keeping in view the concentration of hospitals, which

is relatively high, in these areas as well as the paucity of time and financial resources of the researchers. The study is further limited to four major hospitals, namely Shri Maharaja Hari Singh Hospital (SMHS) in Srinagar, Shri Maharaja Gulab Singh Hospital (SMGS) in Jammu, Shri Achariya Chandra Medical College and Hospital (SACMH) in Jammu and FORTIS in Chandigarh. These Hospitals have been purposely selected for the present study keeping in view that they are the largest teaching hospitals in respective States. Also in terms of employee and bed strength, these hospitals stand at the top.

The size of the sample consisted of five hundred twenty respondents. This represents two hundred eighty from public sector hospitals (54%) and two hundred forty from private hospitals (46%). In order to seek balanced opinion regarding quality of medical services, respondents bearing varied demographic characteristics such as age, income, education, gender and profession were selected from different wards (in-patient) and from different out-patient departments. Stratified random sampling for both in-patients and out-patients was followed. Before approaching a respondent, the importance of medical service for both the receiver and the service provider used to be discussed first.

Table 1: Demographic Profile of Respondents

Demographic Characteristics		Hospitals				Percent (%)
		SMHS	SMGS	SACMH	FORTIS	
Age in years	20—35	60	48	39	35	35
	35—50	49	60	55	39	39
	Above 50	31	32	26	46	26
	Total	**140**	**140**	**120**	**120**	**100**
Gender	Male	83	91	78	76	63
	Female	57	49	42	44	37
	Total	**140**	**140**	**120**	**120**	**100**
Level of education	Up to secondary level	53	72	62	31	42
	Graduation	49	57	48	49	39
	Post Graduation	38	11	10	40	19
	Total	**140**	**140**	**120**	**120**	**100**
Level of income per month (Rs.)	Up to 10,000	68	58	50	23	38
	10,000-20,000	56	55	47	48	40
	20,000-30,000	15	15	15	25	13
	Above 30,000	01	12	08	24	09
	Total	**140**	**140**	**120**	**120**	**100**
Profession	Business	44	59	53	36	37
	Service	96	81	67	84	63
	Total	**140**	**140**	**120**	**120**	**100**
Types of patients	In-patients	70	70	60	60	50

	Out-patients	70	70	60	60	50
	Total	**140**	**140**	**120**	**120**	**100**

Majority of the respondents (39%) belonged to the age group of thirty-five to fifty followed by the age group of twenty to thirty-five (35%) while as the remaining (26%) were in the age group of above fifty. Male respondents were 63%. Respondents who had obtained secondary level education were the highest participants (42%) followed by the graduates (39%) and post-graduates (19%). Mass participants (40%) were in the income group of ten to twenty thousand rupees per month followed by the income group of up to ten thousand rupees (38%) and twenty to thirty thousand (13%) and the remaining (9%) belonged to higher income group of above thirty thousand rupees per month. Service group respondents were highest participants (63%) followed by business group respondents. An equal number (50%) of respondents (in-patients and out-patients) of all the hospitals, under reference, participated in the present study.

Development of Questionnaire and Data Collection

The study is based on the primary data collected from the patients (both in-patients and out-patients) through a well structured questionnaire designed and developed after consultations and discussions on the aforesaid research problem with the panel of patients, medical experts/administrators and academicians and after reviewing the relevant literature. Initially, the questionnaire consisted of sixty statements. After conducting pilot survey, four statements were dropped as patients were not able to understand them. Respondents were asked to give their feeling on a five point (Likert scale) strongly disagree/agree scale where one was strongly disagree and five strongly agree. The data collected from respondents was reduced and purified with the help of Cronbach Alpha Test. In this way questionnaire got finalized after passing through various stages of refinements.

Reliability and validity

A composite score for the questionnaire was obtained by summing the scores of individual statements. Reliability tests were run to determine how strongly the attributes were related to each other and to the composite score.

