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Comparing Patients' Satisfactions Towered Service Quality of Public and Private Hospitals in Bahrain

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Abstract

Through primary research employing SERVQUAL, This paper aims to compare patients' expectations, perceptions, and satisfactions in both private and public hospitals of Bahrain. A sample of 235 patients of hospitals and medical centers participated in the questionnaire survey. Bahraini patients have high expectations for all dimensions of service quality, especially in the private sector, but non-significant differences are found between private and public hospitals, except for the empathy dimension. Patients' perceptions of services provided by private sector are much better than services in public sector. Both groups of patients are dissatisfied with the healthcare services of Bahrain.

Key words: Healthcare; Service quality; Public and private Hospitals; Bahrain

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INTRODUCTION

In Bahrain, given rapid population growth, the government is facing the daunting task of providing health care for every resident of the country. In the period 2005-2010, population burgeoned from 724,645 people in 2005 to a current population of 1,106,509. The government of Bahrain provides free health services to all people living on the island regardless of their citizenship through an increasing number of public hospitals (10 hospitals in 2009 up from 9 hospitals in 2005) and primary health care units and centers (24 centers in 2009 up from 23 centers in 2005). The government is also encouraging the private health sector to establish new hospitals, and, consequently, the number of private hospitals has been increased from 9 in 2005 to 13 in 2009 (Ministry of Health, 2009).

Residents of Bahrain have the choice to get medical treatment cost free in public hospitals or with charge in private hospitals. Culturally, Bahraini residents, especially high incomes, hold positive attitudes toward the private sector, including the health care industry, on the basis that such institutions offer better services than public counterparts. However, private hospitals are providing services under constraints of meeting patients' expectations and facing the rivals within health care industry. On the other hand, public hospitals are under pressure of Bahraini citizens and government officials who are striving to achieve the state objectives of providing and improving universal health care services.

Improving Service quality has become an important topic in view of its significant relationship to profit, cost saving and market share (Devlin & Dong, 1994). Researchers of Service marketing have developed nineteen service quality models during the period 1984-2003 (Seth, Deshmukh & Vrat, 2005). The service quality model "SERVQUAL" is the most known model to evaluate service quality of all. It is based on the assumption that service quality is a function of differences (gaps) between customers' expectations and perceptions along five quality dimensions: reliability, responsiveness, tangibles, assurance and empathy (Parasuraman *et al.*, 1985, 1988, 1991). Understanding how well customers' evaluate their organizational (e.g., hospital) service quality performance can help to identify the points of strengths and weaknesses in the existing system and enhance its quality in the future.

The foremost purpose of this research is to investigate

and compare the perceptions of service quality from the perspective of patients of public and private hospitals in Bahrain. In more specific terms, this research aims to investigate: a. Patient expectations, perceptions, and satisfactions toward the service quality of public and private hospitals in Bahrain. b. The relevant service quality dimensions used by patients to evaluate the quality of hospital services.

1. THE IMPORTANCE OF THE PRESENT STUDY

Although many empirical studies have been conducted in the healthcare services globally, limited empirical research has been conducted in Arab countries. Most of the extant research is mainly concerned with the quality of services provided by hospitals, while little attention is given to comparing services afforded by public and private hospitals.

In the state of Bahrain, although there is very little empirical research conducted to measure the quality of health services, no attempt has been made to compare public and private hospitals. This research tries to fill this gap by empirically investigating patient expectations and perceptions of service quality provided by public and private hospitals in Bahrain. By understanding how patients evaluate the quality of services, the healthcare provider can determine and improve areas of identified weaknesses in the hospital and enhance its competitive position.

2. LITERATURE SURVEY

Two major school of thoughts have been developed for measuring the service quality, to which the health care sector is no exception; namely, the European Nordic school (Gronroos, 1984) and the American school (Parasuraman *et al.*, 1985, 1988, 1991). The Nordic view explains the service quality based on two dimensions, i.e. technical quality (e.g., surgical skills), and functional quality (e.g. attitudes of doctors and nurses toward the patients, and cleanliness of the facilities, …). In contrast, the American view of service quality is mainly concerned with the functional quality. Therefore, SERVQUAL model has been developed to evaluate the service quality that is based on the comparison of customers' expectations and perceptions of a particular service along five dimensions tangibility, reliability, responsiveness, empathy, and assurance. According to the confirmation/ disconfirmation theory, if the result of the comparison is positive, the perception score (P) is higher than the expectation score (E), it implies that patient's expectations have been met and that he / she is satisfied with the service, while the negative score means the opposite, Parasuraman *et al*. (1985, 1988, 1991). As patients often lack medical expertise sufficient to evaluate the technical attributes of services, the functional quality as perceived by patients has been widely used to evaluate the health services, (Buttle, 1996; Dursun & Cerci, 2004).

