

## The role of hospital service quality in developing the satisfaction of the patients and hospital performance

Jeen-Su Lim<sup>a</sup>, Kee-Sook Lim<sup>b</sup>, John H. Heinrichs<sup>c</sup>, Khulud Al-Aali<sup>d</sup>, Alamzeb Aamir<sup>e</sup> and Muhammad Imran Qureshi<sup>f\*</sup>

<sup>a</sup>Professor, Marketing and E-Commerce, The University of Toledo, United States

<sup>b</sup>Associate Lecturer, Information Operations and Technology Management Department, The University of Toledo, United States

<sup>c</sup>Associate Professor, Information Science, Wayne State University, United States

<sup>d</sup>Assistant Professor and Vice Dean for Academic Affairs Department of Clinical Dental Sciences, College of Dentistry, Princess Nourah Bint Abdulrahman University, Riyadh, Saudi Arabia

<sup>e</sup>Assistant Professor, Department of Management Sciences, Fata University F. R Kohat Pakistan, Pakistan

<sup>f</sup>Senior lecturer, Malaysian Institute of Industrial Technology, Universiti Kuala Lumpur, Malaysia

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### ABSTRACT

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This paper aimed to examine a conceptual model for the relationships between hospital service quality, patient satisfaction, hospital utilization, and hospital financial performance. A total of 176 hospitals was selected from California State for this study. The standardized performance measures were used together with precisely defined specifications and standardized data-collection protocols. First, an exploratory factor analysis with Varimax rotation was performed. The measurement properties were then assessed in a confirmatory factor analysis (CFA). The analysis results show that quality had a significant effect on satisfaction, which, in turn, affected the financial performance. The results provide support for the previous findings indicated that service quality was positively associated with patient satisfaction and that satisfaction and utilization had a significant positive effect on financial performance. The analysis results provide support for the previous findings that hospital service quality is positively related to patient satisfaction. The findings also show that patient satisfaction and hospital utilization have a significant positive effect on hospital financial performance.

## 1. Introduction

Hospitals in the United States have embraced patient-centered, market-driven structures for delivering healthcare (Tomson & Berwick, 2006; Robinson, 2005). This shift toward patient-centered structures may have been motivated by the need to control the expenses associated with various external factors. The factors that are thought to contribute to significant increases in the hospital cost that contain the cost of latest technologies and medical cure, new regulatory requirements and mandatory nurse staffing ratios, extensive hospital mergers, and reduced medicare reimbursements (Antwi et al., 2009; Fisher et al.,

\* Corresponding author.

E-mail address: [muhammadimranq@unikl.edu.my](mailto:muhammadimranq@unikl.edu.my) (M.I. Qureshi)

2009). The perceived shift to a market-driven or consumer-driven approach involves health policies with both patient-centric and provider-centric components. These policies necessitate the measurement and improvement of patient satisfaction as a strategic priority for hospitals. Previous studies have shown that a patient-centered focus can help to improve clinical care and patient satisfaction because the patient is more prominently involved in making his or her healthcare choices (Robinson, 2005; Robinson et al., 2008). Thus, many hospitals currently measure patient satisfaction and use this satisfaction information to assess and improve the usefulness of their medical practices and procedures (Arasli et al., 2008; Priporas et al., 2008).

In the past, researchers used to focus on measuring healthcare quality and the determinants of patient satisfaction. These measurement approaches assessed the level of satisfaction among patients regarding service quality or determined the patient's perceptions regarding how well the service had been performed. Many researchers have adopted the two most widely recognized service quality scales in the healthcare set up. The two models that are commonly adopted by researchers are the ServQual model (Alghamdi, 2014; Aghamolaei, et al; 2014; Parasuraman et al., 1988; Murti et al., 2013) and the ServPerf model (Lin et al., 2014; Brady et al., 2002; Cronin, & Taylor, 1992). However, the application of the ServQual and ServPerf models to healthcare services has yielded inconsistent and controversial results (Dagger et al., 2007; Priporas et al., 2008) and they have generated various quality domains (Dagger et al., 2007; Jarvis et al., 2003; Rohini & Mahadevappa, 2006; Zineldin, 2006).

Many researches have been conducted so far to examine the connection among patient satisfaction and healthcare quality. Apart from these studies it has also been proposed that patient satisfaction is an important construct that intervenes the impact of perceived service quality on the behaviors and various other results (Wu et al., 2016; Choi et al., 2005; Murti et al., 2013; Dagger et al., 2007; Vinagre & Neves, 2007). Patient satisfaction can also determine the degree of competitiveness among healthcare organizations. Patients perceive their satisfaction to be based on the hospital's responsiveness to their views and needs, the quality of the healthcare services delivered by the hospital, and the overall doctor-patient relationship (Zineldin, 2006). Therefore it is very important for hospitals to understand the determining factors of patient satisfaction. Hospitals need to assess what patients' value and how they perceive the quality of care (Priporas et al., 2008). Hospitals can use patient satisfaction information to determine how to improve service quality, the appropriate methods to use, and the timing for using these methods (Karl et al., 2010).

