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Measuring the Effect of Healthcare Service Quality Dimensions on Patient's Satisfaction in The Algerian Private Sector

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Abstract

There is a gap in marketing literature related to impact of service quality dimensions on perceived service quality and patient satisfaction, in the private healthcare industry. The healthcare system is responsible for improving the general population's health in a country. To differentiate from competitors, the quality of service is mainly considered a critical success factor for hospitals (Azmit et al., 2017). Therefore, competition is essential for improving quality and patient satisfaction in healthcare institutions (Kitapci et al., 2014).

This article aims to determine the relationship between health service quality dimensions and patient satisfaction in the healthcare sector. Specifically, the paper seeks to find out the most critical dimensions of service quality, which is used to evaluate the characteristics of private healthcare service quality as perceived by patients. A field study was carried out on a sample of 208 patients in Tlemcen city in Algeria. The questionnaire developed for this study was based on a SERVQUAL model specifically, based on Parasuraman, Zeithaml, and Berry, (1985) variables that identified the influence of five dimensions (i.e., reliability, tangibility, assurance, responsibility, and empathy) in healthcare service environments on patient satisfaction. The results have found after the application of structural equation modelling that: reliability, tangibility, assurance, responsibility was more significant in contributing to patient satisfaction, while empathy was not significant. This indicates that patients tend to have a positive perception about the health service if they consider the perceived quality of the health service to be credible, reliable, tangible, and responsive, even though they may feel that the health provider does not empathize with them. Hence, healthcare industry practitioners can consider this model as an instrument to assess healthcare and help improve their service quality. Therefore, service provider managers can use this instrument to assess private hospital service quality in Algeria and other African countries.

Keywords: SERVQUAL, healthcare industry, service quality, patient satisfaction.

JEL Classification: I10, I13, I18.

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Introduction

There has been unprecedented growth and development in the service industries (Ahmed et al., 2017). One of the primary goals of service marketers is to maximize consumers' perceptions of the service encounter and the firm-consumer relationship (Hamer, 2015). To this end, research in services marketing has examined how consumers evaluate service quality (Hamer, 2015). In service sectors, emphasis on quality of services is rising, but concentration on healthcare service quality is incredible. The healthcare system is responsible for improving the general population's health in a country. In the healthcare industry, all hospitals provide the same type of service, but they do not offer the same quality of service (3) (Zaim et al., 2010). Therefore, Service quality has received much attention from healthcare organizations due to increasing competition (D'Cunha & Suresh, 2015). To differentiate from competitors, the quality of service is mainly considered a critical success factor for hospitals (Azmit et al., 2017). Therefore, competition is essential for improving quality and patient satisfaction in healthcare institutions (Kitapci et al., 2014). For most corporate hospitals, superior quality is at the core of their business strategy (Zaim et al., 2010). To achieve service excellence, hospitals must strive for zero defections, retaining every customer that the company can profitably serve. Zero defection requires continuous efforts to improve the quality of the service delivery system (4) (Zaim et al., 2010). Health organizations' challenge is to ensure a high level of service the customer wants and expects every time perfectly (D'Cunha & Suresh, 2015).

Even though the role of the private healthcare sector was increasingly important for the population in Algeria, there has been limited monitoring of private hospitals. This led to the provision of low-quality healthcare services that failed to meet the expectations of patients (Al-Kuhlani, 2000; MoPHP, 2001; Anbori et al., 2010). One of the goals of any private healthcare service provider is to increase patient satisfaction by providing quality health services. This is especially true for private sector providers in Algeria. So the identification and measurement of quality dimensions are necessary for patient satisfaction and continuous improvement (D'Cunha & Suresh, 2015).

To our knowledge, no study in Algeria linked patient satisfaction to perceived service quality as assessed by SERVQUAL. Therefore, the main objective of this study is to measure patients' perceptions of the quality of healthcare services provided in private hospitals using the five dimensions of the SERVQUAL instrument.

The paper is organized as follows: after a brief introduction, the section 2 develop a consiste literature review. The presentation of service quality dimensions and patient satisfaction, the research hypotheses are proposed, and the research methodology is explained. Then, the analysis of the collected data and testing the hypotheses are complemented by discussing the main results in the complaining literature in the third section. Finally, the conclusion of this article ends with an overview of results.