Since then, the SERVQUAL framework has been applied to assess service quality for variety of service sectors: banking (Roig *et al*., 2006; Yavas, Bilgin & Shemwell, 1997), hotels (Olorunniwo *et al.*, 2006), sport tourism (Kouthouris & Alexandris, 2005), retails stores (Eastwood *et al.*, 2005), library setting (Ho & Crowley, 2003), government local authority (Wisniewski, 2001), professional business (Accounting) (Aga & Safali, 2007), education (Arambewela and Hall, 2006), airlines (Prayag, 2007), mobile communications (Lai *et al.*, 2007), and web portals (Kuo *et al.*, 2005).

Regarding the health care industry within the Arabic Gulf Region. Jabnoun and Chaker (2003) compared service quality provided by private and public hospitals in UAE. Using a modified SERVQUAL questionnaire, the study found that patients of public hospitals were generally more satisfied than patients of private hospitals. In addition, public hospitals scored higher in terms of tangibles, empathy, reliability and administrative responsiveness dimensions.

Within the context of Arabic countries. Based on a comparison of patients' expectations and perceptions of SERVQUAL 22 statements in Egypt's public and private hospitals, Mostafa (2005) found that all statements are statistically significant. Although higher expectations than perceptions were obvious in both types of hospitals, patients of private hospitals were generally more satisfied than patients in public hospitals.

Alasad and Ahmed (2003) examined satisfaction of patients with nursing care at a major teaching hospital in Jordan. Data obtained from 266 in-patients of three wards showed that patients in the surgical ward had a lower level of satisfaction than patients in the medical or gynecological wards.

Regarding the studies in developing countries. Andaleeb (2000) examined the quality of health care services provided by public and private hospitals in urban Bangladesh Using a five dimensional construct consisting of responsiveness, assurance, communication, discipline, and baksheesh to measure patient perceptions of hospital services. The results indicated that private hospitals have better ratings than public hospitals on most of the items on the first four above mentioned dimensions. In addition, since the scores do not exceed the 5.5 mark for any of the twenty-four items on the 7- point scale, the results clearly showed that both private and public hospitals have room for improvement,. In contrast, using a refined scale of the SERVQUAL construct, Polsa, *et al.*, (2011) found that patients perceived healthcare service quality in both private and public Nigerian hospitals as good or very good. All the mean scores for all service quality statements were above the average on a seven- point scale. In addition, when the tertiary healthcare level that is provided by highly specialized institutions was excluded

from the analysis, highly significant difference in favour of private hospitals was manifested.

Undertaking the statements of SERVQUAL model as starting point, Aagia and Garg (2010) developed and tested (PubHosQual) scale for assessing perceived service quality in Indian public hospitals. The proposed scale which consists of five dimensions: admission, medical service, overall service discharge process, and social responsibility with 24 dimensions, is proved to be more reliable than SERVQUAL dimensions for measuring patients' perceptions of service quality. In the same direction, Baker, Akgun and Assaf (2008) conducted a preliminary evaluation of patients' attitudes regarding the important dimensions of health service by using an adapted SERVQUAL scale. Data collected from 472 patients at Baskent University Ankara hospital revealed that patients' perceptions were higher than their expectations for ordinary hospitals and lower than their expectations for high-quality hospitals. Responsiveness and reliability dimensions got the lowest expected scores of all dimensions.

Applying the principles of SERVQUAL model, Taner and Antony (2006) identified 40 indicators to measure patients' expectations and perceptions of service quality in public and private hospitals in Turkey. The results showed that patients in private hospitals were more satisfied with service quality, especially regarding "knowledgeable doctors and nurses"; "cleanliness and hygiene of the room and toilets"; and "taste of food, than their counterparts in public hospitals".

Arasli, Ekiz and Katircioglu (2008) applied a modified SERVQUAL instrument to assess and compare service quality in the Northern Cyprus public and private hospitals. Although the findings of the study revealed that patients' expectations in both types of hospitals were not met, private hospitals provided better services than public hospitals such as: services provided by doctors and nurses and building infrastructure and new equipment.

Narang (2010) studied patients' perceptions of health care services provided by state owned and missionary centers in Lucknow, India, based on 20- item scale that had been initially developed by Hadded *et al.* (1998). The results indicated that items related to "health personnel practices" and "health care delivery" had the highest impact on perception, while "access to service" and "adequacy of doctors for women" had the least impact. In general, the overall service quality was perceived to be higher in missionary centers than in state owned medical centers.

Pakdil and Harwood (2005) used the SERVQUAL model for measuring patients' satisfactions in a hospital-based preoperative assessment clinic, Turkey. Patients' satisfactions are measured by calculating the gap scores between patients' expectations and perceptions about services dimensions. The study revealed that patients are highly satisfied with all elements of service quality; specifically, "adequate information about their surgery" and "adequate friendliness, courtesy" items. However, Robini and Mahadevappa (2006) investigated patients' satisfaction of service quality in five hospitals of Bangalore, India. The study results show negative score across all the dimensions of SERVQUAL (i.e., expectations exceeds the perceptions), in the five hospitals, especially the reliability dimension in private hospital, empathy dimension in missionary hospital, and tangible dimension in state – owned hospitals. Assurance dimension scored least negative in all the hospitals. In contrast, Sohail (2003) found that patients' perceptions exceeded their expectations for the fifteen variables of service quality adapted from the original SERVQUAL instrument. Therefore, patients were generally satisfied with the services provided by private hospitals in Malaysia.