Previous studies, however, have examined only the relationship in service quality and patient satisfaction (Vinagre & Neves, 2007). Few previous studies have evaluated the link between service quality, patient satisfaction, the hospital operational measure of utilization, and hospital financial performance (Duggirala et al., 2008; Hegji & Self, 2009). Therefore, the basic aim of the present study is to fill the gap in the previous research by investigating additional links between service quality, satisfaction, hospital utilization, and financial performance. Also, this study sets and examine a conceptual model of the links between hospital service quality, patient satisfaction, the operational measures of hospital utilization, and hospital financial performance. In addition, most previous studies have used the survey data from the patients of a single or a small number of healthcare organizations to test the hypothesized relationships. In this study, the online quality and patient satisfaction data are used along with performance data to test the conceptual model. The online hospital data offer standardized user-generated measures that can be used across hospitals for a specified time period.

## **2. Hospital Service Quality**

Perceived quality of the service provided in the hospitals is the user's overall evaluation of what is received and what is given (Duggirala et al., 2008). Studies were also conducted specifically on patient-perceived service quality. The pioneering work in this area identified ten dimensions: concrete, reliability, responsiveness, proficiency, courteousness, credibility, security, availability, communication, and

understanding the customer (Berry et al., 1985; Parasuraman et al., 1985; Mostafa, 2005; Hirut, 2015;). These ten dimensions were later reduced to five factors: concrete, trustworthiness, responsiveness, surety, and sympathy (Parasuraman et al., 1988). The researchers later proposed the ServQual model, which exhibits how multiple limitation in the service process disturb and affect the assessment and approach of the consumer towards the quality of the service. One of the easiest way to improve the service quality in healthcare centers is to know and use the patient knowledge regarding the healthcare facilities. (Zeithaml et al., 1990).

Many studies have shown the successful use of the ServQual model in the healthcare sector (Rohini & Mahadevappa, 2006; Zineldin, 2006), and such researches conducted previously resulted in the successful application of ServQual in the healthcare sector. On the other hand, some of the studies have shown that ServQual and other existing scales are not fit to the measurement of patient satisfaction over the course of various medical encounters. Some researchers have argued that quality of service in healthcare can be termed as a formative construct (Rossiter, 2002). The formative approach shows that the measurement dimensions that are included determine the construct of service quality.

The healthcare literature also offers several conceptual service quality frameworks and stresses the application of Total Quality Management practices, which facilitate a patient-oriented approach to health care (Talib et al., 2011). Researchers (Baker et al., 2007; Levit et al., 2013) have suggested that consumer-oriented healthcare should be used as the important model for service delivery. Two primary areas that should be targeted in the process of managing healthcare quality, technical care and interpersonal care processes, were identified (Donabedian, 2002; Karl et al., 2010). Technical care processes involve medical developments and technology application in the healthcare, whereas interpersonal care refers to the management of the interactions that occur between the service provider and the patient. Amenities of care are also seen as contributing to healthcare quality (Adrutdin et al., 2018; Dawi et al., 2016; Qureshi, 2012; Qureshi et al., 2012). Care facilities are very basic in the environment established by care. A fourth dimension has also been proposed that relates to the administrative aspects of service provision (Ware et al., 1983). Similarly, it has been indicated that service quality includes interpersonal quality, outcome quality, and environmental quality (Brady & Cronin, 2001).

Following this stream of research, researchers also identified additional dimensions of healthcare service quality. Technical quality, quality processes, quality infrastructure, quality interaction, and quality atmosphere have also been proposed (Zineldin, 2006). Other researchers have suggested the existence of a four-factor structure that includes relevant physician and staff, the convenience of the care process, and tangibles, arguing that these components show elements of technical, functional, environmental, and administrative quality (Choi et al., 2005). These dimensions include infrastructure, personnel quality, doctor care, nursing care, paramedical and support staff quality, communication quality, clinical care processes, administrative procedures, safety indicators, the experience of receiving medical care, and social responsibility. A hierarchical model of health service quality identified nine sub-dimensions that are components of the four primary dimensions of service quality perceptions (Dagger et al., 2007). The basic dimensions are interpersonal, technical, environmental, and administrative qualities.

