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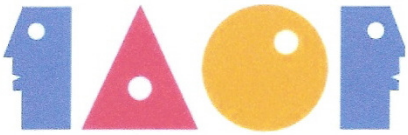

THE QUALITY OF SERVICE AT COMMUNITY HEALTH CENTERS IN TAIWAN

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Abstract

The purpose of this study is to use the model of service quality concepts to evaluate the service qualities of "community health centers" in order to find out the service quality gaps and thus reinforce the competitive edge. This study took Datong District Health Centre in Taipei city as the research object and performed a questionnaire survey with internal and external customers. In terms of internal customers (service staff), 50 employees participated and a total number of 50 effective questionnaires were returned. In terms of external customers, convenience sampling was adopted to collect the questionnaires, 679 answered questionnaires were returned, effective copies being 667. The research tool was the questionnaire that was designed mainly on the basis of SERVQUAL (the scale of service quality determinants) and with reference to the practical data of service process during its implementation at subject service departments. The findings included the conclusions such as "there exists significant effect between service quality and customer satisfaction", "the biggest difference among service qualities is service performance gap (GAP3), showing that there is still a room for improvement regarding the service provided at the health centre" and "different demographic variables have significant effects on customer satisfactions, e.g. higher age groups, lower education level and jobless people have lower satisfaction on the service received". The research result can be provided to relevant organisations as a reference for improvement.

Keywords：service quality, community health centre, PZB quality theory

Introduction

The current medical service operation in domestic hospitals is to provide service when patients seeking treatment. The health promotion to community residents at ordinary times cannot provide effective and prompt medical consultation and health management service. The government should take the following standards as the yearly health inspection comparison, i.e. to strengthen the function of community health centre, to provide health education service on prevention, health care as well as health consultation, to build up individual health administration archives so to establish sustainable mutual relationships. However, with the pro- active innovation in the service industry, the public will naturally increase their expectancy on service quality. Therefore, health centres must reflect about the requirements of service quality and take actions in advance in order to gain competitive edge.

According to the above motivations, this study aims to perform quality management analysis on health centres, taking the internal and external customers of Datong District Health Centre in Taipei City as the object to explore the merriment indicators of the service quality in health centres and to analyse the service quality evaluation process of health centres. Relevant subjects are as follows:

1. to analyse the service quality items and priorities at health centres to learn about the characteristics of employees and customers at health centres;
2. to explore if there are significant differences among expectations and perceptions that customers, internal and external, have on the items of service quality provided by health centres;
3. to explore if there are significant differences among internal and external customers' demographical variables and expectations/perceptions on service quality provided by health centres.

Literature Review

Service quality

Some scholars (Regan, 1963; Kotler, 1984; Buell, 1984; Juran, 1986; Murdick, 1990; Lovelock, 1991) have different definitions of "service" but all of them have one thing in common regarding the nature. Lin Jianshan (1992) combines the opinions of other scholars and points out that service has five characteristics which are intangibility, inseparability, heterogeneity, perishability and ownership. The word "quality" is commonly used in daily life, both in manufacturing and in service industry. Scholars have different definitions for "quality" (Juran, 1986; Crosby, 1979; Garvin, 1983; Deming, 1981). Zhang (1996) points out that Deming's definition is the most positive one, which indicates that quality is from the custom-

ers' point of view, which means it should not only satisfy but also promote customer satisfactions.

Therefore, in the study of concepts such as quality, expectation and perception level, Parasuraman, Zeithaml and Barry (hereinafter referred to as PZB) developed a more detailed conceptual model of the service quality in 1985 (as indicated in figure 2- 1). The major concept of this model is to explain the reason why service quality in service industry cannot meet customers' demands. This model emphasises the interactive relationship between operators and customers in the process of service. No matter which kind of service category it belongs to, it must eliminate five service quality gaps to meet customer needs completely and properly. The service quality gaps are as follows:

1. GAP 1: customer expectation - management perception gap;
2. GAP 2: management perception - service quality specification gap;
3. GAP 3: service quality specification - service delivery gap;
4. GAP 4: service delivery - external communication gap;
5. GAP 5: expected service - perceived service gap.