Karassavidoui, Glaveli and Papadopoulos (2009) used a modified version of SERVQUAL instrument to investigate patients' perception of National Health system (NHS) in Macedonia, Greece. The study results indicated that patients' expectations exceed their perceptions in all three factors generated in this study: human aspect, physical environment / infrastructure and access. The human factor (i.e., doctor - patient relationship) proved to be the most critical dimension as much as it registered the highest gap score of all.

Regarding the studies in developed countries. Andaleeb (1998) proposed and tested a five -factor model (communication with patients, competence of the staff, their demeanor, quality of the facilities, and perceived costs) that influences patients' satisfaction with hospitals in Pennsylvania. The study results showed that all factors, but especially perceived competence of the hospital staff and their demeanor, significantly affect patient satisfaction.

Frimpong, Nwankwo and Dason (2010) explored patients' satisfaction with access to public and private healthcare centers in London. The study results revealed that public patients, as opposed to private counterparts, were dissatisfied with the service climate factors (e.g. getting attention from doctors, time taken to get appointments, access to core treatment and opening hours). In general, the study concluded that both public and private healthcare users faced major problems in accessing healthcare. However, adapting SERVQUAL instrument consisted of 19 items to measure patient expectations, perceptions and gap scores of health care service quality in a Scottish colonoscopy clinic, Wisniewski and Wisniewski (2005) found that although patient overall satisfaction with the services was high, improvements were needed in specific service dimensions, especially reliability.

Berendes, *et al.* (2011) summarized the results of eighty studies comparing the quality of private and public ambulatory health care in low and middle income countries. Donabedian's classification of quality of health care, plus a responsiveness factor reflecting waiting time, communication quality, and dignity aspects, as well as the

"effort" made by providers was adapted for comparative purposes. They found that both groups indicated low quality in relation to structure, competence, and clinical practice, however, the private sector performed better for drug availability, responsiveness and effort.

3. SERVQUAL CRITICISMS

SERVQUAL, despite its wide application of as an instrument for measuring service quality, has been the object of criticism with respect to its conceptual and operational aspects.

Parasuraman *et al*. (1985, 1988, 1991) proposed a SERVQUAL model based on the confirmation/ disconfirmation theory (SQ = P – E). Since then, many marketing researchers have argued that neither disconfirmation theory nor expectation scores have any effect on customer satisfaction, (Carman, 1990; Cronin & Taylor, 1994; Teas, 1994; Buttle, 1996). Instead, the perception scores (SERVPERF) have been mainly recommended for measuring service quality as it has higher predictive validity of customers' satisfaction (Cronin and Taylor, 1992; Babakus & Mangold, 1992; Cadott, Woodruff & Jenkins, 1987; Lee, Lee, & Yoo, 2000; Luk & Layton, 2004).

On the other hand, other researchers have questioned the universality and dimensionality of the SERVQUAL instrument. They argued that the instrument could not be a generic measure for all service industries; instead it needs to be customized to fit the nature of specific service or nation, such as changing the wordings of some items in the instrument (Carman, 1990; Babakus & Mangold, 1992; Buttle, 1996; Mels *et al.*, 1997).

To avoid such weaknesses, other researchers proposed different structural models, but most of them are based on the SERVQUAL instrument (Gronroos, 1984; Lehtinen & Lehtinen, 1985; Mels *et al*., 1997; Svensson, 2006). In relation to health service, Piligrimiene and Buciuniene (2005) summarized the dimensions for measuring quality of health care proposed by various researchers. Coulthard (2004) offered a comprehensive review for the service quality researches since (1998). She concluded that further research is required to control or inhibit the conceptual, methodological and interpretative biases of SERVQUAL instrument.

Notwithstanding the criticism of the validity and reliability of SERVQUAL instrument, Buttle (1996) argued that it remains a useful instrument for measuring service quality. With respect to the health services, Babakus and Mangold (1992) reached the same conclusion and underscore that

"SERVQUAL, a standard instrument for measuring functional service quality, is reliable and valid in the hospital environment and in a variety of other service industries".

4. RESEARCH METHODOLOGY

4.1 Research Hypotheses

To achieve the purpose of this study, the following null hypotheses were formulated:

H01: there are no significant differences in patient expectations of service quality dimensions, (tangibles, reliability, responsiveness, assurance and empathy) between public and private hospitals in Bahrain.

H02: there are no significant differences in patient perceptions of service quality dimensions, (tangibles, reliability, responsiveness, assurance and empathy) between public and private hospitals in Bahrain.

