

**MEASURING SERVICE QUALITY AT BINH PHUOC HOSPITAL-  
A DIMENSION-BY-DIMENSION ANALYSIS**

**Ha Nam Khanh Giao<sup>(1)</sup>, Le Anh Phuong<sup>(2)</sup>**

(1) International University, VNU-HCM

(2) Krohde-Schwarz Company

*(Manuscript Received on July 22<sup>nd</sup>, 2009, Manuscript Revised January 29<sup>th</sup>, 2009)*

**ABSTRACT:** *Service quality is still a new concept to those working in health care services since it has not been identified as a mandatory factor to increase competitiveness. Although Binh Phước Hospital has implemented a survey on patients' comments, the result has not yet reflected the comprehensive service quality given by the hospital.*

*The research aims to conduct an assessment on service quality at Binh Phước Hospital based on the model of SERVQUAL under the form of dimension-by-dimension analysis. The outcome would help the management to have a clear and full picture about the current service quality. Consequently, recommendations will be provided according to the findings.*

**Keywords:** *SERVQUAL, hospital, measuring service quality.*

## **1. INTRODUCTION**

### **Background**

During the past five years, the living standard of Vietnamese people has been significantly increasing. Vietnam is considered as emerging economy of Asia Pacific. Service sectors have started to be shaped and grown so fast, in which health care service becomes more and more important. However, it can be seen that the current capability of hospitals does not meet the high demand of patients in Vietnam. Regarding health care service in Vietnam, "service quality" is a relatively new academic phrase. An understanding, and measurement, of service quality has been aware and evaluated by the patient is very crucial and essential for the hospitals to recognize the current level of service provided and whether

current service quality meet patients' expectations.

Binh Phuoc General Hospital is based in Dong Xoai town, Binh Phuoc province. Established since 1999, the hospital now has seven departments and twenty medical wards with total employees of 546. The bed capacity of the hospital reaches 450 beds with the total of inpatients of 31,277 and 37,246 in 2007 and 2008 respectively (Binh Phuoc Hospital, 2008).

The research aims to assess the current service quality at Binh Phuoc Province General Hospital basing on SERVQUAL model, to explore patients' expectations on service quality at internal medical ward of Binh Phuoc Province General Hospital.

## **2. THEORY BASE OF SERVICE QUALITY**

### 2.1. Characteristics of Services

Many definitions of service are defined and most of all contain a common theme of intangibility and simultaneous consumption. To make it simple, “services are deeds, processes, and performances” (Zeithaml & Bitner, 2000).

The characteristics of service made it differ from physical goods. It includes four main features: intangibility, heterogeneity, perishability, inseparability of production and consumption (Parasuraman, Zeithaml & Berry: 1988).

### 2.2. Definition of service quality

Service quality is a highly abstract construct, where all the characteristics are different to goods. Service quality based on perception concept is developed by Parasuraman, Zeithaml and Berry (1985, 1988) in a way of five gaps. They proposed SERVQUAL model in which service quality is a function of the differences between expectation and performance along the quality dimensions. They developed the gap model in which they defined perceived service quality “as the degree and direction of the discrepancy between consumers’ perceptions and expectations”. The model predicted that perceive service quality could be quantified by the measurement of subtracting the consumers’ rating perception of service quality (P) and their rating expectation of service quality (E) calculated as Service Quality = P – E.

### 2.3. Measuring Service Quality

The research would use SERVQUAL (Service Quality) model developed by Parasuraman, Zeithaml and Berry (1988). The SERVQUAL with five dimensions including 22 items (statements), and a 5 point Likert scale, with “Strongly Disagree” equal to value 1 and “Strongly Agree” equal to value 5, that purportedly measure consumer’s expectations and perceptions of service performance. The five dimensions of SERVQUAL model used are:

**Reliability:** The ability to perform the promised service both dependably and accurately

**Responsiveness:** The willingness to help customers and to provide prompt service.

**Assurance:** The knowledge and courtesy of employees as well as their ability to convey trust and confidence.

**Empathy:** The provision of caring, individualized attention to customers.

**Tangibles:** The appearance of physical facilities, equipment, personnel, and communication materials.

By measuring the gap scores, service quality = Customers’ Perceptions (P) – Customers’ Expectation or in short  $Q = P - E$ , each service quality aspect is analyzed to providing the research results. Then the dimension-by-dimension analysis is conducted.