Literature review

Early studies during the 1980s focused on determining what service quality meant to customers and developing strategies to meet customer expectations (Parasuraman et al., 1985). The early pioneers of services marketing in Europe, especially the Nordic School, argued that service quality consists of two or three underlying dimensions.

Lehtinen & Lehtinen (1985) referred to physical and interactive quality, while Gronroos (1984) identified a technical, functional, and image as a third dimension. In later years, Parasuraman et al. (1988) published empirical evidence from five service industries that suggested five dimensions more appropriately capture the perceived service quality construct (Chowdhary & Prakash, 2007). In addition, several prior types of research indicate a positive relationship between dimension service quality and patient satisfaction with hospital care and a willingness to return to the hospital (e.g., Camilleri & O'Callaghan, 1998; Mostafa, 2005; Wu et al., 2008; Chaniotakis & Lymperopoulos, 2009; Naidu et al., 2009; Raposo et al., 2009; Anbori et al., 2010; Butt & De Run, 2010; Yesilada & Direktor, 2010; Al Khattab, S & Aborumman, 2011; Aghamolaei et al., 2014; Kitapci et al., 2014; D'Cunha & Suresh, 2015; Lee, 2016; RahoKondasani, 2016; Ahmed et al., 2017; Azmit et, 2017; Lee & Kim, 2017). Though there are relationships between the concepts in question, there is a gap in marketing

literature related to the impact of service quality dimensions on perceived service quality and patient satisfaction in the private healthcare industry. In this context, the purposes of this study are to investigate the effect of service quality dimensions on perceived service quality and patient satisfaction and to search for a significant relationship between SERVQUAL dimension quality and patient satisfaction in the private healthcare industry. Specifically, based on Parasuraman et al. (1985) SERVQUAL variables, we tried to identify the impacts of each variable on perceived services quality and satisfaction for patients in Algeria.

Accordingly, the Ministry of Public Health and Population (MoPHP) realized that the public sector alone is no longer capable of providing necessary health care for the people of Algeria. Instead, it has encouraged the development and expansion of the private healthcare sector to complement the existing public sector (Anbori et al., 2010). Moreover, according to (MoPHP) the private sector was allowed to play a wider role in providing medical services. As a result, there has been a remarkable growth of private hospitals, pharmacies, clinics, and diagnostic centers in Algeria during the 2000s. According to the Annual Health Statistical Report (2000–2015), there were concerning the number of special health structures counted in 2015, 237 surgical clinics, 33 medical clinics, 148 blood-purification centers, 18 reproductive assistance centers, 380 healthcare units, 8,352 specialized counseling clinics, 6,910 public consultation clinics and 6,144 Dental surgery clinic and 9.962 pharmaceutical agencies (Anbori et al., 2010).

According to the studies and discussions mentioned above, and to find out the factors that affect perceived service quality and customer satisfaction in healthcare, the following main problem raises:

How do perceived service quality and patient satisfaction in healthcare?

The questions derived from the main problem are the following:

1) Is there an impact of dimension quality on perceived service quality in the healthcare sector?

2) How does perceived service quality affect patient satisfaction?

Methodology, Research Hypothesis and Conceptual Model

Previously, several researchers have developed alternate concepts for service quality. For example, Bitner & Hubbert (1994) defined service quality as "the consumer's overall impression of the relative inferiority or superiority of the organization and its services" (p. 77) (lee et al., 2011). Another study mentioned that service quality is divided into two main components: functional and technical quality (Gronroos, 1984; Azmit et al., 2017). The Nordic school (Grönroos, 1984) explains the service quality on two dimensions as functional and technical quality (Kitapci et al., 2014). Parasuraman et al. (1985) defined perceived service quality as "a global judgment, or attitude relating to the superiority of a service" (Ahmed et al., 2017). They proposed a gaps model and defined service quality as the difference between expectations and performance from the customers' perspective, namely "SERVQUAL." SERVQUAL is a multi-item scale for assessing customers' perceptions of service quality (To et al., 2013). The measure consists of 22 items and covers five major dimensions common and relevant to the four service categories included in their study (To et al., 2013). The five major dimensions are as follows: (1) tangibles (Physical facilities, equipment, and appearance of personnel) (2) reliability (Ability to perform the promised service dependably and accurately), (3) responsiveness, which describes the willingness to help customers and providing prompt services (Azmit et al., 2017), (4) assurance, which describes the knowledge and courtesy of employees and their ability to inspire trust and confidence, and (5) empathy, which describes caring and the individualized attention provided by the firm to its customers (To et al., 2013; Kitapci et al., 2014). Since 1997, healthcare analysts have applied the SERVQUAL model to measure patient satisfaction and loyalty. SERVQUAL helps healthcare service providers to identify the gaps between service delivery and patient expectations (Al-Borie & Sheikh Damanhouri, 2013; Zarei et al., 2015; Ahmed et al., 2017).