H03: there are no significant differences in the gap score of service quality dimensions, (tangibles, reliability, responsiveness, assurance and empathy) between public and private hospitals in Bahrain.

Statistical techniques used to analyze the data generated by the questionnaire survey are two-fold: descriptive analysis; and, for determining the major factors underlying the service quality, factor analysis. To test the study hypotheses, t- tests and one- way ANOVA were employed.

4.2 Instrument Design

In this study, the researcher, to measure the perceived service quality, employed a methodology consonant with that proposed by Parasuraman *et al.* (1988). Inasmuch as the majority of Bahraini citizens are native speakers of Arabic, the questionnaire was first translated into Arabic language. Then, the translated version was submitted to several instructors of the Business and Finance College at Ahlia University in Bahrain for revision of the wording of the questions. The researcher reviewed these modifications and, finally, an instructor in the English Department compared the original instrument with the translated Arabic version for consistency.

Both language versions include four sections: the first section covers the demographic characteristics of the respondents. The second and third sections measure respondents' expectations (E) and perceptions (P) to the five dimensions of service quality. Each section contains 22 statements using a seven- point Likert scale ranging from "Strongly Disagree" =1 to "Strongly Agree" = 7 for measuring patients' expectations of a service and the patients' perceptions of a service provided by a given hospital. Finally, the fourth section contains five statements for estimating the relative importance of service quality dimensions. The respondents are asked to allocate 100 points over the five statements.

4.3 Sampling and Data Collection

A convenience sampling of hospital and health clinic patients was conducted during the first quarter of 2012. Administrated questionnaires were distributed personally to the samples in Manama, the capital of Bahrain. Only

patients with at least one year of health experience with the hospitals were surveyed by interviewers at different geographical locations, such as, hospitals, homes and business offices. 250 patients agreed to participate in the survey, fifteen questionnaires were dropped at the preliminary evaluation stage for incongruous or incomplete answers. The remaining 235 questionnaires, which represent 94% of the study samples, were considered suitable to be included in further statistical analysis.

5. STATISTICAL RESULTS AND DISCUSSION

5.1 Respondents' Demographic Characteristics

The respondents of this study were 235 people, of whom 52.34% were male and 47.66% were female, Table 1. The majority of these respondents were young or middle aged people: 35.75% for the 20 – 29 years of age group, 19.15 % for the group 30 – 39 years of age and 18.3 % were between 40- 49 years of age. In addition, they were highly educated people, 42.55 % of them were University graduate, (BS.c degree), 24.68 % for the diploma certificate level and 11.92% for the postgraduate degree. Regarding occupation, respondents were working in various fields, ranging from professional people 25.53% to housewives 9.79% and Craftsman 2.13%. Regarding nationality, the majority of the respondents were Bahrainis (80%) out of the total sample of 235. In general, 57 % of the respondents availed of public hospitals for medical treatment; 43 %, private hospitals.

5.2 Validity and Reliability Tests

Kaiser- Meyer – Olkin (KMO) measurement of sampling adequacy was first used to test the adequacy of the study sample for conducting factor analysis.

Table 1
Demographic Characteristics of Respondents

Characteristics	Frequency	%
Gender		
Male	123	52.34
Female	112	47.66
Age		
Under 20 years	27	11..49
20 – 29	84	35.75
30 – 39	45	19.15
40 – 49	43	18.30
50 – 59	28	11.91
60 years & over	8	3.40
Education		
Secondary School & Lower	49	20.85
Diploma Level	58	24.68
University Graduate	100	42.55
Postgraduate	28	11.92
Nationality		

To be continued

Continued

Characteristics	Frequency	%
Bahraini	188	80.00
Non - Bahraini	47	20.00
Occupation		
Executive / Manager	21	8.94
Professional	60	25.53
Trade / Proprietor	15	6.38
Student	56	23.83
Craftsman	5	2.13
Retired	21	8.94
Housewife	23	9.79
Unemployment	6	2.55
Others*	28	11.91
Type of hospitals		
Private hospitals	101	43.00
Public hospitals	134	57.00
Total	**235**	**100**

* Others category includes: Teachers, clerks, sellers, and air hostess.

The (KMO) value was found to be .958 meriting the carrying out of factor analysis (Table 1). The Bartlett's sphere test was also used to test the multivariate normality of the data distribution. It is also found significant at $p <$ 0.001. This result indicates that the data are multivariate normal and suitable for factor analysis.

In addition, the internal consistency method was selected to assess the reliability of SERVQUAL instrument used in this research. Therefore, Cronbach's coefficient alpha is computed separately for the overall total scale of the service quality and its five dimensions in the Expectation, Perception and Gap sections. In Table 2, the lowest generated value can be observed in the "Tangibles" dimension of gap section (.832). Churchill (1979) recommended that Cronbach's coefficient of 0.7 or more are considered adequate for measuring the reliability. Based on these figures, the internal consistency of service quality dimensions is good, and thus the scale can be considered quite reliable.