The internal consistency reliability test is deemed to be acceptable for basic research when the reliability coefficient exceeds Nunnally's reliability criterion of 0.70 level (Nunnally, 1978). The present generated scale indicated the score of 0.96 which is an acceptable reliability

coefficient. The Cronbach's alpha was also performed on each factor/dimension and all the six factors/dimensions scored more than the suggested cut-off value of 0.70, revealing an acceptable level of reliability (Table: 1). The dimensions finally selected have been given exploratory headings. Thus out of fifty-six (56) statements, forty-eight (48) statements got grouped under six factors, viz., Nursing Care (14.57% VE), Cleanliness and Comfort (13.44% VE), Physician Care (13.23% VE), Treatment Results (11.19% VE), Registration and Admission (9.40% VE) and Food Services (9.29 %VE).

Table: 1 Mean Scores, Standard Deviation, Cronbach Alpha Reliability Coefficient Scores and Variance Explained for Medical Services Dimensions

S.No.	Dimensions of Medical Services	Mean Scores	Standard Deviation	Alpha Reliability Coefficients	Variance Explained (%)
1	Nursing Care	4.36	0.88	0.96	14.57
2	Cleanliness and Comfort	4.03	0.90	0.95	13.44
3	Physician Care	4.11	0.71	0.92	13.23
4	Treatment Results	3.96	0.76	0.92	11.19
5	Registration and Admission	3.74	0.83	0.93	9.40
6	Food Services	4.19	0.78	0.91	9.29
Total		**4.06**	**0.81**	**0.96**	**71.13**

Results and Discussion

In line with the objective of the study the main area of questioning and analysis concerned patient expectations and perceptions in relation to quality of medical services and its dimensions: nursing care, cleanness comfort, physician care, treatment results, registration and admission, and food services. As already stated, expectations and perceptions were measured on a five point strongly disagree/strongly agree scale. Mean scores of patient expectations and perceptions were calculated separately for all the hospitals, under reference, followed by a T. Test to determine the level of significant difference. The results obtained from such an analysis are presented on Tables 2-9.

Overall Quality of Medical Service: Patient Expectations and Perceptions

The analysis of data on Table 2 clearly reveals that all the hospitals, under reference, in the sample organization show significant mean differences in patient expectations and perceptions ($p<0.01$). However, it brings to light that FORTIS is the only hospital in the sample organisation that exceeds the expectations of its patients in providing quality medical services (-6.06). This noticeably shows that remaining three hospitals, SMHS (15.99), SMGS (8.19) and SACMH (6.30) are relatively poor in their medical services. However, SACMH followed by SMGS hospitals with low mean difference of 6.30 and 8.19 respectively are close to the expectations of their patients in comparison to SMHS hospital (15.99), i.e. their service quality is better in comparison to SMHS hospital.

Table: 2 Over-all Quality of Medical Services in Hospitals: Patient's Expectations and Perceptions

Hospitals	Expectations	Perceptions	Mean Difference	Standard Deviation		T. value
				Expectation	Perception	
SMHS	184.52	168.53	15.99	17.16	13.32	5.44**
SMGS	177.83	169.64	8.19	16.54	11.55	3.85**
SACMH	203.00	196.70	6.30	11.82	12.37	3.00**
FORTIS	193.86	199.92	-6.06	22.52	11.29	-2.82**

Note: - df for each public hospital and each private hospital is 139 & 119 respectively; **P< 0.01

Dimension-Wise Analysis of Medical Services: Expectations and Perceptions

Nursing Care

The data on Table 3 clearly confirms Significant mean differences ($p<0.01$) in patient expectations and perceptions of SMHS, SMGS and SACMHS hospitals on nursing care. The mean differences of SMHS (5.44), SMGS (5.47) and SACMH (2.90) clearly indicate that these hospitals fall below the expectations of their respective patients. FORTIS hospital, however, marginally exceeds the expectations of its patients (-0.40). Element-wise analysis of nursing care brings to light that SMHS and SMGS fall short of the expectations of their respective patients on

all elements of nursing care. Likewise, SACMH hospital also is lagging behind significantly on all elements of nursing care, except on nurses treatment with courtesy and respect (0.09) followed by nurse's answer the quarries of patients (0.12). FORTIS, however, exceeds the expectations of its patients on all elements of nursing care particularly on politeness and sympathetic attitude of nurses (-0.07) followed by promptness of nurses (-0.08).