Quality care can be defined as the features and characteristics that can satisfy a given need (Azmit et al., 2017). In the healthcare setting, quality is more difficult to define than other services such as those found within finance or tourism mainly because it is the customer himself/herself and the quality of his/her life that is being

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evaluated (Al Khattab & Aborumman, 2011). In addition, referred to HCSQ as "doing the right thing and making continuous improvements, obtaining the best possible clinical outcome, satisfying all customers, retaining talented staff, and maintaining sound financial performance. However, healthcare service quality is difficult to define and measure depending on the type of treatment, perception of patients, and interactions between patients and providers, including characteristics of care service and ethical culture of the hospital (Lee & Kim, 2017).

Customer satisfaction has been recognized in marketing thought and practices as an important goal of all business activities (Wang & Lo, 2002; Kitapci et al., 2014). According to Ismail et al. (2016), Customer satisfaction is broadly defined as a difference between customers' expectations and experience performance after using a service and/or product at a certain period (Chowdhary & Prakash, 2007; Mosahab et al. 2010; Azman et al. 2016). Satisfied customers are likely to exhibit good behavioral intentions, which are beneficial to the healthcare provider's long-term success (Naidu, 2009). Specifically, patient satisfaction evaluates distinct healthcare dimensions (Linder-Pelz, 1982; Naidu, 2009). For some studies, patient satisfaction results from the gap between expected and perceived service characteristics (Fitzpatrick & Hopkins, 1983; Raposo et al., 2009). For Woodside et al. (1989) patient satisfaction is a special attitude. In other words, it is a post-purchase phenomenon that reflects the extent to which a patient liked or disliked the service after having experienced it (Raposo et al., 2009).

For instance, several studies have found that service quality can influence the level of customer satisfaction (Lee et al., 2000; Murray & Howat, 2002; Muslim & Isa, 2005; Azmit et al., 2017), and service quality positively influence customer satisfaction (Kuo et al., 2009; Kitapci et al., 2014). Patient satisfaction is widely used in the healthcare sector to determine service quality (Fenton et al., 2012; Shabbir & Malik, 2016; Ahmed et al., 2017). It may be considered a satisfaction if one of the desired outcomes of care and the patient satisfaction information should be indispensable to quality assessments for designing and managing healthcare (Turner & Pol, 1995; Naidu, 2009). For example, Anbori et al. (2010) show that empathy and assurance dimensions, mainly represent word-of-mouth communication, strongly influenced patients' willingness to return to the hospital (Kitapci et al., 2014). Leiter et al. (1998) conducted an empirical study in Canadian hospitals (Ahmed et al., 2017). They observed nurses, doctors, and information significantly influence patient satisfaction. Another study, conducted by Mostafa (2005), which tested the dimensionality of the SERVQUAL instrument in Egypt's hospitals, indicates that the three factors-based solutions are inconsistent with the five elements associated with the SERVQUAL model (Azmit et al., 2017). Regarding specific health-service research, Kondasani & Panda (2015) developed and empirically tested a six-dimensional model of patient satisfaction with customer loyalty in Indian hospital services: Reliability, Physical Environment, Responsiveness, Privacy Safety, Communication & Customer Friendly Staff. The result of the author's empirical study indicated that the six dimensions explained 59% of the variation of patient satisfaction and customer loyalty and that the dimension of "physical environment" had the greatest impact on satisfaction (RahoKondasani, 2016). From the perspectives of developing countries, Andaleeb (2001) studied service quality perceptions and patient satisfaction in Bangladesh. He measured patient satisfaction using five dimensions: Responsiveness, Assurance, communication, discipline, and baksheesh (service tips). The results showed that all five dimensions significantly affect patients' satisfaction (Ahmed et al., 2017). Zaim et al. (2010) examined the applicability of service quality. They found that tangibility, reliability, and Empathy are important for customer satisfaction, but Mengi (2009) found that Responsiveness and Assurance are more important (Lau et al., 2013). On the other hand, a study conducted by Tucker & Adams (2001) found that patient satisfaction is predicted by factors relating to caring, Empathy, reliability, and Responsiveness (Naidu, 2009; Ben Khalifa et al., 2021 a, b).