### **3. Patient Satisfaction**

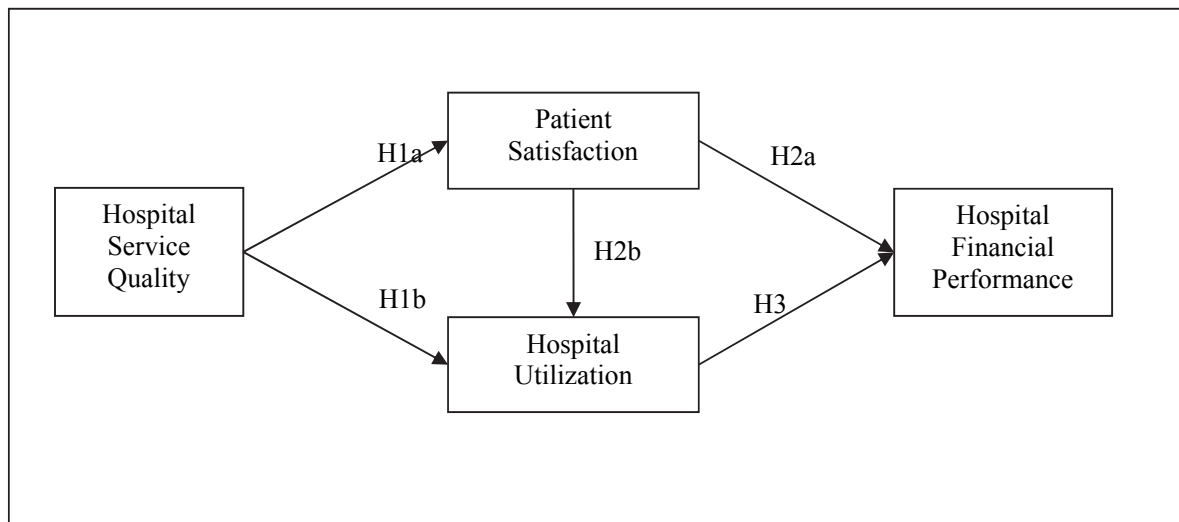
Healthcare service providers aim to achieve a level of patient satisfaction that will ensure that they have a good reputation. Overall patient satisfaction is defined as satisfaction with the series of interactions that occur during the delivery of a healthcare service. Patient satisfaction is a cumulative construct that includes contentment with different aspects of hospitals and hospital services (Elleuch, 2007; Zineldin, 2006). Patient satisfaction is considered to be the result of care in itself, and thus it stands as a primary contributor to better patient compliance which resultantly provide improved clinical results. The satisfaction of the Patient related to medical care is a multi-dimensional construct that exhibits patients' expectations, morals and experiences (Baker & Streatfield, 1995). Measuring satisfaction requires one to

consider the technical, personal, social, and moral aspects of care (Kane et al., 1997). Patient satisfaction and reputation are much related, and satisfaction comprises the likelihood that the patient will feel better about the quality of the service received that the patient will suggest the service provider to another person. Patient satisfaction also reflects how patients evaluate the experience in the hospital and they decide whether to come to the hospital again or not.

Almost all the researcher are agreed on the fact that service quality is a cognitive construct, whereas satisfaction includes both cognitive and affective components (Choi et al., 2005; Elleuch, 2007).

#### 4. Conceptual model

The conceptual model which is tested in the current research work is shown in Fig. 1. The hypothesized relationships are shown between hospital service quality, patient satisfaction, hospital utilization, and hospital financial performance.



**Fig. 1.** Conceptual Model and Research Hypothesis

#### 5. Impact of Hospital Service Quality

The patient's experience with the healthcare service provider is critical because it influences the patient's health (Manary et al., 2013; Elleuch, 2007). The healthcare experience allows the patient to evaluate the service quality for them. The experience also offers the healthcare service provider an opportunity to manage its patients' service perceptions (John, 1996).

Previous studies have focused on the factors that influence patient satisfaction (Chen et al., 2016; Hunsaker et al., 2015; Jafari et al., 2014). Patient satisfaction is directly affected by the service they receive in the hospital. The general argument that service quality influences patient satisfaction and other outcomes is supported by many other researchers, who have reported that a significant relationship exists between service quality and patient satisfaction. Their findings show that personal care, good communication skills, empathy and caring on the part of the service provider all lead to greater patient satisfaction. Similarly, other researchers have found a significant relationship between the patients' perceptions of service quality and the patients' overall satisfaction (De Man et al., 2002). Researchers have empirically tested the relationships among the six dimensions of the hospital Baldrige quality model and organizational performance (Goldstein & Schweikhart, 2002). These researchers found significant relationships between the hospital Baldrige category scores and hospital performance measures.

