

# Perceptions of Service Quality and Behavioral Intentions: A Mediation Effect of Patient Satisfaction in the Private Health Care in Malaysia

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## Abstract

This study attempts to examine the mediation effect of satisfaction on service quality perception and intentions behavior of private hospital outpatients in Malaysia. 300 hospital outpatients were selected as the sample size. Regression analysis was run to test the hypotheses. Based on the 273 completed data, the results provide support for the association between perceived service quality dimensions (tangibles, assurance, and empathy) and behavioral intentions. The results also confirm that service quality perception is an antecedent of intentions. In addition, tangibility, reliability and assurance are important predictors of satisfaction, and satisfaction has a strong positive relationship with intentions. In short, service quality drives satisfaction which in turn drives behavioral intentions. The finding also indicates that satisfaction partially mediates the relationship between perceived service quality and behavioral intentions. As a result, the strength of the perceived service quality-behavioral intentions relationship becomes weaker when satisfaction is considered. Theoretical and managerial implications of the findings are also discussed.

**Keywords:** service quality dimensions, customer satisfaction, behavioral intentions, mediation effect

## 1. Introduction

Malaysia is positioning itself as the hub of medical tourism in Southeast Asia (Navid et al., 2010). As a result of this, healthcare travel, often referred to as medical tourism, is now recognized as a potential foreign exchange earner for Malaysia. The Malaysian medical tourism industry has been experiencing consistent growth at a rate of 15% throughout 2008 to 2009 (Frost & Sullivan, 2010). For the first six months of the year 2012, the revenue has reached RM300 million (Harian Metro, 2012).

The number of medical tourists visiting the country for medical tourism has hit approximately 425,500 in 2009, and Malaysia received 583,000 medical tourists in 2011. The majority of the visitors are from neighboring countries such as Indonesia (60 percent) and the remaining are from Singapore, Japan, India, United Kingdom, Iran, Nepal, and Bangladesh who came to seek more affordable medical treatment (Harian Metro, 2012).

In January 2010, the Prime Minister launched the Malaysia Healthcare Travel Council (MHTC) with the responsibility to formulate strategic plans in promoting healthcare travel. Malaysia is fast becoming the destination of choice for healthcare tourists behind established medical tourism locations such as Singapore and Thailand. Many local private hospitals now offer a variety of medical packages and special arrangements for foreign patients (Frost & Sullivan, 2010).

Among the factors that make Malaysia the preferred healthcare travel destination are friendly and highly professional medical staff; internationally accredited hospitals, world-class hospitals with state-of-the-art medical facilities; affordable costs of procedures; English-speaking population, a safe and friendly environment for visitors (Liow, 2010) and short waiting period (Frost & Sullivan, 2010). By Jun 2010, six of Malaysian healthcare facilities have obtained international accreditation from the Joint Commission International (JCI) and the government has to date identified 72 private hospitals for the purpose of healthcare tourism promotion (Harian Metro, 2012).

Past research, has linked service quality to customer satisfaction (Taylor & Baker, 1994) and purchase intentions (Zeithaml, Berry & Parasuraman, 1996). A few researchers have suggested that patients' perception of service quality is a key determinant of a health care organization's success due to its primary role in achieving patient satisfaction and hospital profitability (Donabedian, 1996). Other researchers went a step further by investigating the mediating effect of customer satisfaction on perceived service quality-behavioral intentions (Bou-Llusar, Camison-Zornoza, & Escrig-Tena, 2001; Brady & Robertson, 2001; Bigne & Blesa, 2003; Choi, Lee, Kim, & Lee, 2005; Mpingajira, 2008; Alrubaiee & Alkaa'id, 2011). However, there is no consistent finding found in different services industry. Thus, the main objective of this study is to answer the question; Is there any mediating effect of satisfaction on the relationships between perception of health care quality and behavioral intentions?

## 2. Literature Review

It is imperative that a service company measure and monitor service quality and satisfaction with a view to influence the behavioral intentions of their customers (Saha & Theingi, 2009). Although there are many factors affecting the attitude and intention of the consumer, it could be said that the perception of service quality is the most important among them. The importance of service quality is increasing nowadays. Interest in healthcare service quality is remarkable (Elleuch, 2008). According to Nelson et al. (1992), the patients perceptions of quality have been shown to account for 17-27 per cent of the variation in a hospital's financial measures such as earnings, net revenue, and return on assets.

### 2.1 *Intention Behavior*

Behavior intentions are defined as "patients' potential behaviors likely to be triggered by service quality and satisfaction" (Zeithaml, Berry, & Parasuraman, 1996). Zeithaml et al. (1996) proposed that perceived service quality is related to positive behavioral intentions, which could be viewed as signals of retention or defection. Alexandris, Dimitriadis and Markata (2002) noted that service quality predicts a significant amount of variation in all the behavioral intentions, namely word of mouth communication, intention to purchase and price sensitivity. Ndubisi (2004) revealed the association between perceived service quality dimensions such as tangibles, reliability, assurance, and empathy on one hand, and word-of-mouth (WOM) communications, patronage intentions, and complaining behavior on the other in the banking industry. According to Seth, Momaya and Gupta (2005), many studies have also found a direct positive link between service quality and customer behavioral intentions.