Based on the above studies, we propose the following hypothesis:

We followed a hypothetical-constructive approach to construct an explanatory model of patient satisfaction through this study. The theoretical model of our research (see figure.1) consists of five independent variables: 1) Reliability (REL); 2) Tangibles (TANG); 3) Responsiveness (RESP); 4) Assurance (ASSU); and 5) empathy (EMP) of health care service quality. They are supposed to affect patients' satisfaction.

H_1: Reliability has a significantly positive influence on patient satisfaction.

H_2: Tangibles have a significantly positive influence on patient satisfaction.

H_3: Responsiveness has a significantly positive influence on patient satisfaction.

H_4: Assurance has a significantly positive influence on patient satisfaction.

H_5: Empathy has a significantly positive influence on patient satisfaction.

We followed a hypothetical-constructive approach to construct an explanatory model of patient satisfaction through this study. The theoretical model of our research (see figure.1) consists of five independent variables: 1) Reliability (REL); 2) Tangibles (TANG); 3) Responsiveness (RESP); 4) Assurance (ASSU); and 5) empathy (EMP) of health care service quality. They are supposed to affect patients' satisfaction (Figure1).

The analytical procedures are as follows. First, Reliability analysis and exploratory factor analysis were conducted to establish the validity of the measurement scale using SPSS.25. Second, a descriptive study was conducted to examine the difference in healthcare service quality perception and patient satisfaction. Third, structural equations modelling was undertaken to investigate five service quality factors (i.e., Tangibles, Reliability, Responsiveness, Assurance, and Empathy) on patient satisfaction using Statistica.08.

The measures were developed via successive stages of scale development. First, all items were measured on 7-point Likert-type scales (1= very disagree strongly and 7 = very agree strongly). Instead of limiting the measures of service quality to the theoretical structure suggested by the SERVQUAL framework, the development of a service quality scale was based on a focus group of both patients and health care providers to generate insights into how Algerian patients viewed the health care services they received. There were five independent variables (tangibles, reliability, Responsiveness, Assurance, and Empathy), and one dependent variable (Satisfaction). The measurement of the different variables of this study was adopted and revised based on the items used in the survey carried out by prior studies such as Grantors (1984), Parasuraman et al. (1985, 1988). We collected data using a two-part self-administered questionnaire. Section A measured five dimension service quality dimensions: tangibles (9 items), reliability (6 items), Responsiveness (5 items), Assurance (6 items), and Empathy (5 items). Section B connected Algerian patient satisfaction (9 items). Both A and B had 40 items and used a seven-point Likert scale. Section C pertained to respondent demographics (age, gender, and income).

Data Analysis and Results

The goal of the survey was to capture patients' satisfaction with Healthcare services. Due to resource and time constraints, one of the most famous private hospitals in Tlemcen city (western Algeria) was chosen. A survey is conducted to examine the hypotheses in this study. Four hundred and thirty questionnaires were distributed to respondents who experienced Algerian private healthcare service quality. Two hundred and eight responses were received (90.43% response rate). Table.1 presents the description of the respondents, including demographic data such as gender, age, and income. Our sample comprised 220 patients, of whom 89 (57.21%) were male and 119 female (42.78%). In terms of age, nearly 7% of participants were less than 24 years, 19.23% between 22 and 29 years, 31.73% between 30 and 39 years, 33.65% between 40 and 59 years, and 8.65% more than 60 years.