Cleanliness and Comfort

The negative mean differences ($p<0.01$) of FORTIS, SMGS and SACMH hospitals (-2.20, -1.94 and -1.04 respectively) clearly demonstrates better medical service on cleanliness and comfort dimension as they are exceeding the expectations of their respective patients (Table 4). SMHS hospital, however, falls short of expectations of their respective patients on said dimension. Element-wise analysis of the said dimension reveals interesting results. SMHS hospital slightly falls short of its patients' expectations on all elements of cleanliness and comfort. FORTIS hospital remarkably exceeds its patients' expectations on all elements ($p<0.01$). As far as SACMH is concerned, it is also doing well in meeting its patients' expectations except on cleanliness of bathrooms and toilets (0.13) and fresh and clean garments (0.04).

Physician Care

The analysis of the Table 5 brings to light that there exists significant mean differences in patient expectations and perceptions ($p<0.01$) of SMHS and SACMH hospitals on physician care. The mean differences (Expectations-Perceptions) of SMHS (2.50) and SACMH (2.22) hospitals clearly reveals that both the hospitals are much below the expectations of their respective patients. SMGS hospital also falls short of expectations of its patients on the said dimension but the shortfall is relatively low (0.91). FORTIS, however, relatively exceeds the expectations of its patients (-0.34), though insignificantly.

The element wise analysis of physician care reveals that SMHS falls much below the expectations of its patients on doctors being supportive and helpful (0.59) followed by doctors instill confidence in patients (0.47). In the same way SACMH hospital is lagging behind on doctor's answer to patient's quarries (0.34), doctors being supportive and helpful (0.28) and doctors spending enough time on care and treatment (0.31). As far as FORTIS is concerned, the

hospital relatively exceeds the expectations of its patients on all elements of physician care, in particular, sympathetic and polite doctors (-0.08) followed by intelligent doctors (-0.07).

Treatment Results

Significant mean differences exists in patient expectations and perceptions ($p<0.01$) of SMHS, SMGS and SACMH hospitals on treatment results (Table 6). The difference in mean scores of SMHS (4.01), SMGS (3.65) and SACMH (2.95) clearly shows that these hospitals are relatively poor in meeting the expectations of their patients. FORTIS hospital, however, marginally exceeds the expectations of its patients (-0.44). Element-wise analysis of the Table reveals that SMGS and SACMH hospitals fall short of their respective patients' expectations on all elements of treatment results ($p<0.01$) except on information about health progress is given regularly ($p>0.01$) where the difference is insignificant. SMHS hospital, however, falls below the expectation of its patients on all elements of treatment results. The Hospital, in particular, is lagging behind on blood bank services (0.65) followed by attention of nurses regarding drip and wound dressing (0.59). FORTIS hospital exceeds its patients' expectations on all elements of the said dimension, in particular, on information about health progress is given regularly (-0.08) followed by condition improves after consulting the doctors (-0.07).

Registration and Admission

As revealed by Table 7, the overall difference in mean scores of FORTIS (-2.00), SACMH (-1.73) and SMGS (-0.36) shows that these hospitals exceed the expectations of their patients on Registration and Admission where as SMHS hospital (1.93) falls short of expectations of its patients on the said dimension ($p<0.01$). Element wise analysis of registration and admission reveals that SMGS and SACMH exceed their patients' expectations significantly on polite and helpful employees at registration counter, attendants acting honestly and employees providing admission tickets honestly. FORTIS hospital exceeds their patients' expectations on all elements where as SMHS hospital falls short of their patients' expectations on all elements of the said dimension of medical services.