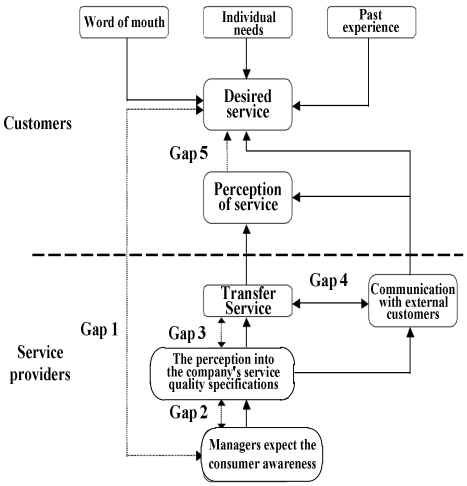

Figure 2-1 Conceptual model of service quality (Parasuraman, et al., 1985)

There are five service gaps in this model and these five gaps are the reason why service operators' service standard cannot meet customer expectations. The differences of these five gaps must be reduced if a operator wants customer expectations to be satisfied. Among these five gaps, gap 1 to gap 4 are the major barriers for the service quality provided while gap 5 is caused by the differences between the service expected by customers and the service perceived by customers. Gap 5 is also the function from gap 1 to gap 4, i.e. Gap5=*f* (Gap1, Gap2, Gap3, Gap4), therefore Parasuraman, Zeithaml and Berry (1985) consider that service expected (E, Expected) and service perceived (P, Perceived) determine the size and the direction of the service quality (SQ) perceived by customers, i.e. SQ=P-E.

According to such a definition, we can list the following three types of the relationships between the level of expectation and the level of perception:

1. E>P, showing that customers think service quality is not good and they are unsatisfied;
2. E=P, showing that customers think of service quality is okay and therefore they are satisfied;
3. E>P, showing that customers think service quality is very good and therefore they are very satisfied.

PZB simplifies the 10 service quality factors into five as shown in table 2- 1. Descriptions and components of each gap are as follows:

1. GAP 1: customer expectation - management perception gap;
2. GAP 2: management perception - service quality specification gap;
3. GAP 3: service quality specification - service delivery gap;
4. GAP 4: service delivery - external communication gap;
5. GAP 5: expected service - perceived service gap.

The five- factor structure is a five-factor service quality evaluation model composed by 22 items. The structure has a good credibility, effectiveness and low repeatability. It's named as "SERVQUAL". The following is the explanation of the simplified five factors that can evaluate service quality:

1. Tangibility: the presentation of the premise, physical equipment and service staff's appearance;
2. Reliability: the capacity to provide promised service reliably and accurately;
3. Responsiveness: the service staff's ability to help customers and provide instant service;
4. Assurance: the servic staff's expertise, politeness and the ability to gain customer trust;
5. Empathy: the service staff's concern and particular care to customers.

The questionnaire of this study is designed on the basis of PZB five factors to measure service quality of health centers.

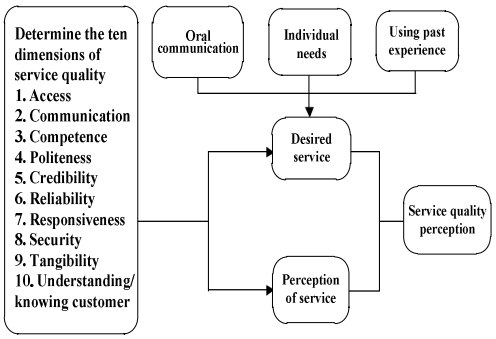

Figure 2-2 Conceptual Framework perception of service quality factors (Parasuraman, et al., 1985)