Exploratory factor analysis with Varimax rotation examined the structure of factors for perceived service quality and patient satisfaction. The result from Table 2 presents five factors underlying the 29 service quality items adopted from the SERVQUAL model of Parasuraman et al. (1992) and 9 items of patient satisfaction adopted from the disconfirmation model of Oliver (1980). The result, therefore, demonstrates the convergent validity of the measurement items because all indicators have significant loadings on the respective latent constructs ($T>1.96$, $p< 0.05$) and more than 0.3 with the values varying from 0.327 to 0.876, thus, indicating that the measurement has sufficient convergent validity.

Table 3 provides measures of reliability, with inter-trait correlations. Cronbach's alpha was calculated to measure the internal consistency of the obtained factors (Cronbach, 1951; Nunnally & Bernstein, 1994; lee et al., 2011). If Cronbach's alpha is greater than 0.7, the item scales are regarded as reliable (Hair et al., 2010, Ahmed, 2017). Table 3 illustrates Cronbach's alpha for five dimensions, ranging from 0.74 to 0.81, exceeding the 0.70 requirements. The reliability coefficients for each of the five dimensions of the SERVQUAL scale were .78 (Tangibles), .76 (Reliability), .80 (Responsiveness), .81 (Assurance), and .74 (Empathy). Additionally, the alpha Cronbach's for the five-items perceived service quality scale; five trust scale and nine-item satisfaction scale were .83; .85, and .93, respectively. Thus, all constructs in our research model demonstrate good reliability because the construct displayed excellent reliability of scales (greater than 0.74). In addition, the value of mean score for all variables was greater than 4 ($\bar{x}$>4) and standard deviation lower than 1.5 (SD<1.5) indicates non-dispersion. After that, exploratory factor analysis is conducted with varimax rotations to detect the significance of the hypothesized factors.

However, Hair et al. (2010) say that factor analysis can be performed when KMO and Bartlett's Test is significant (p<.05) (Ahmed, 2017). The KMO and Bartlett's statistics show that the data set is suitable for factor analysis. As shown in Table 3, the KMO (Kaiser–Meyer–Olkin) values for each of the 38 survey items exceeded or equal to 0.75, indicating that research data were suitable for principal component analysis. A mean was computed for the items that remained after a reliability test for each dimension or construct. Then, the mean was used for the value for each dimension or constructed addition. A confirmatory factor analysis was conducted to determine that the variables used are separate, using the varimax procedure for interpretable factors. The results of these factors accounted for between 51.87% and 63.56% of the cumulative variance (explained variance), showing that the percentage of these factors exceeds the recommended level of 0.50 (Fornell & Larcker, 1981; Wu, 2013) for the different variables (except Empathy =49.16%). All items from the SERVQUAL model in each relationship structure were included in a factor analysis to determine whether the majority of the variance could be accounted for by one general factor, more than 50 percent of the variance of all measure. The result is inconsistent with five perceived service quality dimensions proposed by Parasuraman et al. (1988) and the patient satisfaction dimension proposed by Oliver (1980). However, this study found only five key components of perceived service quality for the Algerian healthcare industry. In conclusion, the results indicated that the measurement model achieved adequate reliability, convergent validity, and discriminant validity.

Statistica.8.0 is employed to assess the structural model. The most common SEM estimation procedure is Generalized Least Square to Maximum likelihood (GLS-ML). This method is suitable for this study because this research aims to test the causal relationship between service quality dimensions and patient satisfaction in the healthcare industry. Therefore, the research model fit is acceptable. Results of the hypothesis testing are illustrated in Figure 2. Firstly to test the hypothesis, the structural model was run. The model's goodness-of-fit was measured using: Ch2 /df; GFI. Joreskog; PGI; APGI, and CFI. The results indicated an average fit between the measurement model and the data since all model-fit measures surpassed the recommended value. Secondly, Figure.2 shows the structural and the testing results. This figure shows that the path coefficients by estimation procedure GLS-ML for the hypothesized links (βi) were tested. It is significant (except for H.5), with the values varying from 0.167 to 0.498.