### 2.2 *Service Quality Perception*

The area of service quality is well-researched. Service quality assessments are not unidimensional (Choi, Cho, Lee, & Choi, 2004). Service quality is defined as how well the service meets or exceeds the customers' expectations on a consistent basis (Parasuraman, Zeithaml, & Berry, 1985). According to Bitner and Hubbert (1994), service quality is "the consumer's overall impression of the relative inferiority/superiority of the organization and its services". Unlike unlike product quality, service quality is hard to define and measure because of the inter-relationship of user expectations and the impact of specific features of service such as intangibility, inseparability, heterogeneity, and perishability (Parasuraman et al., 1985; Zeithaml, Bitner, & Gremler, 2006). The Service Quality Gaps Model and the SERVQUAL scales proposed by Parasuraman et al. (1985, 1988) are widely accepted tools for measuring service quality (Sohail, 2003; Ladhari, 2008). In healthcare settings, the two tools are also popular to assess service quality in a number of service categories such as acute care hospital, independent dental offices, at AIDS service agencies, with physicians and nurses, and hospitals (Taner & Antony, 2006).

Perception is defined as the process of noticing and making sense of information. Perceived quality is the consumer's evaluative judgment regarding the superiority of service performance (Zeithaml, 2000). Thus, perceptions provide the basic measurement tool in which individuals evaluate the attractiveness and/or desirability of the product or service. Because of the inherent credence properties of hospital service purchase, hospital quality service is purely perceptual (Danie, Oswald, & Turner, 1996). These perceptions will predict the kind of response (either support or resistance) customers give to services providers, each having different implications on the firm's profits and/or market share (Ndubisi, 2004).

Quality perceptions do not require experience with the service provider. Thus, the dimensions underlying quality judgments are very specific to delivering quality. The quality of health care services has been defined as "the degree to which health services for individuals and populations increases the likelihood of desired health outcomes and is consistent with current professional knowledge" (Institute of Medicine, 2001, p. 21). Medical service quality perception is a judgment whether the service performed for a patient is the most appropriate to

produce the best result that could be reasonably expected by the patient and whether those services are delivered with due attention to the doctor/patient relationship (Martinez, 1999).

### *2.3 Customer Satisfaction*

Patient satisfaction has been considered as one of the most important quality dimensions and key success indicators in health care (Pakdil & Harwood, 2005; Pollack, 2008). Customer satisfaction is about nurturing and meeting customer preferences and expectation to enhance customer-delivered value (Oakland, 2000; Owusu-Frimpong, Nwankwo, & Dason, 2010). Patient satisfaction is referred as the judgement made by a recipient of care as to whether their expectations for care have been met or not (Palmer, Donabedian, & Pover, 1991). Patient satisfaction with medical care is a multidimensional concept, with a dimension that corresponds to the major characteristics of providers and services (Ware, Snyder, Wright, & Davies, 1983; Donahue, Piazza, Griffin, Dykes, & Fitzpatrick, 2008; More, Rochedreux, Chevalier, Lombrail, & Gasquet, 2008; Abdul Majeed, Habib, & Rafiqul, 2011). Within the health care industry, patient satisfaction can be considered as an important component and measure of the quality of care (Salisbury et al., 2005). Patient satisfaction is a cumulative construct which embraces satisfaction with various hospital facets such as technical, functional, infrastructure, interaction and atmosphere (Zineldine, 2006). Patient satisfaction plays an important role in the continuity of service utilization (Thomas, 1994), and positively influences the patient's trust (Moliner, 2009; Alrubaiee & Alkaa'ida, 2011).

### *2.4 Linking Service Quality, Satisfaction, and Behavioral Intentions*

Although many studies have examined the relationship of patient satisfaction, perceived quality services and behavioral intentions internationally, no study that investigates the mentioned relationship in the Malaysia health care industry was found. Thus, this study attempts to examine the mediating effect of customer satisfaction towards the relationship between perception on service quality and behavioral intentions.

Smith and Swinehart (2001) indicated that there is a strong link between service quality and satisfaction. It was also believed that customer service is a prerequisite for customer satisfaction (Newman, Maylor, & Chansarkar, 2001). According to Ahmad Azmi and Norzalita (2008), tangibility, empathy, reliability and responsiveness make up service quality dimensions of hospital services known as "HOSPIQUAL". The researchers also noted that HOSPIQUAL affects the patients satisfaction of public and private health care services in Kuala Lumpur and Johore, Malaysia. Research in UAE revealed that perceived health care quality has a positive influence on patient satisfaction (Badri, Attia, & Ustadi, 2009). Navid, Ahmad Fuad and Yuserrie (2010) who conducted a research among the international patients who received treatment in Penang private hospitals in Malaysia concluded that all service quality dimensions have a positive relationship with customer satisfaction except for tangible dimension. According to Mpinganjira (2011), overall perceived service quality has a positive relationship with patient satisfaction.