Table 2
Cronbach's Alpha Coefficient

Features	Expectations	Perceptions	P – E
Tangibles	.842	.868	.832
Reliability	.842	.923	.877
Responsiveness	.881	.902	.871
Assurance	.878	.911	.884
Empathy	.893	.913	.888
Total	.961	.973	.962

6. RESULTS AND DISCUSSION

6.1 Results of Factor Analysis

In this study, the factor analysis was conducted on both the expectation and perception scales using varimax

rotation. Any item that had factor loading equal or greater than .5, was retained, and any factor with eigenvalues greater than 1.0 would be included in the further analysis. In addition, items that show cross-loading greater than .5 on more than one factor, were dropped since they make the interpretation of the factors difficult and less precise. According to these procedures, the SERVQUAL scale resulted in two- factor solution which explained 62.750% of the cumulative variance in service quality. This figure is more than the 62% level reported in Parasuraman *et al.*'s studies (1985, 1988, 1991) by a small fraction (.750%). On the other hand, reviewing the loadings of all items in Table 3 indicates one item, No.19, is dropped, since it's loading is less than .5. In addition, Item No. 5 should be dropped since it had more than .5 loading on both factors. Consequently, the result of principle component analysis revealed two components with twenty items, which does not support the findings of Parasuraman *et al*. (1988, 1991).

6.2 Results of Descriptive Statistics

Descriptive statistical techniques were used to calculate the expectation mean (E), perception mean (P) and gap mean scores for each item in the SERVQUAL scale in both the private and public hospitals. In addition, T- tests were used to find out the significant difference between the means of expectation, perception and satisfaction in both the private and public hospitals.

6.3 Patient Expectation

Essentially, Table 3 presents the means of the expectation, perception, gap scores in both private and public hospitals. Reviewing the mean scores of the expectation section reveals that Bahraini patients' expectations are very high for all statements of service quality, above 5.1, in both types of hospitals. In the private hospitals, the lowest mean score of patients' expectations was 5.44 for "excellent hospitals will strive to provide error-free treatment-Q9", while the highest score was 6.01 for "materials associated with the service are visually appealing…Q4". Among the five dimensions of service quality, the highest expectation mean score was for the tangibles (5.898), followed by the responsiveness (5. 841) and the lowest one for the reliability (5.742). These results were expected due to the nature of services in the private sector and the characteristics of Arabian culture (including Bahraini one).

On the other hand, the expectation mean scores for all items of service quality in the public sector are relatively lower than their counterparts in the private sector, ranging from the highest score (5.813) for "excellent hospitals will provide their services at the time they promise to do so-Q8" to the lowest score (5.104) for "excellent hospitals will have personnel who give their patients personal attention-Q20". The tangibles dimension ranked first on the expectation scores (5.621), followed by the assurance (5.585) while the empathy dimension was the last (5.397), Table 3.

Table 3
Factor Loadings for SERVQUAL Construct

Dimensions	Factor Loadings		Mean Value						t- statistics			df	Sign
			Expectation		Perception		Gap		E	P	G		
	Factor 1	Factor 2	Private	Public	Private	Public	Private	Public					
Tangibles			5.8985	5.6213	5.3168	4.3321	-.5817	-1.2892	1.828	6.172	3.794	217.081	.000
Q1 Q1		.806	5.9703	5.7388	5.3465	4.3433	-.6238	-1.3955	1.289	4.970	3.343	228.516	.001
Q2		.857	5.6832	5.3657	5.2871	4.0896	-.3960	-1.2761	1.618	5.988	3.505	231.026	.001
Q3		.586	5.9208	5.6418	5.3366	4.6642	-.5842	-.9776	1.558	3.497	1.702	233.000	.090
Q4		.747	6.0198	5.7388	5.2970	4.2313	-.7228	-1.5075	1.669	5.858	3.332	226.157	.001
Reliability			5.7426	5.4963	5.2203	3.9739	-.5223	-1.5224	1.575	7.006	4.797	232.587	.117
Q5	.562	.522											
Q6	.634		5.8020	5.3209	5.2772	4.0299	-.5248	-1.2910	2.337	6.173	2.950	229.884	.004
Q7	.709		5.8218	5.4776	5.1089	3.9179	-.7129	-1.5597	1.915	5.323	3.260	229.787	.001
Q8	.722		5.9010	5.8134	5.3564	4.1642	-.5446	-1.6493	.493	5.989	4.765	232.679	.000
Q9	.711		5.4455	5.3731	5.1386	3.7836	-.3069	-1.5896	.347	6.413	4.779	223.385	.000
Respons			5.8416	5.5522	5.3391	4.0373	-.5025	-1.5149	1.744	7.375	4.978	222.055	.000
Q10	.645		5.9010	5.6866	5.3069	4.5000	-.5941	-1.1866	1.179	4.060	2.509	225.326	.013
Q11	.761		5.9010	5.5522	5.2277	3.9328	-.6733	-1.6194	1.826	6.189	3.879	232.505	.000
Q12	.767		5.8911	5.5672	5.5050	4.1269	-.3861	-1.4403	1.706	6.987	4.194	230.645	.000
Q13	.817		5.6733	5.4030	5.3168	3.5896	-.3564	-1.8134	1.432	8.006	5.723	232.553	.000