A strong link has also been found in the literature between service quality, patient satisfaction and practitioner loyalty (Arasli et al., 2008; Kara et al., 2005; Pakdil & Harwood, 2005). Some researchers (Arasli et al., 2008; Meehan et al., 2002) argue that the number of satisfied patients and the level of loyalty increase as service quality improves. Satisfied patients, in turn, can generate increased revenue with repeat business and thus reduce organizational costs. Other researchers indicate that patient satisfaction is related to addressing patients' preferences and values by improving the level of care delivered, providing efficient, timely, and accurate hospital data and information, and managing more empathetic, honest, and sensitive interactions between patients and service providers (Levit et al., 2013; Marley et al., 2004).

Researchers have shown that patient-perceived service quality has a significant relationship to patient satisfaction (Duggirala et al., 2008). Other researchers have found that service quality has a significant impact on service satisfaction and behavioral intentions (Dagger, Sweeney, & Johnson, 2007) and have identified significant effects of patients' emotions and service quality on patient satisfaction (Vinagre & Neves, 2007). These studies suggest that service quality influences patient satisfaction and behavioral intentions. Hence, the following hypotheses are proposed.

H1a: Hospital service quality has a direct effect on patient satisfaction.

H1b: Hospital service quality has a direct effect on hospital utilization.

## 6. Relationships between Patient Satisfaction and Hospital Performance

With the increased amount of public information that is available regarding healthcare providers, including online quality ratings, patients now appear to rely on this publicly available online information in their hospital selection and usage decisions. Researchers assessed the potential effect of quality report cards on competition between providers, on cost, and on the quality of healthcare using information from the New York State Cardiac Surgery Reports (Salyers et al., 2017; Mukamel & Mushlin, 1998). The results show that there is a significant positive relationship between the quality ratings of hospitals and physicians, the growth in patient shares, and in charges for procedures. These authors concluded that patients and referring physicians appear to respond to the information describing the quality of individual surgeons and hospitals as expected. However, the strength of this association tends to decline over time. The researchers reported a positive link between the progress in total quality management and consumer-perceived service quality (Kunst & Lemmink, 2000; Talib et al., 2011). They also found that to a limited degree, total quality management and customer-perceived service quality are both positively related to business performance. Other researchers have found positive and significant relationships between the dimensions of service quality and hospital performance (Duggirala et al., 2008; Gupta & Rokade, 2016).

The studies mentioned above that hospital service quality information forms and influences the image and reputation of hospitals and, in turn, it affects the patient decisions regarding hospital selection. Thus it is anticipated that hospital service quality will affect hospital usage and financial performance. Hence, the following hypotheses are proposed.

H2a: Patient satisfaction has a direct effect on hospital financial performance.

H2b: Patient satisfaction has a direct effect on hospital utilization.

H3: Hospital utilization has a direct effect on hospital financial performance.

## 7. Methodology

The researcher has selected 176 California hospitals as sample for the current study that provided data on authentic service quality and hospital performance measures. The data was collected from these hospitals from July, 2006 to June, 2007. These hospitals have been accredited by the Joint Commission on

Accreditation of Healthcare Organization (JCAHO), and they comprise more than 90 percent of the acute care medical-surgical hospital beds in the USA (Williams et al, 2005). The JCAHO had required 3,377 of its 4,644 accredited hospitals to provide data on standardized service quality performance measures since 2002. The performance measures were designed to check hospital's performance in the said duration and to enhance the development in the service quality through sending quarterly comparative reports for collecting feedback from all the concerned hospitals. The present study has utilized the standardized performance measures to measure service quality in these hospitals. The performance measures were used together with specifically set specifications and consistent data-collection procedures. The researcher has measured the Hospital performance using three hospital utilization measures and two financial performance measures. The bed occupancy of the hospitals was measured with three hospital utilization items: the licensed bed occupancy rate, the available bed occupancy rate, and the staffed bed occupancy rate. Two items were used to measure hospital financial performance: total operating revenue and pre-tax net income.

## 8. Results

In order to refine the measurement items, first, an exploratory factor analysis with varimax rotation was performed. Because of low factor and high cross loadings an item among others from the service quality factors, was removed. The confirmatory factor analysis (CFA) using the Lisrel 8.80 program was used for assessing the properties of measurement (Jöreskog et al., 2000; Alumran et al., 2014). Multiple fit criteria were presented to rule out the measurement biases inherent in the various measures (Hair et al., 2010). CFA results are exhibited in table 1. The overall goodness-of-fit indices showed that the model fit the data fairly well. The evaluation of the error variance, modification index, and residual co variation assured that the items selected in the questionnaire were valid and reliable. (Cox et al., 2013; Fornell & Larcker, 1981). The convergent validity of the measures were also tested and found correct when the items were loaded to the expected constructs and the composite reliabilities were measured for the four constructs (Almuran et al., 2014; Fornell & Larcker, 1981). Thus the range of the composite reliabilities were from 0.76 to 0.97, with factor loadings ranging from 0.61 to 0.99 ( $p < 0.01$ ). Discriminant validity was tested using the chi-square difference test procedure (Hill & Hughes, 2007; Anderson, 1987; Bagozzi & Phillips, 1982). All the possible pairs of constructs were tested using chi-square test and the chi-square difference showed that the critical value was exceeded, which indicated discriminant validity.