The effect of service quality on behavioral intentions takes on different forms: direct effect, indirect effect through satisfaction, or moderating effect by satisfaction (Falk, Hammerschmidt, & Schepers, 2010; Bou-Llusar et al., 2001; Woodside, Frey, & Daly, 1989). For the direct effect, many studies in different industries have shown that service quality is an antecedent to behavioral intentions (Li, Huang, & Yang, 2011; Boshoff & Gray, 2004; Bou-Llusar et al., 2001); Parasuraman et al., 1985, 1988; Zeithaml et al., 1996). In health care settings, many evidences have also shown that the direct impact exists (Wu, Liu, & Hsu, 2008; O'Connor, Trinh, & Shewchuk, 2000; Gooding, 1995). When customers' perception of service quality are high, the behavioral intentions are favorable, which strengthen their relationship with the organization. In the banking industry, the service quality dimensions are directly and positively related with purchase intention, customer loyalty and willingness to pay more money (Baker & Crompton, 2000).

Satisfaction is found to positively affect patient intentional behavior (Bendall-Lyon & Powers, 2004; Otani & Harris, 2004). Satisfied Japanese outpatients are willing to return to the same service provider and to recommend services to families and friends (Elluech, 2008). Mpingajira (2008) indicated that patients overall satisfaction is a good mediating variable between service quality perceptions and positive behavioral intentions. The results provide further support to research findings by other researchers such as Anderson, Fornell, & Lehmann, 1994; Brady & Robertson, 2001; and Dagger & Sweeney, 2007.

Bou-Llusar et al. (2001) selected the ceramic industry to test the relationships among quality perception, satisfaction, and behavioral intentions. The results showed that customer satisfaction mediates the relationship between perceived service quality and behavioral intentions. Evidence of the mediating effect of satisfaction has been found in many service industries including health care setting (Wu et al., 2008; Gonzalez, Comesana, &

Breaa, 2007; Olsen, 2002; Shemwell, Yavas, & Bilgin, 1998; Zeithaml et al., 1996; O'Connor, Shewchuk, & Bowers, 1991).

Other researchers however agreed that service quality is a cognitive construct while satisfaction is a cognitive and affective construct. They suggested that satisfaction is a construct that mediates the effect of service quality perception on behavioral intentions and other outcomes such as patient trust (Brady & Robertson, 2001; Bigne et al., 2003; Choi et al., 2005; Alrubaiee & Alkaa'id, 2011). In other study (Lo, Osman, Ramayah, & Mosahab, 2010), the researchers found that satisfaction has a mediating effect on the relationships between service quality dimensions and customer loyalty. This result is consistent with studies done by Caruana (2002), Butcher (2001), Ehigie (2006) and Lam and Burton (2006). In 2011, Alrubaiee and Alkaa'ida who conducted a research in Jordan found the mediating effects of patient satisfaction in the association of healthcare quality and patient trust.

### 3. Research Methodology

This descriptive cross-sectional study was conducted in the duration of four months (August-December, 2011). A survey which employs the use of close-ended questions and specific questions on demographic characteristics is used.

#### 3.1 Measures, Hypotheses and Research Framework

Numerous studies on service quality in various service sectors have been guided by the SERVQUAL framework (Parasuraman et al. (1985, 1988). Realizing that this is an appropriate measurement tool, the SERVQUAL multi-item scales which focused along five dimensions: reliability, responsiveness, assurance, empathy and tangibles was employed for the current study to measure health care quality perception in a developing nation (Malaysia). Other revised SERVQUAL (Rohini & Mahadevappa, 2006; Wu et al., 2008; Li et al., 2011) has been taken into consideration. Dimensions of perceived service quality were measured using 22 items. The multi-dimensional model of the behavioral intentions proposed by Zeithaml et al. (1996) was used to measure behavioral intentions. Customer satisfaction was measured using seven items (overall and relative satisfaction) adapted from Oliver (1980), Taylor and Baker (1994), Grace and O'Cass (2005), and Wu et al. (2008). A seven point Likert-type scale, ranking from (1) for 'Strongly Disagree' to (7) for 'Strongly Agree' was used to measure the service quality scales, the customer satisfaction and the behavioral intentions.