Food services

The data on Table 8 clearly brings to light that FORTIS hospital (-0.08) only exceeds the expectations of its patients on Food Services. The mean scores of SMHS (1.29), SACMH (1.00)

and SMGS (0.45) clearly reveals relatively poor service quality as they fail to meet the expectations of their respective patients on the said dimension of service quality. Elements-wise analysis reveals that SMHS surprisingly exceeds its patients' expectations on meal delivery on time (-0.33) followed by temperature of food (-0.03). Likewise SMGS hospital exceeds its expectations on temperature of food (-0.06) followed by overall food services (-0.01) but falls short of their patients' expectations on the remaining elements of food services. FORTIS, as expected exceeds its patients expectations on all elements of said dimension , though marginally ($p>0.01$) while as SACMH hospital falls short of its patients' expectations on all elements of said dimension except meal delivery in time (-0.05) where the hospital exceeds its patient expectations.

Conclusions and suggestions

Service quality is a measure of how well the service level delivered matches customer expectations. Delivering quality service means conforming to customer expectations on consistent basis (Lewis & Booms, 1983). The findings of the present study lead us to conclude that both the public hospitals - SMHS and SMGS and one private hospital – SACMH hospital respectively falls below the expectations of their patients on overall quality of medical service. FORTIS hospital, however, exceeds the expectations of its patients on all dimensions of medical service. This research finding, to great extent, is in line with the research findings of (Hardeep et al., 2004). Private hospitals particularly, FORTIS backed by latest technology, qualified staff, good equipments and instruments, healthy conditions, etc., are providing better medical services as compared to other hospitals, under reference. The dimension-wise analysis revealed that the SMHS and SMGS Hospitals are comparatively poor on nursing care followed by treatment results. SMGS and SACMH hospitals, however, exceeds the expectations of their respective patients on cleanness and comfort and registration and admission. Present study has pinpointed the areas in which hospitals fall short of expectations of their respective patients. These findings suggest improvements in all service quality dimensions, in particular, Nursing Care and Treatment Results, which are reported relatively poor. In this way, the hospitals, under reference, in particular can improve their medical services with resources being shifted to those areas which most heavily influence patient perceptions of medical services.

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Table 3: Patient's Expectations and Perceptions on Nursing Care

Elements of service quality dimension (Nursing Care)	Group	HOSPITALS															
		SMHS				SMGS				SACMH				FORTIS			
		Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value
1. Sympathy and politeness of nurses	E	4.14	0.47	0.45	5.05**	3.93	0.60	0.53	5.81**	4.36	0.38	0.36	4.22**	4.00	0.67	-0.07	-0.72
	P	3.69	0.57			3.40	0.44			4.00	0.51			4.07	0.30		
2. Promptness of nurses	E	4.08	0.51	0.67	6.90**	3.88	0.56	0.73	8.21**	4.33	0.42	0.55	5.82**	4.01	0.62	-0.08	-0.82
	P	3.41	0.63			3.15	0.49			3.78	0.59			4.09	0.49		
3. Intelligence of nurses	E	3.90	0.61	0.65	6.34**	3.85	0.57	0.65	6.67**	4.30	0.35	0.39	4.51**	3.99	0.62	-0.02	-0.25
	P	3.25	0.59			3.20	0.57			3.91	0.58			4.01	0.45		
4. Interaction with patients	E	4.03	0.65	0.76	7.04**	3.88	0.58	0.72	7.47**	4.33	0.40	0.38	4.22**	4.16	0.59	-0.04	-0.44
	p	3.27	0.61			3.16	0.54			3.95	0.57			4.20	0.47		
5. Supportive and helpful nurses	E	3.83	0.54	0.58	5.79**	3.78	0.57	0.55	6.27**	4.25	0.41	0.47	5.96**	3.97	0.61	-0.03	-0.33
	p	3.25	0.63			3.23	0.47			3.78	0.45			4.00	0.43		
6. Quick response from nurses	E	4.10	0.46	0.82	7.61**	4.03	0.60	0.57	6.06**	4.26	0.40	0.06	0.68	4.11	0.61	-0.04	-0.43
	p	3.28	0.77			3.46	0.49			4.20	0.52			4.15	0.44		
7. Confident and trustworthy nurses	E	3.80	0.52	0.46	5.02**	3.80	0.57	0.60	6.72**	4.26	0.40	0.48	5.71**	4.16	0.57	-0.06	-0.65
	p	3.34	0.54			3.20	0.46			3.78	0.49			4.22	0.43		
8. Nurses treat you with courtesy and respect	E	3.96	0.48	0.41	4.68**	3.97	0.62	0.62	6.29**	4.24	0.39	0.09	1.05	4.22	0.59	-0.03	-0.34
	p	3.55	0.52			3.35	054			4.15	0.54			4.25	0.39		
9. Nurses respond to quarries from patients	E	4.05	0.49	0.64	6.50**	4.01	0.58	0.50	5.21**	4.33	0.38	0.12	1.53	4.12	0.60	-0.03	-0.33
	p	3.41	0.65			3.51	0.55			4.21	0.49			4.15	0.54		
Nursing Care (1+2+3+4+5+6+7+ 8+ 9)	E	35.89	3.81	5.44	8.45**	35.13	3.45	5.47	7.29**	38.66	3.02	2.90	4.21**	36.74	3.98	-0.40	-1.12
	p	30.45	4.70			29.66	3.07			35.76	3.46			37.14	3.79		