Patient satisfaction value is positively associated to Reliability (β1 = 0,269, p < 0.05), Tangibles (β2 = 0,271, p < 0.05), Responsiveness (β3 = 0,167, p <0.05), and Assurance (β4 = 0,498, p <0.05). However, satisfaction value is not associated with Empathy (β5 = -0,124, p >0.05). Thus, H1, H2, H3, and H4 are supported, and H5 is not supported. Overall, the results showed that our model provides a useful framework for measuring patients' satisfaction with healthcare service quality. The analysis findings revealed that service quality dimensions display a significant relationship to patient satisfaction. This is consistent with the previous empirical research, which indicated that the higher the perceived service quality, the greater the patients' satisfaction in private healthcare services.

To analyze the hypotheses, we conducted the testing of the path coefficients of the structural model. The results of the path analysis are presented in Table.4. However, the specific dimensions of service quality used in this

study (Parasuraman et al., 1988) showed different impacts on patient satisfaction. As shown in Table 4, The P-value in the T (student) test between the dimension of reliability and satisfaction is 0.000, less than 5%, which means that there is a relationship between the two variables and the coefficient of regression ($\beta.1 = 0.269$, $p < 0.05$), shows a positive influence on patient's satisfaction, which means that a grow in reliability dimension occurs a lift up in the patient's level of satisfaction, according to the quality of private hospital services.

Data demonstrate that patients are quite satisfied with the services provided by the clinic as promised and the security level of the healthcare services. Patients are confident that the clinic can realize the promised services to consume services with trust. This result is supported by Arasli et al. (2005), Tucker & Adams (2001), and Kondasani & Panda (2015), thus supporting H1. Similarly, we followed the same procedure for tangibles and their tangible dimension and their relation to the patient's satisfaction. The T student test's significance (P-value) is $T<0.05$, which shows that patient satisfaction depends on service quality tangibles. Patients satisfaction was found to be positively affected ($\beta.2 = 0.271$, $p <0.05$) by tangibles. Tangibles refer to the appearance of facilities, equipment, and written materials (Zeithaml et al., 2006). Current service marketing literature highlights the importance of tangibles (e.g., providing comfortable, clean, and readily accessible facilities and equipment) in the process of service delivery and consumption evaluation (Bitner, 1992; Ko & Pastore, 2005; Snipes et al., 2006; Zeithaml et al., 2006; Kim & Lough, 2007). Zaim (2010) and Siddiqi (2010) found reliability is one-factor influencing patients' decisions for satisfying the private healthcare sector. Therefore, H2 was supported. In addition, the results demonstrated that our model also disclosed that Responsiveness is positively and significantly associated with patient satisfaction ($\beta.3 = 0.167$, $p <0.05$). The willingness of service providers to assist and provide prompt services to customers is very important to customer evaluation of the clinic. The results show that Responsiveness has a positive influence on patient satisfaction. Patients are satisfied with the personal services and service personnel who understand their needs. This finding is supported by Tucker & Adams (2001), Mengi (2009), Kondasani & Panda (2015) studies which found Responsiveness is one of the factors influencing patients' being satisfied with healthcare services. H3 was also accepted. The fourth hypothesis concerns whether Assurance is an antecedent of patient satisfaction. The results also show that assurance positively influences patient satisfaction ($\beta.4 = 0.498$, $T=8.55$, $p <0.05$). Moreover, flow assurance has played a critical role in forming patient satisfaction. The degree of trust and confidence that customers feel about the private clinic services greatly depends on the service provided by the clinic employees. According to the research results, Assurance positively influences patients' satisfaction. The excellent and competent services can explain the clinic staff's results. Patients feel that the clinic can honour their commitments and are confident in using clinic services. This finding is consistent with prior studies for healthcare services (Mengi, 2009; Siddiqi, 2010 and Lo et al., 2010). Therefore, H4 is supported by the data. Assurance was the most important factor in predicting patient satisfaction regarding the relationships between service quality and satisfaction dimensions. Finally, Empathy has the least importance in patients' minds. Results show that Empathy was not related to patient satisfaction ($\beta.5 = -0.124$, $p>0.05$), but patients perceive a low degree of interaction with employees in clinics providing personalized service. The clinic reflects a weak ability to fulfil patients' individual needs, such as solving patients' inquiries and problems. This result contradicts previous studies (Tucker & Adams, 2001; Zaim et al., 2010; Anbori et al., 2010; Buyukozkan et al., 2011; Kitapci et al., 2011). Therefore, H5 is not supported.