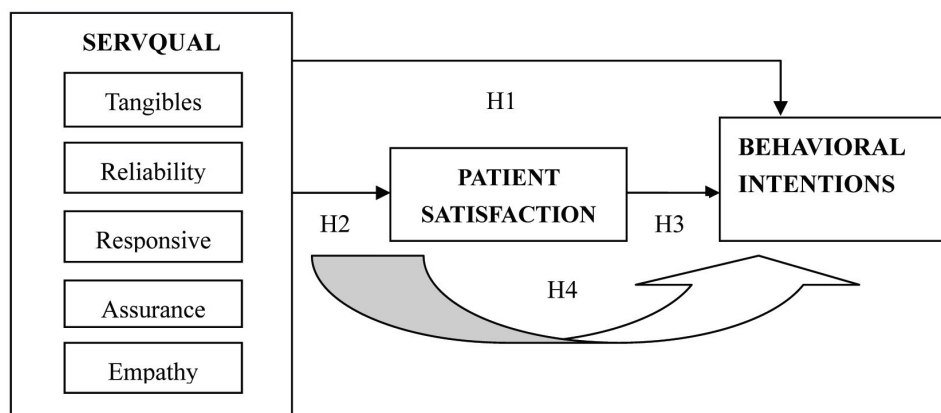


Figure 1. Proposed research model

Figure 1 shows the proposed research model and the hypotheses were developed as follow:

H1: Patient perception of healthcare quality has favorable effects on customer behavioral intentions.

H2: Patient perception of healthcare quality has positive effects on patient satisfaction.

H3: Patient satisfaction is significantly related to behavioral intentions.

H4: Patient satisfaction mediates the relationship between service quality perceptions and behavioral intentions.

H4 (a): Patient satisfaction mediates the relationship between tangibility and behavioral intentions.

H4 (b): Patient satisfaction mediates the relationship between responsiveness and behavioral intentions.

H4 (c): Patient satisfaction mediates the relationship between reliability and behavioral intentions.

H4 (d): Patient satisfaction mediates the relationship between assurance and behavioral intentions.

H4 (e): Patient satisfaction mediates the relationship between empathy and behavioral intentions.

### *3.2 Pilot Test*

To ensure that the survey questionnaires will provide good data and results, the researchers conducted a pilot test in October 2011. It is fundamental to pre-test the questionnaire with at least 10 respondents, to ensure that it is clear and not liable to any misinterpretation by potential respondents. Ordinarily, the pre-test sample size is small, varying from 15 to 30 respondents for the initial testing (Malhotra, 1999). For this study, a sample of 20 respondents was selected from the private hospital outpatients. The mean and standard deviation of each items used to measure the variables were calculated.

### *3.3 Sample Selection and Sample Size*

The study population consists of the outpatients of private healthcares in Malaysia. A sample size of 300 was chosen for this study, keeping in mind the average size of samples used by other researchers in similar studies such as Alrubaiee and Alkaa'ida, (2011) – 290 usable questionnaires, Badri et al. (2009) – 244 usable questionnaires, Ahmad Azmi and Norzalita (2008) – 210 usable questionnaires, Lim and Tang (2000) – 252 patients, and Lim et al. (1999) - 252 usable questionnaires. Convenience sampling technique was employed to select the target sample. Convenience sampling is deemed as appropriate because the purpose of this study is not to provide point and interval estimates of the variables, but to explore the relationships among the variables (Espinoza, 1999). The criterion of inclusion in this study is the local and foreign outpatients who have utilized the health care services at the private hospitals within the last 12 months. Questionnaires were distributed to adult patients over the age of 18 years in 2011.

### *3.4 Data Gathering Method and Tool*

The data needed for analysis was gathered by using a self-administered questionnaire. The questionnaire has 3 Sections. In Section A, 22 multi-item scales to measure service quality perceptions were used. In Section B, there are 7 questions to measure patient satisfaction and 6 questions to measure consumers' behavioral intentions. Questions were formatted using 7-points Likert scale such as '1' for 'Strongly Disagree' and '7' for 'Strongly Agree'. In Section C, there are questions about respondent's demographic features.

### *3.5 The Analysis of Data and Findings*

To investigate the reliability of the scales, Cronbach's alpha was computed. The reliability and average of the service quality scale, customer satisfaction and behavioral intentions used were calculated. When Cronbach's alpha coefficient is 0.60 or less, the results related to internal consistency are not satisfactory (Nunnally, 1987; Nunnally & Bernstein, 1994). However, lower values than 0.60 may be used as suggested by (Sekaran, 1996; Wright, 2007; Aspy et al., 2004). The acceptable reliability coefficient should be higher than 0.70. When it is higher, the reliability also increases due to the value of correlation coefficient between variables.

Further, regression analysis was run to test alternative hypotheses in this study. Following the suggestion from Baron and Kenny (1986), the relationship between independent and dependent variables was tested through 4 steps.