## 3. ANALYSIS ANG FINDINGS

### 3.1. Sample description

Data were gathered from a sample of 250 respondents whose age were above fifteen. At the end of survey, 181 questionnaires were collected corresponding to the response rate of 72.4%. Nevertheless, among the returning data, only 128 questionnaires were available to analyze as they provide enough information for analysis. 53 of questionnaires were omitted due to specific reasons

According to the statistics data, 89.8 % of respondents are Kinh people whereas 10.2 % belongs to other ethnic minorities. 62.5% of participants are male, and 37.5 % of participants are female. Inpatients have 78.9 %

while outpatients have 21.1 % of those joined in the survey. In terms of payment, free-of-charge cases are not many, only 3.1 %, chargeable cases account for 49.2 % and payment under health insurance is 47.7 %.

### 3.2. Respondents response of Expectation

Table 1 indicates that the expectation scores are consistently high across all dimensions, although that for Empathy was noticeably lower. More detailed analysis on expectation score will be provided in the following part. Summary score classified into dimension is presented as below.

**Table 1.** Descriptive Statistics of Expectation

	Items	N	Min	Max	Mean	Std. D
E1	Doctors/Nurses use up-to date equipment for treatment.	128	1	5	4.40	.714
E2	Hospital is always clean, hygiene.	128	1	5	4.51	.794
E3	Hospital staff will be neat in appearance.	128	1	5	4.42	.728
E4	Hospital has clear and informative guiding boards.	128	2	5	4.49	.640
E5	Patients have trust in their dealing with the hospital.	128	1	5	4.46	.720
E6	When patients have problems, hospital staff will show a sincere interest in solving it.	128	1	5	4.38	.733
E7	Hospital always provides free-error treatment diagnosis.	128	1	5	4.55	.772
E8	Patients are informed clearly about their health condition.	128	2	5	4.49	.710
E9	Patients are informed clearly about the medical treatment that they will receive.	128	1	5	4.36	.801
E10	Hospital keeps medical record of patients individually.	128	1	5	4.20	.873
E11	Hospital staff will inform patients exactly when services will be performed.	128	3	5	4.43	.584
E12	Hospital staff will provide prompt service when requested.	128	1	5	4.39	.806
E13	Hospital staff are always be willing to help patients.	128	1	5	4.41	.737
E14	Staff will never be too busy to respond to patients'	128	1	5	4.18	.798

	questions.					
E15	During duty period, hospital staff always provide prompt service.	128	1	5	4.22	.752
E16	Hospital staff are consistently courteous with patients.	128	2	5	4.48	.753
E17	Hospital staff have knowledge to answer patients' questions.	128	2	5	4.49	.687
E18	The care of hospital staff instills confidence in patients.	128	1	5	4.52	.675
E19	Hospital has operating hours convenient to patients.	128	1	5	4.42	.728
E20	Hospital staff show attention to individual patient.	128	1	5	4.21	.790
E21	Hospital staff understand the specific needs of patients.	128	1	5	4.05	.925
E22	Hospital staff understand the patients' best interest.	128	1	5	4.10	.859

**3.3. Respondents response of Perception**

On the contrary, table 2 shows perception scores reflected patients' perception on service

performance given by Bình Phước hospital.

The lowest scores fell into empathy dimension indicating that the individualize attention provided was not relative high.

**Table 2.** Descriptive Statistics of Perception

	Items	N	Min	Max	Mean	Std. D
P1	Doctors/Nurses use up-to date equipment for treatment.	128	1	5	3.69	.903
P2	Hospital is always clean, hygiene.	128	1	5	3.46	1.149
P3	Hospital staff will be neat in appearance.	128	1	5	3.91	.837
P4	Hospital has clear and informative guiding boards.	128	1	5	3.72	.896
P5	Patients have trust in their dealing with the hospital.	128	1	5	3.53	.996
P6	When patients have problems, hospital staff will show a sincere interest in solving it.	128	1	5	3.45	1.011
P7	Hospital always provides free-error treatment diagnosis.	128	1	5	3.52	.964
P8	Patients are informed clearly about their health condition.	128	1	5	3.79	.953
P9	Patients are informed clearly about the medical treatment that they will receive.	128	1	5	3.73	1.010
P10	Hospital keeps medical record of patients individually.	128	1	5	3.81	.920
P11	Hospital staff will inform patients exactly when services will be performed.	128	1	5	3.84	.909
P12	Hospital staff will provide prompt service when requested.	128	1	5	3.38	1.036
P13	Hospital staff are always be willing to help patients.	128	1	5	3.52	.972

P14	Staff will never be too busy to respond to patients' questions.	128	1	5	3.30	.901
P15	During duty period, hospital staff always provide prompt service.	128	1	5	3.30	1.030
P16	Hospital staff are consistently courteous with patients.	128	1	5	3.48	.939
P17	Hospital staff have knowledge to answer patients' questions.	128	1	5	3.59	.934
P18	The care of hospital staff instills confidence in patients.	128	1	5	3.55	.971
P19	Hospital has operating hours convenient to patients.	128	1	5	4.02	.931
P20	Hospital staff show attention to individual patient.	128	1	5	3.55	1.002
P21	Hospital staff understand the specific needs of patients.	128	1	5	3.24	1.025
P22	Hospital staff understand the patients' best interest.	128	1	5	3.19	1.070

**3.4. Reliability analysis**

Cronbach's alpha was used to assess the reliability of a set of variables of a survey. Variable whose corrected item-to total correlation was smaller than 0.3 would be omitted. Criteria to choose the variable was that coefficient alpha was greater than 0.7 (Hoàng Trọng & Mộng Ngọc, 2005).

