Service Quality Characteristics and Performance In a University Hospital

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Abstract

This study is to examine the factors that influence the performances of service quality in university hospitals by investigating systematically the condition of service quality. A synthesis of the health care quality is conducted to identify physical quality, operating process quality, and human resources quality that relate to both the overall satisfaction and intention of revisit. Based on the proposed hypotheses, the relationships between the service quality factors and performance are examined using data collected from 167 patients in three hospitals, Korea. Reliability and validity tests are performed for examining its relationship with service quality in health care systems. Total eight independent variables with respect to three service quality levels and two dependent variables for performance are identified for relationships between service quality and performance in health care systems. The results provide health care managers with a managerial insight to the planning function of performance with service quality in health care systems as well as other operations (business, government, or other service organizations) systems. Implication of the study for theory, future studies, and practices are discussed.

Keywords: Service Quality, Outcome Measurement, Health Care System

Introduction

Recently, general hospitals are facing radical change in economic, cultural, and social environments. Health care management needs to respond to new health care environment in 21C such as improved quality of life, advanced health services needs of patients, competition among large-scale hospitals, opening of health care industry, aging, and changes of disease structure.(Berwick, 1989; Dean and Bowen, 1994; and Sterman, Repenning and Kofman, 19997)

This study focus on health services in university hospitals to improve performance of services and get a solution in terms of quality perspective. That is, by exploring the relationship between service quality provided by hospitals and its related performance, this study wants to find what the service quality factors related to performance are.

Specifically, the purpose of this study is as follows: (1) what kind of service quality perspective can be approached for hospital services, (2) which factors of service quality affect hospital performance improvement, and (3) what is the appropriate direction to improve service quality in university hospitals.

In order to fulfill the study purposes, the related literature reviews are addressed in the next section. The third section presents a research model and hypotheses pertinent to service quality of hospitals with appropriate operational definition. The fourth section presents an empirical findings resulted from a survey with inpatients visited to three university hospitals located in Taegu area of Korea. The final section summarizes the study findings and discusses future direction.

Literature Reviews

Service Quality

Service has been defined as a social act which takes place in direct contact between the customer and representatives of the service organization. The very nature of service implies that it must respond to the needs of the customer; that is the service must meet or exceed customer expectations. The expectations must be translated into performance standards and specifications similar of conformance that direct manufacturing activities. Service quality includes both the quality of core services and facilitating services.(Griffin and Hauser, 1992; Kettinger and Lee, 1999; and Laffel and Blumenthal, 1989) Table 1 presents service characteristics.

Continuous quality improvement (CQI) and total quality management (TQM) are growing concepts in health care organizations. CQI is defined as an ongoing effort to provide care that meets or exceeds customer expectations. TQM is defined as a structured systematic process for creating organization-wide participation in planning and implementing continuous improvement in quality. Advanced review of specific reliability and validity issues

of quality improvement in health care systems is provided by many studies.(Counte et al, 1992; Gann and Restuccia, 1994; Kaluzny, McLaughlin and Kibbe, 1992; and Kaluzny, McLaughlin and Jaeger, 1993)

Service Quality and Performance in Hospitals

Most of the study on the subject of quality and performance focuses on manufacturing concerns. Strong associations between product quality and performance are consistently found.(Adam, 1991; Cleverly, 1990; Fleming, 1990; and Harkey and Vraciu, 1992) Garvin (1988) argues that the link between quality and performance takes two routes, the first through increased sales (or premium prices for the same quantity of sales) and the other through lower costs (improved efficiency). The links between quality and performance resulted primarily from increased sales of the higher quantity product.(Parasuraman, Berry, and Zeithaml, 1991; and Sahney and Warden, 1991)

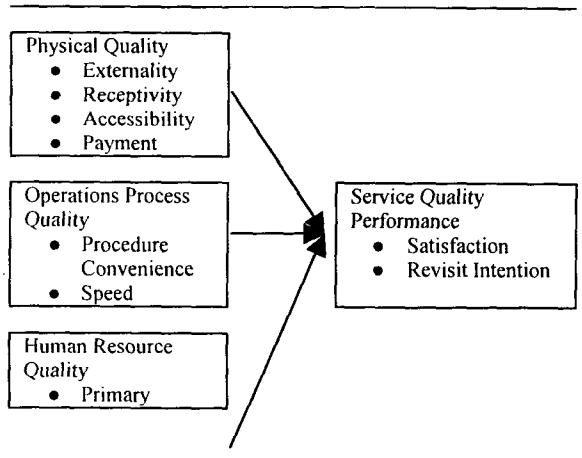
This study considered the five characteristics of service quality: (1) physical quality such as externality, receptivity, access convenience, and price; (2) operating quality such as procedure convenience and speed; and (3) human resource quality such as primary human resources and supporting human resources. Dependent factors are service quality performance that is measured by a satisfaction of patients and intention of revisit.