## **4. Results**

### *4.1 Respondent Profiles*

Table 1 shows the demographic characteristics of the respondents. Research respondents represent the private hospital outpatients from every state in Malaysia. Out of 273 respondents, 148 (54.2%) are female and 125 (45.8%) are male. About 70% of the respondents are Malay and Bumiputra, and the remaining are Chinese and Indian. Majority (70%) of the respondents fall under the age of 21 to 49 years old. 133 (48%) respondents earn a monthly income between RM2000 to RM4999 and 74 (27.1%) receive RM5000 and above. More than 70% of the respondents are married and working.

Table 1. Demographic characteristics (n=273)

Variables	Frequency	%	Variables	Frequency	%
<i>Gender</i>			<i>Citizenship/Nationality</i>		
Male	125	45.8	Malaysian	244	89.4
Female	148	54.2	Non-Malaysian	29	10.6
<i>Ethnicity</i>			<i>Marital Status</i>		
Malay	193	70.7	Single	70	25.6
Chinese	32	11.7	Married	198	72.5
Indian	17	6.2	Divorced	5	20.7
Others	31	11.4	Widowed	3	1.1
<i>Age</i>			<i>Qualification</i>		
20 years and below	9	3.3	Primary level	13	1.1
21-29	81	29.7	Secondary level	47	7.2
30-39	73	26.7	Diploma level	54	19.8
40-49	4	23.4	Bachelor level	95	34.8
50-59	39	14.3	Master level and above	74	27.1
60-69	4	1.5			
70 years and above	3	1.1			
<i>Household Income</i>			<i>Occupation</i>		
Below RM1000	24	8.8	Student	35	2.8
RM1000-RM1999	42	15.4	Government Employee	81	24.5
RM2000-RM2999	50	18.3	Private Employee	73	44.0
RM3000-RM3999	47	17.2	Housewife	64	2.6
RM4000-RM4999	36	13.2	Retiree	39	2.6
RM5000 and above	74	27.1	Military	4	7.7
			Self-employed	3	5.9
			Others	0	0.0
<b>Total</b>	<b>273</b>	<b>100.0</b>		<b>273</b>	<b>100.0</b>

#### 4.2 Pilot Test

The result of the pilot test indicates that most of the items used to measure the variables have a mean score of more than 5.0 and a standard deviation of above 0.7 (Refer Table 2).

Table 2. Mean and standard deviation (SD) of the items (n=20)

Item	Mean	SD
T1 Modern equipment.	5.75	0.79
T2 Physical facilities are visually appealing.	5.80	1.01
T3 Staff are neat in appearance.	5.75	1.07
T4 Materials related to outpatient services are visually appealing.	5.35	1.09
RP1 Hospital staff show a sincere interest in solving patient's problems.	5.35	1.35
RP2 Tells patients exactly when services are provided.	5.20	1.15
RP3 Gives prompt services to patients.	5.25	0.91
RP4 Hospital's staff always willing to help.	5.35	1.14
RP5 Staff are never too busy to respond to patients requests.	4.85	1.09
RL1 Provides services at the time it promise.	5.80	0.89
RL2 The staff is dependable in handling patients.	5.25	0.72
RL3 Prompt service without appointment.	5.35	0.88
RL4 Competent in providing accurate service.	5.05	0.89
A1 Medical staff that instill confidence in patients.	5.25	0.97
A2 Patients made to feel safe in their interaction with staff.	5.40	1.05
A3 Staff that are consistently courteous.	5.60	0.94
A4 Staff that are knowledgeable to answer patients questions.	5.30	0.92
E1 Giving patients personal attention.	5.40	0.88
E2 Staff that treat patients with warm and caring attitude.	5.20	0.83
E3 Staff that are understanding towards patients feelings of discomfort.	5.15	0.88
E4 The medical practice having patients best interest in heart.	4.90	0.72
E5 Operation hours that are convenient to patients.	5.20	1.20
CS1 I think that I did the right thing when I get the treatment from Malaysian private hospitals.	5.25	1.29
CS2 I believe that getting treatment from the Malaysian private hospitals is usually a very satisfying experience.	5.30	1.22
CS3 My choice to get treatment from the Malaysian private hospitals has been a wise one.	5.25	1.37
CS4 I am very satisfied with my decision to get treatment from Malaysian private hospitals.	5.30	1.26
CS5 Malaysian private hospital does a good job of satisfying my needs.	5.40	1.19
CS6 The overall feelings about the health care services in Malaysian private hospitals are better than I expected.	4.85	1.31
CS7 Overall, I am satisfied with the services provided by the Malaysian private hospitals.	5.45	1.19
BI I am willing to recommend the Malaysian private hospitals to others who seek my advice.	4.95	1.54
B2 I will encourage my friends and relatives to go to the Malaysian private hospitals.	5.00	1.49
B3 If I need medical service in the future, I will consider the Malaysian private hospitals as my first choice.	4.70	1.69
B4 If I need medical services in the future, I will go to the Malaysian private hospitals more frequently.	4.60	1.67
B5 If I feel sick in the future, I will go to the Malaysian private hospitals less frequently.	5.20	1.51
B6 I complain to others if I experience problems with the services at the Malaysian private hospitals.		