The results generally support positive relationships among service quality dimensions and satisfaction. However, the specific dimensions of service quality used in this study (Parasuraman et al., 1988) showed different impacts on patient satisfaction. Assurance was the most important factor in predicting patient satisfaction regarding the relationships between service quality and satisfaction. Lack of Empathy in health service delivery may irritate or annoy patients. However, lack of Empathy alone did not affect patients' overall satisfaction. This indicates that patients tend to have a positive perception about the health service if they consider the perceived quality of the health service to be credible, reliable, tangible, and responsive, even though they may feel that the health provider does not empathize with them.

In sum, this study was an initial attempt to investigate the relationships among service quality dimension and satisfaction in Algerian healthcare services. The findings provide useful insights into the effects of the five service quality factors on patient satisfaction.

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Conclusions

Understanding service user encounters from a consumer's perspective is highly relevant in healthcare (Butt & De Run, 2010). However, few studies in the Algerian context have investigated multiple direct links between service quality dimensions and patient satisfaction. Therefore, hospital managers should determine how much patient behavior is influenced by service quality and satisfaction before implementing service improvement programs (Wu et al., 2008). Therefore, service providers can better understand how various dimensions and items affect overall service quality and efficient design service delivery processes.

This research aimed to test SERVQUAL in an Algerian private healthcare sector and contribute to satisfaction formation. This dimension's quality gives healthcare managers the ability to evaluate patients' satisfaction and improve service quality and user satisfaction throughout the management of the relevant antecedents identified by the proposed model. Our findings show significant differences between service quality and patient satisfaction regarding their perception of tangibles, reliability, Responsiveness, and Assurance. In addition, the SERVQUAL dimensions offer positive relationships with customer satisfaction (accept Empathy). This study also suggests that the SERVQUAL model of service quality is a suitable instrument for measuring the healthcare service quality in Algeria. Therefore, service provider managers can use this instrument to assess private hospital service quality in Algeria and other African countries. Service quality should be emphasized for maintaining and improving customer satisfaction. This implies that these four dimensions are most important to Algerian customers. Future studies can incorporate behavioral intention measures to study service quality effects on purchase intention objectives, trust, word of mouth, involvement, etc. Finally, it can also broaden its scope by directly measuring patients' satisfaction and its relation to service quality dimensions.

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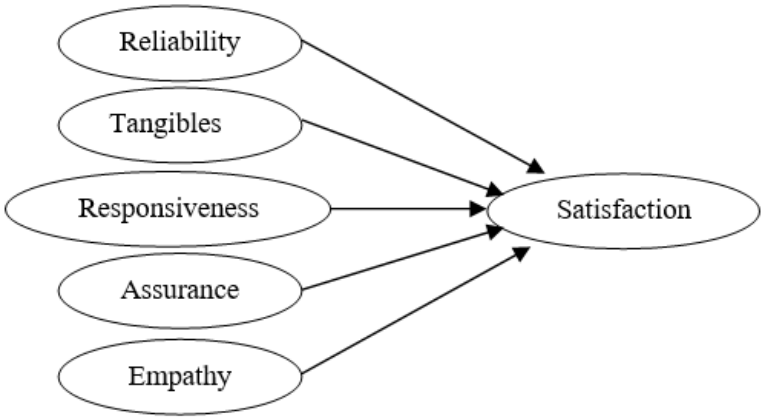

Sources: Author's own work.

Figure 1. Conceptual Model

Table 1. Survey respondent profile

Gender			
	Male	89	42.78%
	Female	119	57.21%
Age group			
	24≥	14	6.73%
	25-29	40	19.23%
	30-39	66	31.73%
	40-59	70	33.65%
	60≤	18	8.65%
Income			
	30>	63	30.28%
	30-40	80	38.46%
	40-50	45	21.63%
	50<	20	9.61%

Sources: Author's own work.