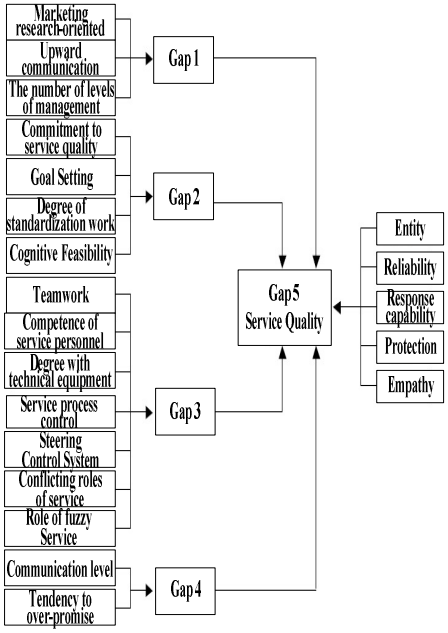

Figure 2-3 The relationship of service quality gap and measure factor after correction

Patient satisfaction and quality of medical service

Definition of patient satisfaction.

The patient satisfaction is the subject attitude generated after a patient receives a medical service. Service quality can thus be evaluated from the structure, procedure

and results. Patient satisfaction is the evaluation of results. The patient satisfaction can be defined as " the difference between the expectation that a patient has before receiving medical care and the perception that patient perceives after receiving medical care". If the perception received by a patient is higher than his expectation, his satisfaction presented will be higher and vice versa.

Measurement of medical service quality.

The method that can be used to measure medical service quality and to represent patient satisfaction correctly become the critical subject of a medical service industry. The current measurement perspectives are mainly from the three perspectives mentioned by Donabedian (1980), i.e. structure- process- outcome.

1. Structure perspective:

These include the environment, instruments and equipments, administration, amount of service staff, quality and educational training of service staff etc.

2. Process perspective:

The follow- up treatment including diagnosing, writing a prescription, arranging hospitalization and surgery etc.

3. Outcome perspective:

The commonly used outcome evaluation factors in medical service industry include mortality rate, infection rate in hospital, incidents of complication, medical failure and in- house infection rate etc.

Robert and Kathleen (1987) considered that only when the structure, process and outcome in medical service are included in the consideration of evaluation, the comprehensive service quality of a hospital can be concluded.

Relationship between patient satisfaction and medical service quality.

This means that the higher the patients' evaluation on medical service quality is, the more satisfied he is and the more willingly he'll come back to the same hospital.

Relationship between medical service quality and service quality.

According to the above literature review, we can convert Donabedian's three perspectives of "structure- process- outcome" into five perspectives in "SERVQUAL", i.e. PZB service quality conceptual model, to measure medical service quality at health centres. Through the combination of " structure" with tangibility, credibility, responsiveness, security and concern, quantitatives analysis evaluations can be made through questionnaire process to produce the outcome of the satisfaction data, as indicated in figure 2- 4.

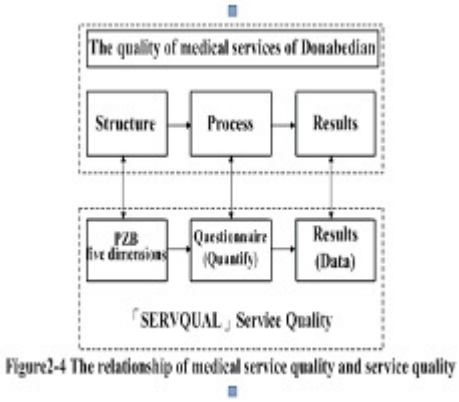

Figure2-4 The relationship of medical service quality and service quality

Health Centers

Taipei health centers are transformed from original health bureaus. The object of this study is Datong District Health Center in Taipei City, which is an old district but developed earlier in Taipei and merged with five other districts in the invasion period by Japan, like Penglai, into one of the 10 bigger districts in Taiwan.