To be continued

Continued

Dimensions	Factor Loadings		Mean Value						t- statistics			df	Sign
			Expectation		Perception		Gap		E	P	G		
	Factor 1	Factor 2	Private	Public	Private	Public	Private	Public					
Assurance			5.7772	5.5858	5.3144	4.0317	-.4629	-1.5541	1.182	7.237	5.381	219.128	.000
Q14	.775		5.8317	5.5448	5.1881	3.9403	-.6436	-1.6045	1.623	5.856	3.890	230.567	.000
Q15	.753		5.6931	5.4627	5.4158	4.0149	-.2772	-1.4478	1.225	6.804	4.523	231.600	.000
Q16	.727		5.9802	5.7612	5.4257	3.9701	-.5545	-1.7910	1.203	6.960	5.165	231.167	.000
Q17	.706		5.6040	5.5746	5.2277	4.2015	-.3762	-1.3731	.154	5.244	4.362	232.262	.000
Empathy			5.8020	5.3974	5.1510	3.8619	-.6510	-1.5354	2.459	7.130	4.164	216.606	.000
Q18	.722		5.8317	5.4627	5.2673	3.7313	-.5644	-1.7313	2.003	7.147	4.875	229.839	.000
Q19													
Q20	.752		5.7723	5.1045	5.1386	3.7313	.6337	-1.3731	3.330	6.803	2.872	225.156	.004
Q21	.688		5.8515	5.4552	5.0495	3.9030	-.8020	-1.5522	2.070	5.594	3.061	218.163	.002
Q22	.713		5.7525	5.5672	5.1485	4.0821	-.6040	-1.4851	.941	5.286	3.415	227.371	.001
Eignvalue	12.408	1.397											
Cumative % of Varaince	56.400	62.750											

Note: KMO (Kaiser- Meyer- Olkin measure of sampling adequacy)= 0.958. Bartlett's test of Sphericity= 3897.288. (P< 0.001).

6.4 Patient Perception

It is obvious from the comparison between the mean scores for all items of service quality that patient perception in private hospitals was much higher than patient perception in public hospitals, Table 3. The highest mean score of perceived services in public hospitals was (4.664) for "personnel at(x) hospital are neat in appearance-Q3" that is below the highest perceived mean score (5.505) for "personnel of (x) hospital are always willing to help you-Q12" in private hospitals, Table 3. On the other hand, the lowest evaluation of perceived service in private hospitals (5.0495) was granted to the item "(x) hospital has your best interests at heart-Q21" while many items of perceived services in public hospitals were evaluated below the assumed mean score (4.0) on seven- point Likert scale, (e.g., 3.589) for "personnel of(x) hospital are never too busy to respond to your requests-Q13". Among the five service quality dimensions, the mean scores of most dimensions in public hospitals fall short or slightly above the assumed mean score (4.0), such as empathy (3.8619) and assurance (4.0317) while all the mean scores of perceived service dimensions in private hospitals were over (5.1). Regardless of the mean scores of service dimensions, patients of both hospitals disagreed about the perception rank of responsiveness and tangible dimensions, the former was ranked first by patients of private hospitals (5.3391) while the tangible dimension came first (4.3321) in public hospitals. However, the assurance, reliability and empathy dimensions kept there perceived ranks and came in the third, fourth and fifth positions respectively in both types of hospitals.

6.5 Patient Satisfaction / Dissatisfaction

Table 3 shows negative mean gap scores for all items of service quality in both types of hospitals which reflect patients' dissatisfactions with the healthcare services in Bahrain. The most important factor behind this outcome was the high level of patients' expectations in both types of hospitals. However, there are significant differences between patients' dissatisfaction in both types of hospitals, in private sector the level of dissatisfaction was much lower than the level of dissatisfaction counterpart in public sector. The highest negative mean gap score was (-.802) for the patients' best interest at heart (Q21) in private hospitals, whereas all mean gap scores were over 1.0, except for staff appearance (-.9776), (Q3) in public hospitals. The most dissatisfied items of service quality in public hospitals were declared for personnel response for patients' requests (-1.8134), (Q13) personnel courteously with the patients (-1.791), (Q16) and patients individual attention (-1.7313), (Q18). In contrast, the most dissatisfaction registered by respondents with respect to services in private hospital, beside that mentioned above, were for the visually appealing of materials associated with the services (-.7228) getting the things right the first time (-.7129) and giving prompt services to patients (-673). Among the five dimensions of service quality, patients in both types of hospitals marked the empathy dimension as the highest dissatisfied item, which was in the first and second ranks in private and public hospitals, (-.651) and (-1.535) respectively. However, they disagreed about the lowest dimension of service quality; the assurance and tangibles dimensions were considered the lowest item in private and public hospitals, (-.462) and (-.1.289),

respectively. Responsiveness and reliability dimensions had the same rank in dissatisfaction -- the fourth and third levels respectively in private and public hospitals.