Note: *For details related to E & P, level of significance, N and df., Refer to Table 7.*

Table 4: Patient's Expectations and Perceptions on Cleanliness and Comfort

Elements Service Quality Dimension (Cleanliness and Comfort)	Group	HOSPITALS															
		SMHS				SMGS				SACMH				FORTIS			
		Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value
1. Neat and clean corridors	E	3.64	0.60	0.04	0.46	3.04	0.57	-0.06	-0.64	3.94	0.40	-0.36	-5.00**	3.80	0.74	-0.30	-3.25**
	P	3.60	0.57			3.10	0.38			4.30	0.38			4.10	0.28		
2. Bathrooms and toilets are clean and functioning	E	3.43	0.69	0.18	1.85	2.83	0.72	-0.18	-2.04*	3.81	0.42	0.13	1.77	3.83	0.67	-0.32	-3.45**
	P	3.25	0.58			3.01	0.33			3.68	0.40			4.15	0.28		
3. Neat and clean waiting rooms	E	3.40	0.62	0.10	1.03	2.95	0.62	-0.20	-2.40*	3.43	0.48	-0.40	-7.06**	3.81	0.70	-0.24	-2.56*
	P	3.30	0.56			3.15	0.30			3.83	0.44			4.05	0.38		
4. Fresh and clean garments and curtains	E	3.46	0.77	0.16	1.45	3.31	0.73	-0.66	-6.27**	4.12	0.73	0.04	0.26	3.82	1.00	-0.28	-2.85**
	p	3.30	0.75			3.97	0.48			4.08	0.64			4.10	0.27		
5. Clean drinking water area	E	3.41	0.65	0.16	1.49	2.92	0.58	-0.13	-1.55	3.84	0.45	-0.03	-0.40	3.81	0.64	-0.29	-3.05**
	p	3.25	0.62			3.05	0.44			3.87	0.43			4.10	0.30		
6. Ventilation of wards	E	3.57	0.79	0.00	0.00	3.47	0.71	-0.18	-2.15*	4.22	0.69	-0.10	-0.88	3.90	0.91	-0.20	-2.25*
	p	3.57	0.80			3.65	0.55			4.32	0.53			4.10	0.43		
7. Bedding etc. is regularly changed	E	3.60	0.82	0.10	1.05	3.21	0.79	-0.09	-0.92	4.08	0.76	-0.07	-0.53	3.88	0.95	-0.30	-3.25**
	P	3.50	0.74			3.30	0.57			4.15	0.57			4.18	0.31		
8. Floors are regularly cleaned	E	3.57	0.61	0.08	0.95	2.96	0.57	-0.44	-4.65**	4.00	0.42	-0.25	-4.30**	3.88	0.64	-0.27	-2.80**
	p	3.49	0.46			3.40	0.33			4.25	0.36			4.15	0.22		
Cleanliness and comfort (1+2+3+4+5+6+7+8)	E	28.08	3.11	0.82	1.60	24.69	3.02	-1.94	-4.26**	31.44	3.03	-1.04	-3.90**	30.73	3.30	-2.20	-4.42**
	p	27.26	2.95			26.63	2.91			32.48	3.10			32.93	3.28		