Methodology

Research structure

The structure of this study is established upon the objective, motivation and literature review. The service quality model developed by Parasuraman, Zeithaml and Berry (1985) discusses that service quality determinants will influence the comparison between the actual acceptance of the service process and the service expected by customers, as well as customer satisfaction due to different gaps, i.e., customer expectation - management perception gap (Gap 1), management perception - service quality specification gap (Gap 2), service quality specification - service delivery gap (Gap 3), service delivery - external communication gap (Gap 4) and expected service- perceived service gap (Gap 5). Besides, Koteler (1999) thinks that customer satisfaction is the function of perceived performance and expectation. as indicated in figure 3- 1.

Hypotheses

According to the research structures and literature, we can derive the following hypotheses:

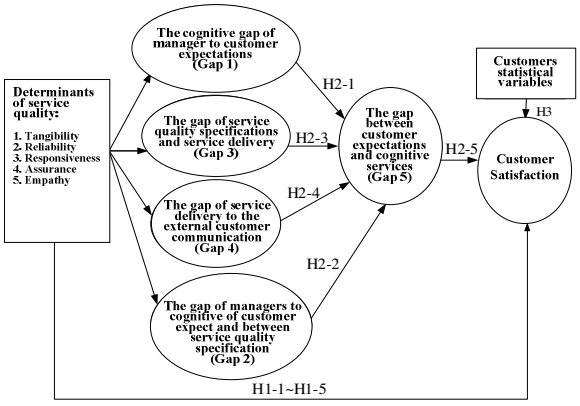

Figure 3-1 Research framework

H1: Service quality factors have significant effect on customer satisfaction.

H2: PZB quality model has significant effect on perspectives of perceived service.

H3: Different demographic variables have significant effects on customer satisfaction.

Design of research

This study will explore the five gaps of service quality through questionnaires and will build up the quality model and satisfaction connotation suitable for health centers.

Design of questionnaire

This study uses the SERVQUAL service quality determinant developed by Parasuraman, Zeithaml and Berry (1994) as the major accordance and refers to the

actual data of the service process at individual departments during its implementation to design a questionnaire. All the 22 questions in five perspectives use five-score Likert scale. The internal consistency coefficient value is among .87 and .93, while all VE values being above .5, all square roots of AVE value of each prospective being bigger than correlation coefficient values, as shows that the questionnaire has a sound and constructive validity.

Operational definition of research variables

This study tries to transform the five- gap perspectives in PZB model into the operational definition of service quality at health centres and to design every factor as a question. The operational definitions are as follows:

1. Management perception gap (Gap 1): the difference between the perception of the service on customer expectation by the management at health centres and the service expected by customers;
2. Management criteria gap (Gap 2): the difference between the specification perceived by the management and the service specification developed by them;
3. Service performance gap (gap 3): the difference between the service specifications provided by staff at health centres and that expected by customers
4. Internal communication gap (Gap 4): the publicity and appraisals from the public on health centres exceed the service that can be provided by the service staff, as causes customers to expect too much from health centres,
5. Service quality gap (Gap 5): the difference between the service quality and health centres after receiving service and the service quality expected before receiving service. The accumulation of the first four gaps shows a different which is GAP 5.

Design of sampling

This study took Datong District Health Centre in Taipei City as the research object and carried out questionnaire surveys to the internal customers and external customers. In terms of internal customers, i.e. the service staff, 50 employees participated in the survey and 50 questionnaires were returned, with an effective return rate of 100%. In terms of external customers, this study used convenience sampling to collect the questionnaire in the consideration of respecting customers own wills and not disturbing the operation in health centre or making customers feel affected. Until October 31, 2011 the collection of questionnaires from the customers of the health centre was finished and answered questionnaires returned were 679. After reviewing the returned questionnaires, there were 12 uncompleted ones (missing answers), therefore the total effective questionnaires returned were 667, the effective return rate being 98%.