Table 1. Characteristics of Services

Items	Explanation
Intangibility	• Service is abstract and intangible • no tasteable, no smellable, no hearable before served • evaluation difficulty of service values
Heterogeneity	• non-standardized and varied • no dynamic • no service standardization
Inseparability	• simultaneous occurrence of production and consumption • customer involvement in production process • inseparable possession rights
Perishability	• no inventory • perishable product • difficult transportation

Model Development

Research Design



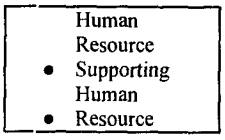


Figure 1. Model Framework

Service quality level differenciates with three levels: physical quality characteristics, operational process quality, and human resources quality. Factors affecting service quality performance are considered in several ways. Prasuraman, et al (1985) extracts factors affecting services quality in terms of initial ten catagorical levels. The resulting factors from ten factors are summarized in externality, reliabilty, respondability, confirmability, and accordability.

Hypotheses Development

There are three primary hypotheses. H1 is related to physical quality and services quality. H1 has total eight sub-hypotheses. H2 is about a relationship between operations process quality and service quality performance. H2 has total four sub-hypotheses. H3 is pertinent to human resource quality and service quality performance. Specific hypotheses are as follows.

H1: There is a significant relationship between physical quality and service quality.

- H11a: There is a significant relationship between externality and service quality.
- H11b: There is a significant relationship between externality and revisit intention.
- H12a: There is a significant relationship between externality and service quality.
- H12b: There is a significant relationship between receptivity and revisit intention.
- H13a: There is a significant relationship between accessibility and satisfaction of service quality.
- H13b: There is a significant relationship between accessibility and revisit intention.
- H14a: There is a significant relationship between payment and service quality.
- H14b: There is a significant relationship between payment and revisit intention.

H2: There is a significant relationship between operations process quality and service quality performance.

- H21a: There is a significant relationship between procedure convenience and service quality satisfaction.
- H21b: There is a significant relationship between operations process speed and service quality satisfaction.
- H22a: There is a significant relationship between procedure convenience and revisit intention.
- H22b: There is a significant relationship between operations process speed and revisit intention.

H3: There is a significant relationship between human resource quality and service quality performance.

H31a: There is a significant relationship between primary human resource and service quality satisfaction.
H31b: There is a significant relationship between primary human resource and revisit intention.
H32a: There is a significant relationship between support human resource and service quality satisfaction.
H32b: There is a significant relationship between primary human resource and revisit intention.

Empirical Analyses

Data Collection

After establishing hypothesis by the model, this study surveyed the questionnaires on relation between quality characteristics and service performance in three university-hospitals in Korea. Questionnaires were directly delivered to patients of three university-hospitals in Korea. Total 210 questionnaires were prepared and 70 questionnaires were assigned to each university-hospital. 179 of 210 questionnaires were successfully received so that the response rate was 85%. 167 usable questionnaires considered for the analysis after filtering inappropriate questionnaires which contain mismarked or unmarked answers.

These data distribution are as follows: K-hospital was 59 questionnaires (35.3% response rate), Y hospital 58 (34.7%), and D hospital 50 (29.9%) after two follow-ups by letter and telephone. A t-test of the study variables between first and second respondents revealed no significant differences, implying that non-response bias was not a problem. All patients of three university-hospitals received identical questionnaires. To prevent selection bias, respondents were asked to select the most recent hospital services provided by three university-hospitals. The service recalled was valid by the hospital management.

Measurement

Questionnaire was constructed physical quality, human resource quality, operational process quality, service quality performance, and respondent's characteristics. Physical quality was measured by total fifteen items: three items of externality, four items of receptivity, two items of assessability, and five items of payment. Operational process quality was measured by total eight items: three items of procedure convenience and five items of queuing. Human resource quality was measured by total fifteen items: nine items of primary human resources and six items of supporting human resource.

Service quality performance was measured by total seven items: five items of service satisfaction and two items of revisit intention. All items were measured with Likert's five scales. Respondent's characteristics were measured by total ten items of scio-economic ones. Table 2 indicates descriptive statistics.

Table 2. Descriptive Statistics

	Ext	Rec	Con	Pri	PHR	Sta	PrQ	Sat	Res
Mean	3.39	3.02	3.39	2.87	3.14	2.97	2.97	3.05	3.23
SD	0.56	0.63	0.63	0.65	0.63	0.62	0.63	0.64	0.80

Scale Validity and Reliability

The measures were subjected to confirmatory factor analysis to assess their validity. All variables but operational process quality were more than 0.6 of total variances. Operational process quality was 0.545, because all items are considered as one factor. Cronbach's α analyzed reliability. All but accessibility showed more than 0.6 of Cronbach's α. Accessibility was 0.588 of Cronbach's α . This is below of 0.6 for meeting the requirements suggested for exploratory research. Since the item was important for this study, the item was included for the analysis. Tables 3 to 6 present the descriptive statistics and alpha coefficients for the construct.