It is presumed that patient perception scores for service quality would fall below their expectation, especially in the public hospitals, is in line with previous studies (Andleeb, 2000; Mostafa, 2005; Arasli, *et al.*, 2008). However, this study differed from than previous studies with respect to patient dissatisfaction in both types of hospitals. Previous studies generally found that patients availing services in private hospitals are more satisfied than their those availing in public hospitals.

6.6 The Results of T- Test and ANOVA

Table 3, column t-statistics, presents the results of independent samples t-test for comparing the mean scores of patients' expectations, perceptions and dissatisfactions for all service quality statements in private and public hospitals.

Reviewing the expectations column indicates non-significant differences between the means of private and public hospitals in terms of tangibles, reliability, responsiveness and assurance dimensions, while significant differences are only found in empathy dimension. The highest value of the observed t-test is (1.828) for the tangibles in the former four dimensions are below the critical value of t- test of ($p < 0.05$).

This result affirms the first null hypothesis that there are no significant differences in patient expectations in terms of tangibles, reliability, responsiveness, assurance dimensions of service quality in private and public hospitals of Bahrain, while the opposite is right for empathy dimension.

In terms of perceptions of healthcare services, there are significant differences between both groups of patients in all service quality statements. The observed t-test values, ranging from a minimum value (6.172) for tangibles to a maximum value (7.374) for responsiveness, exceed the critical value of t-test of $p < 0.05$.

Thus, the second null hypothesis "there are no significant differences in patient perceptions of service quality dimensions, (tangibles, reliability, responsiveness, assurance and empathy) between public and private hospitals in Bahrain" is rejected.

Significant differences between the patients of private and public hospitals are also found for all items of service quality, except for statement 3, in the gap mean scores. The lowest observed t-test value was (3.794) for the tangibles exceeding the critical value of t- test of $p< 0.05$.

On the other hand, one- way ANOVA was carried out to test whether there is a significant differences between the weighted mean gap scores of all dimensions and overall service quality in both populations groups.

Reviewing the results in Table 4 indicates that there are significant differences between private and public hospitals in terms of weighted means of all dimensions and overall service quality. The lowest value of the numerator F (7.170) for the empathy dimension exceeds the critical value of F of $p < 0.01$.

The result of weighted mean gap scores in both types of hospital implies that patients of private hospitals are generally less dissatisfied with the service quality than patients in public hospitals.

Table 4
ANOVA for Weighted Overall and Dimensions of Service Quality

		Sum of Squares	df	Mean Square	F	Sig
WTGTAN1	Between Groups	160.222	1	160.222	11.112	.001
	Within Groups	3359.561	233	14.419		
	Total	3519.783	234			
WTGREL3	Between Groups	308.548	1	308.548	15.972	.000
	Within Groups	4500.995	233	19.318		
	Total	4809.543	234			
WTGRES1	Between Groups	221.124	1	221.124	17.804	.000
	Within Groups	2893.869	233	12.420		
	Total	3114.994	234			
WTGASS1	Between Groups	165.218	1	165.218	17.017	.000
	Within Groups	2262.179	233	9.709		
	Total	2427.398	234			
WTGEMP3	Between Groups	113.221	1	113.221	7.170	.008
	Within Groups	3679.154	233	15.790		
	Total	3792.375	234			
WTGSQ1	Between Groups	188.172	1	188.172	21.546	.000
	Within Groups	2034.883	233	8.733		
	Total	2223.055	234			

The overall weighted mean score was -1.0995 for the private hospitals compared with -2.9071 for public hospitals, Table 5. This result is expected within Bahraini society since the private hospitals charged high prices for the provided services compared with free services in public hospitals. In addition, the number of patients who are treated in private hospitals is very limited compared with the number of patients in public hospitals.

Based on these results, the third null hypothesis "there are no significant differences in the gap score of service quality dimensions (tangibles, reliability, responsiveness, assurance and empathy) between public and private hospitals in Bahrain is rejected.

Table 5
Mean Values Based on Hospital Type

Dimensions	Relative importance		Mean	
	Private	Public	Private	Public
Weighted Tangibles	1.9010	2.1418	-1.2574	-2.9254
Weighted reliability	2.1584	2.1343	-1.1163	-3.4310
Weighted responsiveness	2.0792	1.9254	-0.8540	-2.8134
Weighted assurance	1.6931	1.8060	-0.8193	-2.5131
Weighted empathy	2.1881	2.0075	-1.4505	-2.8526
Weighted overall service			-1.0995*	-2.9071

***** The weighted mean gap score of overall service quality is calculated by multiplying the respondent's mean score for each dimension by its relative importance weight and summing the results of all dimensions.