Note: *For details related to E & P, level of significance, N and df., Refer to Table 7.*

Table 5: Patient's Expectations and Perceptions on Physician Care

Elements of service quality dimension (Physician Care)	Group	HOSPITALS															
		SMHS				SMGS				SACMH				FORTIS			
		Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value
1. Sympathy and politeness of doctors	E	4.12	0.48	0.32	3.57**	4.20	0.48	-0.07	-1.03	4.32	0.38	0.02	0.30	4.32	0.49	-0.08	-1.09
	P	3.80	0.57			4.27	0.41			4.30	0.51			4.40	0.40		
2. Promptness of doctors	E	4.06	0.54	0.26	2.36*	4.08	0.54	0.24	2.91**	4.30	0.37	0.11	1.35	4.26	0.50	0.01	0.17
	P	3.80	0.53			3.84	0.39			4.19	0.49			4.25	0.54		
3. Intelligent doctors	E	4.19	0.70	0.08	0.63	4.23	0.76	0.09	0.70	4.67	0.57	0.37	3.21**	4.43	0.72	-0.07	-1.05
	P	4.11	0.62			4.14	0.66			4.30	0.67			4.55	0.61		
4. Supportive and helpful doctors	E	3.86	0.51	0.59	5.75**	4.00	0.59	0.20	2.33*	4.31	0.41	0.28	3.73**	4.31	0.41	-0.02	-0.90
	p	3.27	0.53			3.80	0.44			4.03	0.42			4.33	0.44		
5. Doctors instill confidence in patients	E	3.96	0.55	0.47	5.28**	4.02	0.56	0.16	1.72*	4.41	0.44	0.28	3.13**	4.21	0.47	-0.04	-0.97
	p	3.49	0.49			3.86	0.51			4.13	0.54			4.25	0.47		
6. Doctors explain reason/s for test/s	E	4.11	0.55	0.25	2.29*	4.05	0.60	0.10	1.00	4.42	0.40	0.23	2.58*	4.16	0.54	-0.06	-1.01
	p	3.86	0.58			3.95	0.57			4.19	0.56			4.22	0.49		
7. Enough time is spent by doctors on treatment and care	E	4.23	0.55	0.23	2.14*	4.26	0.58	0.11	1.25	4.53	0.42	0.31	3.45**	4.12	0.60	-0.03	-0.92
	p	4.00	0.52			4.15	0.48			4.22	0.54			4.15	0.55		
8. Doctors answer the quarries of patients	E	4.12	0.64	0.14	1.19	4.31	0.57	0.01	0.08	4.63	0.36	0.34	4.14**	4.21	0.55	-0.04	-0.96
	p	3.98	0.54			4.30	0.44			4.29	0.52			4.24	0.45		
9. Confident and trustworthy doctors	E	4.13	0.48	0.16	1.26	4.13	0.59	0.08	0.95	4.47	0.42	0.28	2.99**	4.26	0.59	-0.01	-0.75
	p	3.97	0.47			4.05	0.45			4.19	0.59			4.27	0.39		
Physician Care (1+2+3+4+5+6+7+8+9)	E	36.78	3.82	2.50	5.01**	37.28	3.90	0.91	1.26	40.06	3.10	2.22	3.40**	38.28	3.85	-0.34	-1.05
	p	34.28	3.66			36.36	3.40			37.84	3.92			38.66	3.75		

Note: *For details related to E & P, level of significance, N and df., Refer to Table 7.*