Table 3. Physical Characteristics of Quality with Factor Analysis and Reliability

Factor	Items	Factor Loadings	Eigenvalues	Variance Ratio	Cronbach's alpha
Ext	Ext 1	0.733	2.000	14.3	0.631
	Ext 2	0.798			
	Ext 3	0.555			
Rec	Rec 1	0.726	2.632	18.8	0.675
	Rec 2	0.753			
	Rec 3	0.716			
	Rec 4	0.777			
Con	Con1	0.550	1.271	9.1	0.588
	Con 2	0.869			
Pri	Pri 1	0.815	3.348	23.9	0.875
	Pri 2	0.839			
	Pri 3	0.849			
	Pri 4	0.858			
	Pri 5	0.574			

Table 4. Human Resources Quality

Factors	Items	Factor Loadings	Eigen values	Variance Ratio	Cronbach's alpha
Primary Human Resource	Phy 1	0.716	5.20	34.7	0.914
	Phy 2	0.802			
	Phy 3	0.813			
	Phy 4	0.694			
	Phy 5	0.687			
	Phy 6	0.640			
	Phy 7	0.763			
	Phy 8	0.624			
	Phy 9	0.739			
Supporting Human Resources	Sta 1	0.709	4.05	27.0	0.887
	Sta 2	0.779			
	Sta 3	0.688			
	Sta 4	0.784			
	Sta 5	0.732			
	Sta 6	0.782			

Table 5. Factor Analysis of Process Quality

Factors	Items	Factor Loadings	Eigen values	Variance Ratio	Cronbach's alpha

Process Quality	Pro 1	0.798	4.35	54.4	0.879
	Pro 2	0.789			
	Proc 3	0.705			
	Proc 4	0.697			
	Proc 5	0.660			
	Proc 6	0.738			
	Proc 7	0.767			
	Proc 8	0.736			

Table 6. Service Quality Performance

Factors	Items	Factor Loadings	Eigen values	Variance Ratio	Cronbach's alpha
Service Satisfaction	Sat 1	0.792	3.03	43.2	0.874
	Sat 2	0.740			
	Sat 3	0.783			
	Sat 4	0.658			
	Sat 5	0.773			
Revisit Intention	Rev 1	0.879	2.05	29.3	0.856
	Rev 2	0.873			

Analysis and Discussions

There was high correlation between quality characteristics and service quality performance. The satisfaction of service quality has correlation with human resource quality, operation quality, and externality in physical quality. The intention of revisit has correlation with operating quality, service quality of support manpower and externality in physical quality. Table 7 shows regression analysis on service quality satisfaction and revisit intention.

Table 7. Regression Analysis on Service Quality Satisfaction and Revisit Intention

	c.v.	T values	sig.	F value	R^2
Service Quality Satisfaction				80.66**	0.68
Staff	0.36	5.34**	0.00		
Process	0.33	5.19**	0.00		
Human	0.19	2.92**	0.00		
Externality	0.11	2.08**	0.04		
Revisit Intention				39.86**	0.44
Staff	0.26	3.09**	0.00		
Process	0.32	4.03**	0.00		
Externality	0.25	3.69**	0.00		

** $p < 0.00$

For a satisfaction of customers on service quality it is especially necessary to enhance service operation quality like procedure of diagnosis and rapid treatment for patients. In the human resources level, etiquette and kindness of support manpower including nurses appeared to be so important. In addition, service of key manpower including doctors, externality, receptivity, convenience to access, and price as physical factor appeared to have important influences on satisfaction. And similar results appeared on intention of revisit.

Especially, this study discovered that service quality of the operating process, service quality of support manpower in human resources quality, and externality in physical characteristics were very important.

Conclusion

This study is to examine the factors that influence the performances of service quality in university hospitals. For the purpose, this study analyzed the factors of service quality in university hospitals by investigating systematically the condition of service quality in hospital. Through such an analysis, this study examined the correlation between quality factors and service performance like a satisfaction of customers and intention of revisit.

Summing up the results of this study, quality of physical service, service quality of the operating process, and service quality of human resources appear to be important factors for improving service quality of hospital. Accordingly, it is requested to improve and promote service quality systematically in the overall view of service system.

Service quality is found by systematic approach to be consisted of three aspects of physical hardware, operating software, and humanware related to manpower resources. Lastly, this study tries to find how to improve service quality in university hospitals through relationship between quality characteristics and service performance.

Especially, the procedure and rapidity related to revisit to hospital, and service improvement of support manpower are considered to be most important. An improvement of operating system related to procedure of using hospital and education for consciousness reform of employees should be activated for satisfaction and revisit of patients.

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