Notes: Likert 7-point scales was used.

#### 4.3 Reliability Analysis and Descriptive Statistics

Table 3. Descriptive and reliability analysis results (n=273)

Variables	No.of Items	Mean	SD	Coefficient alpha ( $\alpha$ )
Tangibles	4	5.85	0.77	0.81
Reliability	4	5.60	0.89	0.86
Responsiveness	5	5.46	0.94	0.89
Assurance	4	5.56	0.96	0.89
Empathy	5	5.52		0.91
<b>Overall Service Quality</b>	22			<b>0.94</b>
Behavioral Intentions	6	5.63	1.01	0.75
Patient Satisfaction	7	5.65	7.02	<b>0.96</b>

Note: Likert 7-point scales was used

The alpha values were calculated (see Table 3) to assess the internal consistency reliabilities of the scales. The alpha values for quality dimensions are as follows: tangibles ( $\alpha = 0.81$ ), reliability ( $\alpha = 0.86$ ), responsiveness ( $\alpha = 0.88$ ), assurance ( $\alpha = 0.89$ ), and empathy ( $\alpha = 0.91$ ). The overall service quality score is very high ( $\alpha = 0.94$ ). For behavioral intentions scales, the results indicate acceptable values ( $\alpha = 0.75$ ). The alpha value for patient satisfaction is very high ( $\alpha = 0.96$ ). In summary, the coefficient alpha values for service quality, patient satisfaction and behavioral intentions are above 0.70. Thus, the item scales are highly reliable (Nunnally & Bernstein, 1994; Sekaran, 1996).

The mean scores for all dimensions are as follows: tangibles (5.85), reliability (5.60), responsiveness 5.46), assurance (5.56), and empathy (5.52). Patient satisfaction and behavioral intentions show the mean score of 5.65 and 5.63 respectively. All constructs have a standard deviation above 0.70, which is considered as good.

#### 4.4 Test of Hypotheses

The regression tests were conducted as suggested by Baron and Kenny (1986), by running four steps of analysis separately (refer to Table 4 to Table 7).

##### 4.4.1 Hypotheses H1-H3

The results of regression analyses support to H1, H2 and H3 (see Table 4, 5 and 6).

H1: Patient perception of healthcare quality has favorable effects on customer behavioral intentions (Table 4)

H2: Patient perception of healthcare quality has positive effects on patient satisfaction (Table 5)

H3: Patient satisfaction is significantly related to behavioral intentions (Table 6)

Table 4. Step 1- regression analysis of service quality dimensions with behavioral intentions

	B	$\beta$	t-value	p-value	R	R <sup>2</sup>	F-value	F-sig
<i>Constant</i>	4.31		2.14	0.03	0.69	0.47	46.6	<b>0.00</b>
1. Tangibles	0.23	0.12	1.93	<b>0.05</b>				
2. Reliability	0.02	0.01	0.19	0.85				
3. Responsiveness	0.06	0.05	0.60	0.55				
4. Assurance	0.55	0.35	3.68	<b>0.00</b>				
5. Empathy	0.26	0.22	2.49	<b>0.01</b>				
<i>Constant</i>	5.82		12.93	0.00	0.47	<b>0.22</b>	77.21	<b>0.00</b>
Overall Service Quality	3.29	<b>0.47</b>	8.79	<b>0.00</b>				

Note: Significant at the 0.05 level



Table 5. Step 2 - regression analysis of service quality with satisfaction

	B	$\beta$	t-value	p-value	R	R <sup>2</sup>	F-value	F-sig
<i>Constant</i>	1.58		0.74	2.01	0.77	0.60	79.53	<b>0.00</b>
1. Tangibles	0.25	0.11	3.35	0.46				
2. Reliability	0.44	0.23	0.77	<b>0.04</b>				
3. Responsiveness	0.09	0.06	4.30	<b>0.00</b>				
4. Assurance	0.67	0.35		0.44				
5. Empathy	0.18	0.12	1.60	0.11				
<i>Constant</i>	21.57		12.93	0.00	0.56	0.31	121.67	<b>0.00</b>
Overall Service Quality	4.78	0.56	11.03	<b>0.00</b>				

Note: Significant is at 0.05 level

Table 6. Step 3 - regression analysis of satisfaction with behavioral intentions

	B	$\beta$	t-value	p-value	R	R <sup>2</sup>	F-value	F-sig
<i>Constant</i>	7.86		5.70	0.00	0.72	0.52	291.24	<b>0.00</b>
Satisfaction	0.59	0.72	17.07	<b>0.00</b>				

Note: Significant at the 0.05 level

The findings are consistent with other research that show service quality is an antecedent to behavioral intentions (Li et al., 2010; Wu et al., 2008; Boshoff & Gray, 2004; Bou-Llusar et al., 2001; O'Connor et al., 2000; Zeithaml et al., 1996; Gooding, 1995; Parasuraman et al., 1985, 1988). Furthermore, perceived health care quality has a positive influence on patient satisfaction (Badri et al., 2009; Navid et al., 2010; Mpinganjira, 2011). Satisfaction meanwhile positively affects patient intentional behavior (Bendall-Lyon & Powers, 2004; Otani & Harris, 2004; Elluech, 2008).