Table 6: Patient's Expectations and Perceptions on Treatment Results

Elements of service quality Dimension (Treatment Results)	Group	HOSPITALS															
		SMHS				SMGS				SACMH				FORTIS			
		Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value
1. Improvement in conditions after consulting the doctors	E	4.17	0.70	0.17	1.25	4.67	0.58	0.33	3.64**	4.88	0.32	0.46	6.09**	4.07	0.73	-0.08	-1.15
	P	4.00	0.79			4.34	0.47			4.42	0.49			4.15	0.81		
2. Medicines are always adequately available	E	4.47	0.65	0.37	2.90**	4.19	0.82	0.46	3.78**	4.68	0.56	0.63	5.33**	4.33	0.96	-0.03	-0.87
	P	4.10	0.78			3.73	0.58			4.05	0.72			4.36	0.51		
3. Medical test facilities adequately available	E	4.20	0.62	0.30	2.14*	4.22	0.39	0.15	2.83**	4.55	0.52	0.19	2.13*	4.31	0.52	-0.02	-0.68
	P	3.90	0.56			4.07	0.42			4.36	0.47			4.33	0.37		
4. Result of tests comes quickly	E	3.85	0.65	0.35	2.75**	3.99	0.52	0.50	6.19**	4.39	0.40	0.27	3.51**	4.22	0.69	-0.02	-0.70
	p	3.50	0.53			3.49	0.42			4.12	0.42			4.24	0.44		
5. Blood bank services	E	3.65	0.65	0.65	5.26**	3.89	0.49	0.52	6.47**	4.36	0.47	0.08	0.92	4.01	0.71	-0.03	-0.85
	p	3.00	0.53			3.37	0.45			4.28	0.40			4.04	0.46		
6. Procedure of treatment	E	3.93	0.58	0.48	3.85**	4.07	0.51	0.31	3.47**	4.59	0.35	0.45	7.63**	4.24	0.61	-0.03	-0.82
	p	3.45	0.46			3.76	0.37			4.14	0.29			4.27	0.39		
7. Method of explaining result of tests	E	3.89	0.82	0.59	4.69**	4.11	0.62	0.72	7.66**	4.27	0.60	0.39	3.22**	4.08	0.56	-0.04	-0.95
	P	3.30	0.84			3.39	0.49			3.88	0.69			4.10	0.62		
8. Attention from nurses regarding drips and wound dressing	E	3.75	0.57	0.15	1.18	4.03	0.55	0.44	5.07**	4.50	0.37	0.42	5.67**	4.20	0.57	-0.05	-1.02
	p	3.60	0.52			3.59	0.47			4.08	0.42			4.25	0.52		
9. Information about health progress is given	E	3.94	1.02	0.54	4.06**	4.36	0.59	-0.04	-0.46	4.55	0.59	-0.17	-1.72	4.00	0.84	-0.08	-1.25
	p	3.40	1.06			4.40	0.49			4.72	0.45			4.08	0.58		
10. Politely treated	E	3.91	0.55	0.41	3.65**	4.11	0.50	0.26	3.25**	4.51	0.37	0.23	3.03**	4.08	0.70	-0.06	-1.02
	p	3.50	0.47			3.85	0.40			4.28	0.43			4.12	0.35		
Treatment results (1+2+3+4+5+6+7+8+9+10)	E	39.76	4.11	4.01	6.54**	41.64	4.98	3.65	5.08**	45.28	3.19	2.95	4.30**	41.54	4.01	-0.44	-1.27
	p	35.75	3.24			37.99	3.56			42.33	3.98			41.94	3.76		

Note: *For details related to E & P, level of significance, N and df., Refer to Table 7.*