Research Findings

Analysis of sample structure

Regarding the fundamental information of customers participated in the survey, 167 are males (24.6%) and 500 are females (73.6%). 20 people (2.9%) are under the age of 20; 240 (35.3%) are between 20 and 40 years old, 252 (37.1%) are between 40 and 60 years old; 160 (23.5%) are 60 and 80 years old; 4 (0.6%) are above 80 years old; 3 (0.4%) have no answers. Regarding the education level, 89 (13.1%) are below primary school level, 72 (10.6%) are at high school level, 193 (28.4%) at at occupational high school level, 284 (41.9%) are at college level; 35 (5.2%) are at institution level, 6 (0.9%) have no answers. Regarding occupation, 235 (34.6%) are jobless; 114 (16.8%) work in service sectors; 10 (1.5%) work in industries; 80 (11.8%) work in business field; 1 (0.1%) work in agriculture and fishing; 101 (14.9%) work in education field; 20 (2.9%) are students; 105 (15.6%) work in other fields or are freelancers; 12 (1.7%) have no answers. The samples are evenly distributed in each category.

Analysis of ranking of service quality expectation and perception

According to the valid questionnaires returned, a ranking analysis is made according to the expectation and perception on service quality by internal and external customers of the health centre. An analysis whether there are gaps between their expectations and perceptions in accordance with respondents' background information is made. Then important factors that form the expectation and perception of service quality evaluation factors are listed. An exploration of prospective characteristics of forming factors on respondents is made finally. The purpose of the ranking analysis is to learn about the priorities of expectations and perceptions in each question and to the take it as the accordance to improve the current conditions.

Analysis of service quality expectation factors

It can be concluded after analyses that staff at health centres pay most attention to "reliability" of GAP5, and then security and then tangibility, thus the order of emphases on expectation factors of GAP5 by staff at health centers is reliability, security, responsiveness, empathy and tangibility. However, customers pay most attention to responsiveness and then security and then tangibility, thus the order of emphases on expectation factors of customers is responsiveness, security, reliability, empathy and the tangibility.

Analysis of service quality perception factors

It can be concluded after analyses that, among perception level factors of service quality gap (GAP5), service staff is most satisfied with their reliability and then responsiveness while they are not very satisfied with tangibility. Thus the order of customer satisfaction with expectation of service quality gap (GAP5) is

responsiveness, reliability, security, empathy and tangibility.

Relationship between service quality factors and customer satisfaction

This study applies regression model to analyse and discuss the effect of service quality of customer satisfaction, using the five perspectives of service quality factors (tangibility, reliability, responsiveness, security and empathy) as independent variables and customer satisfaction as dependable variables to construct the regression model. The findings show that the verified values of both overall variable R2 and F value has achieved significant effect, that is to say, having an interpret ability and showing a significant relationship with customer satisfaction, i.e. H1- 1 to H1- 5 are all supported.

Relationship between PZB quality model and perceived service

In order to verify H2, paired samples are used to verify and evaluate the differences between service qualities, i.e. to evaluate the differences between service quality expectations and perceptions of service by the stuff and customers who take part in the survey. The finding is that GAP1, GAP 3 and GAP5 values achieve significant differences, service performance gap (GAP 3) having the biggest difference (averaged at 2.66). It can be concluded from the analysis that there are differences in terms of the internal service staff's expectations and perceptions on some of the evaluation subjects and the differences are quite significant. The values of expectations and perceptions by customers are all positive. Therefore it can be concluded that external customers are satisfied with the services that the health center provides. Additionally, evaluations from internal customers show that perception level is lower than expectation level, which means that the service quality provided by the health center still has a room for improvement. Therefore, H2- 1, H2- 3 and H2- 5 receive support.