#### 4.4.2 Hypotheses 4 (testing the mediating role of patient satisfaction)

This study found that satisfaction partially mediates the service quality-behavioral intentions relationship. From Table 4, tangible ( $\beta = 0.12$ ,  $p = 0.05$ ), assurance ( $\beta = 0.35$ ,  $p = 0.00$ ) and empathy ( $\beta = 0.22$ ,  $p = 0.01$ ) dimensions have a significant positive effect on behavioral intention. From Table 5, tangible ( $\beta = 0.11$ ,  $p = 0.04$ ), reliability ( $\beta = 0.23$ ,  $p = 0.00$ ) and assurance ( $\beta = 0.35$ ,  $p = 0.00$ ) dimensions have a significant positive effect on satisfaction. In Table 7, satisfaction fully mediates the relationship between tangible ( $\beta = 0.07$ ,  $p = 0.25$ ), assurance ( $\beta = 0.17$ ,  $p = 0.06$ ) and empathy ( $\beta = 0.15$ ,  $p = 0.06$ ) and behavioral intentions. Thus, H4(a), H4(d) and H4(e) are supported. In contrast, satisfaction fails to mediate the relationship between reliability and responsiveness on behavioral intentions. Thus, H4(b) and H4(c) are rejected.

Table 7. Step 4 - mediating effect of satisfaction on the relationship between service quality perceptions and behavioral intentions

	B	$\beta$	t-value	p-value	R	R <sup>2</sup>	F-value	F-sig
<i>Constant</i>	3.71		2.04	0.04	0.75	0.57	57.81	<b>0.00</b>
1. Tangibles	0.12	0.07	1.15	0.25				
2. Reliability	0.16	0.10	-1.43	0.15				
3. Responsiveness	0.03	0.03	0.34	0.74				
4. Assurance	0.27	0.17	1.98	0.06				
5. Empathy	0.18	0.15	1.96	0.06				
6. Satisfaction	0.41	0.50	7.83	<b>0.00</b>				
<i>Constant</i>	7.01		4.88	0.00	0.73	<b>0.53</b>	149.3	<b>0.00</b>
Overall Service Quality	0.71	<b>0.10</b>	2.02	0.06				
Satisfaction	0.54	0.66	13.14	<b>0.00</b>				

Note: Significant at the 0.05 level

Overall, service quality has a significant effect on behavioral intentions ( $\beta = 0.47$ ,  $p = 0.00$ ) – see Table 4. In Table 6, patient satisfaction has a direct positive relationship with behavioral intentions ( $\beta = 0.72$ ,  $p = 0.00$ ). When satisfaction is considered as a mediating variable as shown in Table 7, it is suggested that satisfaction

partially mediates the relationship between service quality and behavioral intention ( $\beta = 0.10$ ,  $p = 0.06$ ). The  $R^2$  value increased from 0.22 (Table 4) to 0.53 (Table 7) and the  $\beta$  value decreased from 0.47 (Table 4) to 0.10 (Table 7). Thus, H4 is partially supported. According to Hair, Black, Babin and Anderson (2010), the coefficient of determination ( $R^2$ ) measures the proportion of the variance of the dependent variable as a result of the changes in the predictor variables. The higher the value of  $R^2$ , the greater the explanatory power of the predictor variables will be. This finding is consistent with Mpingajira (2008) who indicated that patients overall satisfaction is a good mediating variable between service quality perceptions and positive behavioral intentions. The result offers support to other researches such as (Dagger & Sweeney, 2007; Brady & Robertson, 2001; Anderson et al., 1994).

## 5. Discussion

The study indicates that service quality dimensions affect both satisfaction and behavioral intentions. Tangibility, reliability and assurance are the most powerful predictors of customer satisfaction. On the other hand, tangibility, empathy, and assurance dimensions are the most powerful predictors of behavioral intentions. In addition, satisfaction mediates the relationship between tangibility, empathy and assurance on behavioral intentions. These findings explain that if patients are satisfied with the quality of the service received, they will have high intentions to go again to the service provider in the future.