**Table 1**  
Confirmatory Factor Analysis Results

	Hospital Service Patient Quality (HSQ)	Patient (PS)	Satisfaction	Hospital Utilization (HU)	Hospital Financial Performance (FP)
HSQ1: Respect for patient preferences	.95				
HSQ2: Coordination of care	.89				
HSQ3: Information and education	.83				
HSQ4: Physical comfort	.90				
HSQ5: Safe medical practice	.89				
PS1: Overall evaluation			.97		
PS2: Recommend to others			.97		
HU1: Licensed bed occupancy rate				.87	
HU2: Available bed occupancy rate				.99	
HU3: Staffed bed occupancy rate				.61	
FP1: Total operating revenue					.72
FP2: Pre-tax net income					.84
<b>Composite Reliabilities</b>	<b>.95</b>	<b>.97</b>		<b>.88</b>	<b>.76</b>
Goodness-of-Fit Indices:					
Chi-Square = 153.91 with 48 d.f. ( $p = .00$ )					
Goodness of Fit Index (GFI) = .88					
Comparative Fit Index (CFI) = .95					
Normed Fit Index (NFI) = .93					
Root Mean Square Residual (RMSR) = .070					

All loadings are significant at  $p < .01$

The model parameters were estimated using a Structural equation modeling analysis, based on the conceptual model, which postulated the relationships among hospital service quality, patient satisfaction,

hospital utilization, and hospital financial performance. Table 2 shows the results of the structural model analysis, including the standardized coefficients along with the t-values of the model. The model shows an acceptable fit to the data when it is tested on the bases of measures and values indicated above.

**Table 2**  
Standardized Parameter Estimates and Goodness-of-Fit Indices

Path		Parameter Estimate	t-value
HSQ	→	PS .83	16.14*
HSQ	→	HU .01	.10
PS	→	FP .24	2.76*
PS	→	HU .03	.22
HU	→	FP .27	3.10*

Goodness-of-Fit Indices:

Goodness of Fit Index (GFI) = .88

Normed Fit Index (NFI) = .92

Non-Normed Fit Index (NNFI) = .93

Comparative Fit Index (CFI) = .95

Chi-Square/d.f.=156.16/49, p-value = .00

Root Mean Square Residual (RMSR) = .070

HSQ: Hospital Service Quality;

PS: Patient Satisfaction;

FP: Hospital Financial Performance

HU: Hospital Utilization;

\* p < .05

In our evaluation of the structural model, the standardized coefficients are indicated and utilized to test the hypothesized relationships. The path coefficient from hospital service quality to patient satisfaction is significant at the 0.05 level. The significant path coefficient of 0.83 is in the expected direction and supports Hypothesis 1a. As expected, the findings support the general belief that higher service quality leads to patient satisfaction. Interestingly, the path coefficient from hospital service quality to hospital utilization is not significant at the 0.05 level. Therefore, Hypothesis 1b is not supported by the results.

Patient satisfaction shows a significant effect on hospital financial performance with a path coefficient of 0.24 but shows no significant effect on hospital utilization. These results support Hypothesis 2a but do not support Hypothesis 2b. Increased patient satisfaction leads to better hospital financial performance but does not necessarily increase hospital utilization. As expected, the path coefficient of 0.27 from hospital utilization to hospital financial performance is significant at the 0.05 level. Hypothesis 3 is supported by the results.

## 9. Discussion

This study has contributed in developing a conceptual model that shows the relationships among hospital service quality, patient satisfaction, hospital utilization, and hospital financial performance. The analysis results endorse the previous findings that hospital service quality is positively related to patient satisfaction (Marley et al., 2004; Vinagre & Neves, 2007). The findings also show that patient satisfaction and hospital utilization have a significant positive effect on hospital financial performance. These results suggest that improving service quality will result in higher patient satisfaction. Therefore, hospitals should devote resources to improve service quality in addition to improving clinical quality. Hospital financial performance can be improved by increasing patient satisfaction as well as by increasing hospital capacity utilization. This study, however, did not find a significant causal path from hospital service quality to hospital utilization. The causal path from patient satisfaction to hospital utilization was also found to be non-significant. The results suggest that hospital utilization is not dependent on improved service quality or patient satisfaction. The present study has focused and, in a way, extends the previous research conducted on the relationship among hospital service quality, patient satisfaction, hospital utilization, and hospital financial performance. The results have improved our theoretical understanding of the impact of improving hospital service quality. The main managerial implication of the findings is that hospital management should focus on improving service quality in areas that will increase patient satisfaction. It is proposed for the future researcher to expand the model adopted in the current study by including other quality and operational measures. It is also recommended that the model should be tested using additional data from a survey using a national sample. One of the limitations of the current study

is the use of secondary data from just one state. As a result of this limitation, the study findings should be interpreted with care.