CONCLUSION AND MANAGERIAL APPLICATION

SERVQUAL has been used to investigate patients' expectations, perceptions, and satisfaction levels at public and private hospitals in Bahrain. 235 patients responded to the questionnaire survey with 57% of the respondents availing of services in public hospitals and 43% of the respondents availing of services in private hospitals. Factor analysis resulted in two factors which explain 62.750% of the cumulative variance in service quality. This figure is more than the 62% level reported in Parasuraman *et al*. (1985, 1988, 1991) by small fraction, .750%. The first factor includes the reliability, responsiveness, assurance, and the empathy dimensions (except for item No.19) while the other factor covers the tangibles dimension only. The study results do not support the original proposition of five factors found by Parasuraman *et al.*' s studies (1985, 1988, 1991).

The descriptive analysis results indicate that Bahraini patients' expectations are very high for all dimensions of service, especially with respect to the private sector. However, a similar level of expectation manifests for the tangibles dimensions with maximum mean score of 5.898 and 5.621, respectively, for private and public. In contrast, in terms of lowest level of expectations, differentiation manifests: the reliability dimension attained the lowest mean score in the private sector (5.742), while the empathy dimension attained the lowest mean score in the public sector (5.397).

On the other hand, patients' perceptions of health care services provided of private hospitals were much better of services in public hospitals. The mean scores of most dimensions in public hospitals fall short or slightly above the assumed mean score (4.0), such as empathy (3.8619) and assurance (4.0317), while the perceived mean scores of all dimensions in private hospitals were above (5.1). The responsiveness dimension got the highest mean score of all in private hospitals (5.33911, while the tangibles dimension was the in first perceived rank in public hospitals (4.3321).

The negative mean gap scores for all items of service quality in both types of hospitals indicate that patients are dissatisfied with the healthcare services in Bahrain. However, the level of patients' dissatisfaction was much lower in the private sector than in the public sector.

The empathy dimension registered the most dissatisfaction with negative mean scores of -.651 and -1.535 in private and public hospitals respectively. Meanwhile, the assurance and tangibles dimensions attained least dissatisfaction in private and public hospitals -.462 and -.1.289, respectively.

The results of independent samples t-test indicate an absence of significant differences between the means of private and public hospitals in terms of tangibles, reliability, responsiveness and assurance dimensions. Indeed, the only significant difference is found in the empathy dimension. In contrast, the results show significant differences between patient perceptions for all service quality dimensions in both types of hospitals. The observed t-test values, ranging from the lowest value (6.172) for tangibles to the highest value (7.374) for the responsiveness, exceed the critical value of t-test of ($p<0.05$). In terms of patient dissatisfaction, significant differences between patients of private and public hospitals are also found for all service quality

dimensions. The lowest observed t-test value was (3.794) for the tangibles exceeding the critical value of t-test of ($p<0.05$). Moreover, the results of ANOVA analysis reflect significant differences between the weighted mean gap scores of all dimensions and overall service quality (df 1, 21.546, $p<0.000$) in both patients groups. The mean gap scores of overall service quality in private hospitals (-1.0995) and public ones (-2.9071) suggest that private healthcare patients are generally less dissatisfied than their public sector counterparts with the healthcare service quality. Therefore, the study results accept the first null hypothesis relating to the patients expectations, and reject the other two hypotheses relating to the patients perceptions and satisfactions.

The findings of this study reflect the following managerial implications: First, systematic assessment of patients' perceived service quality and satisfaction, especially in public hospitals, is an important element to consider in designing any marketing strategy for health care services over time. Such processes will enable the managers and doctors of a given hospital to identify the points of strength and weakness, relative to competitors, and consequently, serve as a guide for determining the allocation of investment of available resources in the dimensions that improve the quality of service delivery and patient satisfaction. Second, managers and doctors of Bahraini hospitals and health care centers should work together to respond and comply with patient's requests and enquiries, to enhance the level of empathy shown patients, and to improve tangible assets of the hospitals. By doing so, the hospital will increase the satisfaction of patients with its services. Third, managers and doctors should strive to streamline the operational system and recruit qualified managerial personnel, consonant with cultural values, to enable medical staff to offer an excellent and constant level of service quality over time.

The above conclusions are subject to qualification due to two points of limitation associated with this research study. First, convenience sampling technique was used to select the study respondents. Convenience sampling may not provide a representative sample of the population of all patients in Bahrain, and thus may distort generalizations derived from the findings of studies. Second, the study evaluated the quality of health services only on the basis of the public and private hospitals. Providers' attitudes were side-stepped. To get a complete and accurate vision of health services in Bahrain, further empirical research that incorporates both inputs from patients and providers is needed.

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