The physical service aspects such as appearance of employees, equipments and facilities are classified as tangibles. This service quality dimension affects both satisfaction and intentions. The effect of tangibles on satisfaction ( $B = 0.25$ ,  $t = 2.01$ ) is stronger as compared to the effect of tangibles on behavioral intentions ( $B = 0.23$ ,  $t = 1.93$ ). As such, the service providers should put in serious efforts to ensure that the hospital has modern equipments, physical facilities and materials that are visually appealing to both inpatients and outpatients. In addition, the hospital management must emphasis on the importance of neat appearance during working hours to the staff. From time to time, the hospital should invest on equipments, physical facilities and materials to ensure that those tangible factors are sufficient in terms of quantity.

Assurance refers to employees' knowledge and courtesy, ability to inspire trust, confidence, and security. In this study, the effect of assurance on satisfaction ( $B = 0.67$ ,  $t = 4.30$ ) is stronger as compared to the effect of assurance on behavioral intentions ( $B = 0.55$ ,  $t = 3.68$ ). Because of the high degree of perceived risk stemming from customers' inability to evaluate outcomes of services, assurance is a vital marketing strategy. Managers can use this strategy to get and keep customers for a lifelong relationship. The management can help employees to help customers by improving their skills through continuous training and facilitation of organizational learning. Improving the communication skills of front-line employees, nurses, and complaints handling officers is important since these employees interact with the customers. Not only that, the communication between the customer interface personnel and the "behind the scene" employees should be improved to eliminate any difference between specified delivery standards and the service provider's actual performance on these standards. When employees are well equipped to serve customers satisfactorily in an environment that promotes sacrifice, reliable services will inevitably follow.

There are several suggestions relating to building the empathy dimension, namely individualizing the attention given to the needs of customers, providing convenient services, etc. This may require access to detail information about target markets, their varying needs and expectations, and putting oneself in the position of the customers (empathizing) to understand the best way to help them. Such effort often requires market research information, and probably going the extra mile for the sake of the customer. The outcome however is worth the effort, as it will give managers reliable information to design customized services and add value to the mundane mass-produced healthcare services.

Reliability refers to accurate, dependable and consistent performance of the service (service outcome). Reliability is considered as the second important dimension in determining satisfaction. Patients really want the hospital to give services at the time it promises to do so. In addition, patients also want the hospital staff to be able to handle patients and competent in providing accurate services. Due to that, all staff should manage the time properly and be able to provide excellent services to customers.

Responsiveness is the willingness to help customers and provide prompt service. Responsiveness has no significant influence on behavioral intentions and satisfaction. This might happen because all hospitals have an emergency unit and all emergency cases are given the top priority for treatment.

As a summary, knowledge about the patient perception towards health care quality is one of the most important steps towards introducing reforms in the health care sector. Identification of areas that require immediate improvement in private hospitals provides valuable guidance to the policy makers who can devise suitable

strategies to make these hospitals more sensitive and responsible to the needs of the local patients and health tourists. This can lead to restoration of faith in the private hospitals and subsequently contribute to an increase in a country's revenue.

## 6. Limitations

It is notable however that this research uses intention (in line with Fishbein & Ajzen, 1975; Ajzen & Fishbein 1980) as a measure of behavior thus creating the need for further investigation of this issue using actual data. A longitudinal future research in this area is needed to unveil the link between service quality dimensions and actual behavior of health care patients in Malaysia.

From the findings on the explanatory power of perceived service quality on overall patient satisfaction, it can be concluded that although service quality is an important factor in influencing patient satisfaction ( $R^2 = 0.60$ ), there are other factors that may contribute in enhancing overall customer satisfaction. Future studies should try to include more factors than service quality such as perceived value, cost and risk, and hospital image. The findings of these future studies will help in pushing back the frontier of knowledge about the influence of perceived quality on consumer behavior.

The current study is limited to measuring the perceived quality of health care services in the private hospitals only. Future study should embark on measuring and comparing the perceived quality of health care services in both private and public hospitals in Malaysia. Furthermore a study on the perceptions of the patients' family members and friends may contribute to the body of knowledge.

Finally, the current research has provided strong support for the ability of perceived service quality to predict behavioral intentions. Perceived service quality dimensions such as tangibles, assurance, and empathy are predictors to behavioral intentions. Responsiveness and reliability have no influence on behavioral intentions. However, tangibles, reliability and assurance strongly predict patient satisfaction. The strengths of the relationship between satisfaction and behavioral intentions is stronger compared to the service quality-intentions relationship. Nevertheless, the research in this area is not conclusive. Further investigation is required (in different industries and nations) using adjusted versions of SERVQUAL (Ekincy & Riley, 1999) and larger samples, in order to draw more definite conclusions.

## 7. Conclusion

This research could guide researchers to better understand how quality, satisfaction and intentional behaviors interact in health care industry. Hospital managers can use the current findings to develop health care services marketing strategies that will enhance patient satisfaction and to encourage positive behavioral intentions.

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