## References

- Adrutdin, K. F., Ali, A., Hassan, S., Jaafar, J., Rahim, N. S. A., & Qureshi, M. I. (2018). The Relationship between Knowledge for Customer and Service Quality on Customer Satisfaction: A Study on UniKL MITEC Student Services. *International Journal of Engineering & Technology*, 7(2.29), 69-72.
- Aghamolaei, T., Eftekhaari, T. E., Rafati, S., Kahnouji, K., Ahangari, S., Shahrzad, M. E., & Hoseini, S. H. (2014). Service quality assessment of a referral hospital in Southern Iran with SERVQUAL technique: patients' perspective. *BMC Health Services Research*, 14(1), 322.
- Alghamdi, F. S. (2014). The impact of service quality perception on patient satisfaction in Government Hospitals in Southern Saudi Arabia. *Saudi Medical Journal*, 35(10), 1271–1273.
- Alumran, A., Hou, X.-Y., Sun, J., Yousef, A. A., & Hurst, C. (2014). Assessing the construct validity and reliability of the parental perception on antibiotics (PAPA) scales. *BMC Public Health*, 14, 73.
- Anderson, J. C. (1987). An approach to confirmatory measurement and structural equation modeling of organizational properties. *Journal of Marketing*, 65, 34-49.
- Antwi, Y. A., Gaynor, M. S, & Vogt, W. B. (2009). A bargain at twice the price? California hospital prices in the new millennium. *Forum for Health Economics & Policy*, 12(1).
- Arasli, H., Erdogan, H.E, Salih ,T. K. (2008). Gearing service quality into public and private hospitals in small islands Empirical evidence from Cyprus. *International Journal of Health Care Quality Assurance*. 21, 8-23.
- Bagozzi, R. P, & Phillips L. W. (1982). Representing and testing organizational theories: A holistic construal. *Administrative Science Quarterly*, 16, 459-489.
- Baker, R., & Streatfield, J. (1995). What type of general practice do patients prefer? Exploration of practice characteristics influencing patient satisfaction. *British Journal of General Practice*, 45, 654-659.
- Baker, L., Bundorf, K., Royalty, A., Galvin, C., & McDonald, K. (2007). Consumer-Oriented Strategies for Improving Health Benefit Design.
- Berry, L. L, Zeithaml, V.A, Parasuraman, A. (1985). Quality counts in services, too. *Business Horizons*. 44-52.
- Brady, M. K, Cronin, J. J., & Brand, R. R. (2002). Performance-only measurement of service quality: A replication and extension. *Journal of Business Research*, 55,17-31.
- Brady M. K., & Cronin J. J. (2001). Some new thoughts on conceptualizing perceived service quality: A hierarchical approach. *Journal of Marketing*. 65, 34-49.
- Chen, H., Li, M., Wang, J., Xue, C., Ding, T., Nong, X., Liu, Y., & Zhang, L. (2016). Factors influencing inpatients' satisfaction with hospitalization service in public hospitals in Shanghai, People's Republic of China. *Patient Preference and Adherence*, 10, 469.
- Choi, K. S., Lee, H., Kim, C., Lee S. (2005). The service quality dimensions and patient satisfaction relationships in South Korea: Comparison across gender, age and types of service. *The Journal of Services Marketing*. 19, 140-149.
- Cox, C. L., Sherrill-Mittleman, D. A., Riley, B. B., Hudson, M. M., Williams, L. J., Leisenring, W. M., Robison, L. L. (2013). Development of a Comprehensive Health-related Needs Assessment for Adult Survivors of Childhood Cancer. *Journal of Cancer Survivorship : Research and Practice*, 7(1), 1–19.
- Cronin, J. J, & Taylor, S.A. (1995). Measuring Service Quality: A re-examination and extension. *Journal of Marketing*, 55-68.
- Dagger, T.S., Sweeney J. C, & Johnson, LW. (2007). A hierarchical model of health service quality scale: Development and investigation of an integrated model. *Journal of Service Research*. 10, 123-142.
- Dawi, N. M., Jusoh, A., Nor, K. M., & Qureshi, M. I. (2016). Service Quality Dimensions in Pay TV Industry: A Preliminary Study. *International Review of Management and Marketing*, 6(4S), 239-249.
- De Man, S., Gemmel, P., Vlerick, P., Van Rijk, P., & Dierckx, R. (2002). Patients' and personnel's perceptions of service quality and patient satisfaction in nuclear medicine. *European Journal of Nuclear Medicine*. 29, 1109-1117.
- Donabedian, A. (2002). Quality assurance in health care: Consumers' role. *Quality in Health Care*. 1, 247-251.