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Table 2. Factor Loadings [λ] For Dimensions Of Service Quality and patients satisfaction

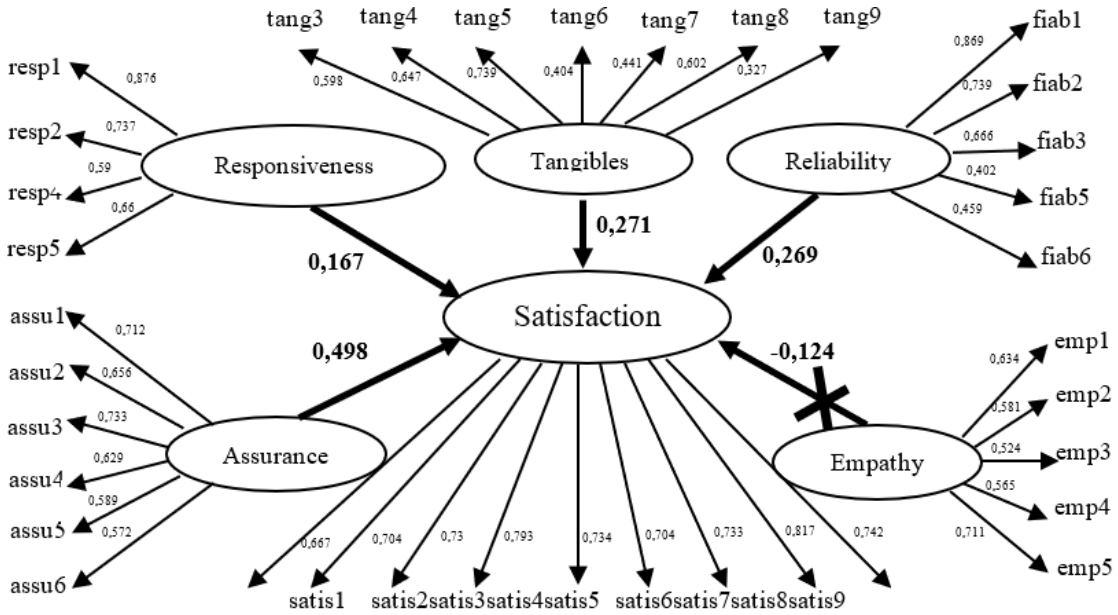
Items	FIAB	TANG	RESP	ASSU	EMPT	SATIS
fiab1	0,869					
fiab2	0,739					
fiab3	0,666					
fiab5	0,402					
fiab6	0,459					
tang3		0,598				
tang4		0,647				
tang5		0,739				
tang6		0,404				
tang7		0,441				
tang8		0,602				
tang9		0,327				
resp1			0,876			
resp2			0,737			
resp4			0,590			
resp5			0,660			
assu1				0,712		
assu2				0,656		
assu3				0,733		
assu4				0,629		
assu5				0,589		
assu6				0,572		
empt1					0,634	
empt2					0,581	
empt3					0,524	
empt4					0,565	
empt5					0,711	
satis1						0,667
satis2						0,704
satis3						0,730
satis4						0,793
satis5						0,734
satis6						0,704
satis7						0,733
satis8						0,817
satis9						0,742

Sources: Author's own work.

Table 3. Descriptive statistics, reliability, and Factor Analysis

Variables	No. of Scale Items	$\bar{X}$ Mean Score	SD Standard Deviation.	α Cronbach	KMO	Bartlett Khi-deux	V(x) explained variance
Reliability	5	2,19	1,443	0,76	0,75	296,35	52,50
Tangibles	9	2,38	1,784	0,78	0,77	467,30	52,77
Responsiveness	4	2,40	1,601	0,80	0,75	277,41	63,56
Assurance	6	2,14	1,235	0,81	0,81	375,57	51,87
Empathy	5	2,05	1,242	0,74	0,75	214,55	49,16
Satisfaction	9	2,29	1,044	0,93	0,91	1359,55	65,97

Sources: Author's own work.



Sources: Author's own work.

Table 4. Path analysis by Structural Equation Modeling (SEM)

Hypothesis	*β*	*t*-value	*p*-value	Supported
H_1:Reliability → Satisfaction	0,269	4,277	0,000	Yes
H_2: Tangibles → Satisfaction	0,271	4,139	0,000	Yes
H_3:Responsiveness → Satisfaction	0,167	2,613	0,009	Yes
H_4:Assurance → Satisfaction	0,498	8,552	0,000	Yes
H_5:Empathy→ Satisfaction	-0,124	-1,827	0,068	No

Notes: Standardized estimates are shown; 0.000,$p < 0.05$.

Sources: Author's own work.