Table 7: Patient's Expectations and Perceptions on Registration and Admission

Elements of service quality dimension (Registration and Admission)	Group	HOSPITALS															
		SMHS				SMGS				SACMH				FORTIS			
		Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value
1. Behavior of gatekeepers	E	3.30	0.95	0.25	2.32*	2.74	0.89	0.08	0.64	3.30	0.85	-0.60	-4.85**	3.75	0.95	-0.35	-2.45*
	P	3.05	0.83			2.66	0.65			3.90	0.44			4.10	0.73		
2. Employees at registration counter are polite and helpful	E	3.69	0.69	0.21	2.10*	3.13	0.63	-0.33	-3.39**	3.60	0.78	-0.57	-4.64**	3.90	0.89	-0.25	-1.54
	P	3.48	0.84			3.46	0.50			4.17	0.44			4.15	0.88		
3. Attendants act honestly	E	3.55	0.72	0.35	3.05**	3.24	0.63	-0.20	-2.88**	3.87	0.56	-0.24	-3.04**	3.88	0.61	-0.31	-2.24*
	P	3.20	0.60			3.44	0.54			4.11	0.53			4.19	0.53		
4. Employees providing admission tickets act honestly	E	3.68	0.61	0.24	2.21*	3.32	0.60	-0.24	-3.01**	3.83	0.59	-0.42	-3.65**	3.96	0.65	-0.44	-2.59**
	p	3.44	0.60			3.56	0.50			4.25	0.49			4.40	0.48		
5. Overall procedure of registration	E	3.74	0.56	0.44	3.85**	3.57	0.49	-0.10	-2.05*	4.07	0.59	-0.04	-0.42	4.10	0.54	-0.35	-2.49*
	p	3.30	0.51			3.67	0.52			4.11	0.49			4.45	0.54		
6. Waiting time to be attended	E	3.79	0.94	0.44	4.02**	3.89	0.80	0.43	3.20*	4.22	0.78	0.14	1.07	4.00	0.99	-0.30	-2.21*
	p	3.35	0.81			3.46	0.77			4.08	0.56			4.30	0.63		
Registration and Admission (1+2+3+4+5+6)	E	21.75	3.15	1.93	4.23**	19.89	2.96	-0.36	-2.07*	22.89	2.96	-1.73	-3.35**	23.59	3.65	-2.00	-4.02**
	p	19.82	2.90			20.25	3.01			24.62	2.62			25.59	2.98		

Note: E & P denotes patients' expectations and perceptions respectively. *P<0.05; **P< 0.01

Hospitals	SMHS	SMGS	SACMH	FORTIS
Number	140	140	120	120
df:	139	139	119	119

Table 8: Patient's Expectations and Perceptions on Food Services

Elements of Service Quality Dimension (Food Services)	Group	HOSPITALS															
		SMHS				SMGS				SACMH				FORTIS			
		Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value	Mean	STD Dev.	M.D	T. Value
1. Meal delivery quite in time	E	3.80	0.79	-0.33	-2.70*	3.33	0.84	0.03	0.45	4.23	0.85	-0.05	-0.34	3.87	0.99	-0.13	-0.85
	P	4.13	0.63			3.30	0.47			4.28	0.71			4.00	0.41		
2. Taste of food	E	3.71	0.70	0.48	4.07**	3.27	0.79	0.02	0.35	4.08	0.78	0.10	0.82	3.85	0.98	-0.10	-0.70
	P	3.23	0.70			3.25	0.53			3.98	0.50			3.95	0.49		
3. Temperature of food	E	3.84	0.71	-0.03	-0.22	3.39	0.95	-0.06	0.65	4.17	0.80	0.02	0.12	3.95	0.98	-0.10	-0.73
	P	3.87	0.77			3.45	0.57			4.15	0.63			4.05	0.48		
4. Range and appeal of menus	E	3.47	0.86	0.46	4.01**	2.87	0.77	0.42	3.90**	3.95	0.76	0.27	2.16*	3.65	1.08	-0.08	-0.49
	p	3.01	0.80			2.45	0.70			3.68	0.56			3.73	0.72		
5. Behaviour of staff serving food	E	3.73	0.65	0.46	4.25**	3.10	0.85	0.05	0.55	4.17	0.82	0.54	3.54**	3.78	0.97	-0.20	-1.45
	p	3.27	0.61			3.05	0.63			3.63	0.82			3.98	0.25		
6. Overall food service	E	3.71	0.66	0.25	2.32*	3.24	0.73	-0.01	-0.15	4.07	0.80	0.12	0.89	3.88	0.92	-0.07	-0.45
	p	3.46	0.53			3.25	0.47			3.95	0.62			3.95	0.61		
Food Services (1+2+3+4+5+6)	E	22.26	3.22	1.29	3.10**	19.20	3.11	0.45	1.03	24.67	3.05	1.00	2.85**	22.98	3.56	-0.68	-1.95
	P	20.97	3.05			18.75	2.97			23.67	2.96			23.66	2.75		

Note: *For details related to E & P, level of significance, N and df., Refer to Table 7.*