- Duggirala, M., Rajendran, C., & Anantharaman, R. N. (2008). Provider-perceived dimensions of total quality management in healthcare. *Benchmarking: An International Journal*, *15*, 693-722.
- Elleuch, A. (2007). Patient satisfaction in Japan. *International Journal of Health Care Quality Assurance*, *21*, 692-705.
- Fisher, E. S., Bynum J. P., & Skinner J. S. (2009). Slowing the growth of health care costs - Lessons from regional variation. *The New England Journal of Medicine*, *360*(9), 849-852.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, *18*, 382-388.
- Goldstein, S. M., & Schweikhart, S. B. (2002). Empirical support for the baldrige award framework in U.S. hospitals. *Health Care Management Review*, *27*, 62-75.
- Gupta, K. S., & Rokade, V. (2016). Importance of Quality in Health Care Sector: A Review. *Journal of Health Management*, *18*(1), 84-94.
- Hair Jr, J. F., Anderson, R. E., Tatham R. L., & Black W. C. (2010). *Multivariate data analysis and readings*, 7<sup>th</sup> ed. Englewood Cliffs, NJ.: Prentice-Hall
- Hegji, C. E., & Self, D. R. (2009). The impact of hospital quality on profits, volume, and length of stay. *Health Marketing Quarterly*. *26*, 209-223.
- Hill, C. R., & Hughes, J. N. (2007). An Examination of the Convergent and Discriminant Validity of the Strengths and Difficulties Questionnaire. *School Psychology Quarterly: The Official Journal of the Division of School Psychology, American Psychological Association*, *22*(3), 380-406.
- Hirut, S. (2015). *The effect of service quality on customer based brand equity (A case of Commercial Bank of Ethiopia)*. Doctoral Dissertation.
- Jafari Kelarijani, S. E., Jamshidi, R., Heidarian, A. R., & Khorshidi, M. (2014). Evaluation of factors influencing patient satisfaction in social security hospitals in Mazandaran province, North of Iran. *Caspian Journal of Internal Medicine*, *5*(4), 232-234.
- Jarvis, C. B., MacKenzie, S. B., & Podsakoff, P. M. (2003). A critical review of construct indicators and measurement model misspecification in marketing and consumer research. *Journal of Consumer Research*, *30*, 199-218.
- John, J. (1996). A dramaturgical view of health care services encounter: cultural value based impression, management guidelines for medical professional behavior. *European Journal of Marketing*, *30*, 60-74.
- Jöreskog, K. G., DuToit, S., & DuToit, M. (2000). *LISREL 8: New Statistical Features*, 2<sup>nd</sup> ed. Chicago, IL.: Scientific Software International.
- Kane, R.L., Maceijewski, M., & Finch, M. (1997). The relationship of patient satisfaction with care and clinical outcomes. *Medical Care*, *35*, 714-730.
- Kara, A., Lonial, S., Tarim, M., & Zaim, S. (2005). A paradox of service quality in Turkey: The seemingly contradictory relative importance of tangible and intangible determinants of service quality. *European Business Review*, *17*, 5-20.
- Karl, K. A., Harland, L. K., Peluchette, J. V., & Rodie A. R. (2010). Perceptions of service quality: What's fun got to do with it? *Health Marketing Quarterly*. *27*, 155-172.
- Kunst, P., & Lemmink, J. (2000). Quality management and business performance in hospitals: A search for success parameters. *Total Quality Management & Business Excellence*, *11*, 1123-1133.
- Levit, L. A., Balogh, E., Nass, S. J., & Ganz, P. (Eds.). (2013). *Delivering high-quality cancer care: charting a new course for a system in crisis*. Washington, DC: National Academies Press.
- Manary, M. P., Boulding, W., Staelin, R., & Glickman, S. W. (2013). The patient experience and health outcomes. *New England Journal of Medicine*, *368*(3), 201-203.
- Marley, K. A., Collier, D. A., & Goldstein, S. M. (2004). The role of clinical and process quality in achieving patient satisfaction in hospitals. *Decision Science*, *35*, 349-369.
- Meehan, T., Bergen, H., Stedman, T. (2002). Monitoring consumer satisfaction with inpatient service delivery: The inpatient evaluation of service questionnaire. *Australian and New Zealand Journal of Psychiatry*, *36*, 807-811.
- Mostafa, M. (2005). An Empirical Study of Patient' Expectation and Satisfaction in Egyptian Hospitals. *International Journal of Health Care quality Assurance*. *18*, 512-532.
- Mukamel, D. B., & Mushlin, A. I. (1998). Quality of care information makes a difference: An analysis of market share and price changes after publication of the New York state cardiac surgery mortality reports. *Medical Care*. *36*, 945-954.