Difference verification analysis of demographic variables

The purpose of this section is to verify H3 and the approach is to use T- test and analysis of variance (ANOVA) to study the differences between expectations and perceptions of customers on service qualities by demographic variables, so as to learn about the expectations and perceptions on service quality by customers with different demographic variables such as gender, age, educational level and health conditions. The analysis of the relationship between satisfaction and age arrives at the finding that people at 51- 60 and 61- 70 give lower scores on their satisfaction level, they show unsatisfaction at almost every aspects of the service quality. In the analysis of the relationship between satisfaction and educational level, the people have low educational level appears to have lower satisfaction level with the service quality. In the analysis of the relationship between satisfaction and occupation, jobless (including housekeeping) people have the lowest satisfaction level.

Finally, in the analysis of the relationship between satisfaction and health condition, those who have lower self- evaluation of their health conditions (one standard deviation lower than the average value) show lower level of satisfaction. Therefore H2- 1, H2- 3 and H2- 5 receive support.

Conclusions and Suggestions

The current trend of industry development has changed from "production- oriented" to "marketing- oriented", as leads to the increasing competitive pressures on health centres. How to promote patient satisfaction and hold on with the concept of valuing customers most and treating patients and their families friendly has become a critical theme. This study arrives at the following conclusions:

Research conclusions

The verification restults of all hypotheses in this study through empirical analysis are indicated in Table 5- 1:

Table 5- 1 Verification results of hypotheses

Item	Description	Result
H1	Service quality factors have significant effect on customer satisfaction.	True
H2	PZB quality model has significant effect on perceived service perspectives.	Partially true
H3	Different demographical variables have significant effect on customer satisfaction.	Partially true

Managerial implications

In terms of service expectation.

Speaking of internal employees and external customers, among the five gaps, employees pay more attention to service performance gap (GAP3), implying that employees value this factor highly, therefore health centers should arrange on- the- job training or advanced eduction to employees so that service quality can be improved. Taking consideration of service quality gap (GAP5), employees pay more attention to "reliability", implying employees value this factor really highly, therefore health centres should focus on the fact if they can actually provide the services promised so that customers will value health centres more. However, customers pay attention to "responsiveness", implying that customers value this factor highly. Therfore, if health centres can educate the service staff to have enthusiasm, service spirit, politeness and to gain customer trust, service quality will be promoted.

In terms of service perception.

Speaking of internal employees and external customers, analysis and evaluation results show that the item that employees are not satisfied with and health centres are bad at is "role contradictories" in management perception gap (GAP3), implying that health centres should simplify their internal procedues. Thus enhancing the service concept of putting customers in the centre can reduce the differences between service qualities. In

service quality gap (GAP5), employees are not happy with the item “tangibility”, implying that employees think premise, physical equipments and the enternal service of service staff are insufficient. The item that customers are not satisfied with and the health center are not good at is “tangibility”, same as internal employees.

Suggestions

To pay attention to service quality.

In order to improve overall services, health centres must perform complete quality management improvements to succeed in a severely competitive environment.

To learn about the needs of patients and their family members.

Since there are great differences between the perceptions of patients and health centres on service quality satisfaction, we suggest that the executives of health centres should try to learn about the real needs of patients and their families and provide different services according to different needs so as to improve the satisfaction of patients and their family members on service quality. Meanwhile, the service staff should enhance their interaction with patients, gaining information through written forms or regular disscusstions so as to realize complete quality management plans.

To arrange training courses for service staff.

Health centers should enhance service staff’s professional training and reminding their about the service attitude because health centres have a high degree of customer contact and service staff’s competence, communication capacity and other service attitudes will affect the satisfaction of patients and their family members. Therefore, the instruction of customer- oriented spirit to service staff is necessary.

To develop a detailed plan that can improve service quality.

To promote service quality has become an important differentiated strategy for service providers to retain sustainable competitive advantages. The promises and supports from the executives as well as well- planned long- term service quality plans are the most important managerial implication of promoting over quality management.

We hope that the suggestions provided in this study can offer substantial help to health centres and the improvement of service quality can meanwhile promote operational performance, help reinforce the function and contribution of medical sector to the whole society and promote the sound development of medical care environment.

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