- Murti, A., Deshpande, A., & Srivastava, N. (2013). Service quality, customer (patient) satisfaction and behavioural intention in health care services: exploring the Indian perspective. *Journal of Health Management, 15*(1), 29-44.
- O'Connor, S.J., Shewchuk, R. (2003). Commentary-patient satisfaction: What is the point? *Health Care Management Review, 28*, 21-24.
- Pakdil, F., & Harwood, T. N. (2005). Inpatient satisfaction in a preoperative assessment clinic: An analysis using SERVQUAL dimensions. *Total Quality Management, 16*, 15-30.
- Parasuraman, A., Zeithaml, V.A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing, 49*, 41-50.
- Parasuraman, A., Zeithaml, V.A., & Berry, L. L. (1998). SERVQUAL: A multiple-item scale for measuring customer perceptions of service quality. *Journal of Retailing, 64*:12-40.
- Priporas, C.V., Laspa, C., & Kamenidou, I. (2008). Patient satisfaction measurement for in-hospital services: A pilot study in Greece. *Journal of Medical Marketing, 8*, 325-340.
- Qureshi, M. I., Bashir, N., Zaman, K., Sajjad, N., & Fakhr, S. (2012). Customer Satisfaction Measurement and Analysis using six sigma in Telecom sector of Pakistan. *European Journal of Sustainable Development, 1*(1), 53.
- Qureshi, M. I., Khan, A., & Zaman, K. (2012). Structural investigation of service quality in conventional and Islamic banking in Pakistan. *International Review of Management and Marketing, 2*(2), 99-105.
- Robinson, J.C. (2005). Managed consumerism in health care: A new vision for pursuing public ends through private means. *Health Affairs, 24*, 1478-1489.
- Robinson J.H, Callister L.C, Berry J.A, & Dearing K.A. (2008). Patient-centered care and adherence: Definitions and applications to improve outcomes. *Journal of the American Academy of Nurse Practitioners, 20*, 600-607.
- Rohini, R., Mahadevappa, B. (2006). Service quality in Bangalore hospitals-An empirical study. *Journal of Services Research, 6*, 59-82.
- Rossiter, J. (2002). The C-OAR-SE procedure for scale development in marketing. *International Journal of Research in Marketing, 19*, 305-335.
- Salyers, M. P., Bonfils, K. A., Luther, L., Firmin, R. L., White, D. A., Adams, E. L., & Rollins, A. L. (2017). The relationship between professional burnout and quality and safety in healthcare: A meta-analysis. *Journal of General Internal Medicine, 32*(4), 475-482.
- Talib, F., Rahman, Z., & Azam, M. (2011). Best practices of Total Quality Management implementation in health care settings. *Health Marketing Quarterly, 28*, 232-252.
- Tomson, C. R. V., & Berwick D. M. (2006). What can the UK learn from the USA about improving the quality and safety of healthcare? *Clinical Medicine, 6*, 551-558.
- Vinagre, M. H, & Neves J. (2007). The influence of service quality and patients' emotions on satisfaction. *International Journal of Health Care Quality Assurance, 21*, 87-103.
- Ware, J. E, Snyder, M. K, Wright, W. R, & Davies A. R. (1983). Defining and measuring patient satisfaction with medical care. *Evaluation and Program Planning, 6*, 247-263.
- Williams, S., Schmaltz, S., Morton, D., Koss, R., & Loeb, J. (2005). Quality of care in U.S. hospitals as reflected by standardized measures, 2002-2004. *New England Journal of Medicine. 353*, 255-264.
- Wu, H. C., Li, T., & Li, M. Y. (2016). A study of behavioral intentions, patient satisfaction, perceived value, patient trust and experiential quality for medical tourists. *Journal of Quality Assurance in Hospitality & Tourism, 17*(2), 114-150.
- Zeithaml, V.A, Parasuraman, A, & Berry, L.L. (1990). Delivering Quality Service: Balancing Customer Perceptions and Expectations. Free Press, New York, NY.
- Zineldin, M. (2006). The quality of health care and patient satisfaction: An exploratory investigation of the 5Qs model at some Egyptian and Jordanian medical clinics. *International Journal of Health Care Quality Assurance, 19*, 60-92.