As seen from the table, Cronbach's alpha of reliability dimension has 0.804, which passed the cut-off value required for further analysis. However, there was one item E10 "Hospital keeps medical record of patients individually" which corrected item-to total correlation was really small compared to other items in the same dimension. Additionally, corrected item-to total correlation of E13 "Hospital staff is always be willing to help patients" is below the criteria of 0.3 (Hoàng Trọng & Mộng Ngọc, 2005). Therefore, we

decided to delete these items for the next analysis stage. Cronbach's alpha of reliability dimension was again computed without E10 and E13. Alpha value increased to 0.84. Similarly, perceived data was applied to the scale reliability check. Cronbach's alpha were almost high and above 0.7.

**3.5. Gap between customer expectation and perception**

In table 3, the gap score for each statement is calculated as Perception - Expectation. A positive gap score shows that expectations have been met or exceeded and a negative score demonstrates that expectations are not being met. Then the gap scores for each dimension (Di) are assessed, and finally that of the average gap score of service quality (Av)

**Table 3.** Gap between customer expectation and perception

	Items	P	E	P-E	Di	Av
--	-------	---	---	-----	----	----

<b>Tangibles</b>	E1	Doctors/Nurses use up-to date equipment for treatment.	3.69	4.4	-0.71	-0.76	-0.81297
	E2	Hospital is always clean, hygiene.	3.46	4.51	-1.05		
	E3	Hospital staff will be neat in appearance.	3.91	4.42	-0.51		
	E4	Hospital has clear and informative guiding boards.	3.72	4.49	-0.77		
<b>Reliability</b>	E5	Patients have trust in their dealing with the hospital.	3.53	4.46	-0.93	-0.84	
	E6	When patients have problems, hospital staff will show a sincere interest in solving it.	3.45	4.38	-0.93		
	E7	Hospital always provides free-error treatment diagnosis.	3.52	4.55	-1.03		
	E8	Patients are informed clearly about their health condition.	3.79	4.49	-0.7		
	E9	Patients are informed clearly about the medical treatment that they will receive.	3.73	4.36	-0.63		
<b>Responsiveness</b>	E11	Hospital staff will inform patients exactly when services will be performed.	3.84	4.43	-0.59	-0.85	
	E12	Hospital staff will provide prompt service when requested.	3.38	4.39	-1.01		
	E14	Staff will never be too busy to respond to patients' questions.	3.3	4.18	-0.88		
	E15	During duty period, hospital staff always provide prompt service.	3.3	4.22	-0.92		
<b>Assurance</b>	E16	Hospital staff are consistently courteous with patients.	3.48	4.48	-1	-0.82	
	E17	Hospital staff have knowledge to answer patients' questions.	3.59	4.49	-0.9		

	E18	The care of hospital staff instills confidence in patients.	3.55	4.52	-0.97	
	E19	Hospital has operating hours convenient to patients.	4.02	4.42	-0.4	
<b>Empathy</b>	E20	Hospital staff show attention to individual patient.	3.55	4.21	-0.66	-0.79
	E21	Hospital staff understand the specific needs of patients.	3.24	4.05	-0.81	
	E22	Hospital staff understand the patients' best interest.	3.19	4.1	-0.91	

There is no statement of how a gap score is considered high, especially when using the 1-5 Likert scale system from the previous researches (Parasuraman et al, 1988, Ziethaml et al., 1988, 2000, Karen, 1988, Hoffman & Bateson, 2000). Let's assume that the gap score of under 0.5 (less than 10% of the highest score of 5) is low, the gap score from 0.5 to 1 is acceptable, from 1 to 1.5 is rather high, from 1.5 to 2 is high, over 2 is too high (the service quality is performed poorly).

In general, we got the negative score for all gaps between perception and expectation on all dimensions, the average gap score is -0.8129, which can be considered acceptable for the overall service quality. The result shows that the three factors "Responsiveness", "Reliability" and "Assurance" have scores higher than -0.8 (-0.85, -0.84 and -0.82 respectively), whereas the other two "Tangibles" and "Empathy" have scores lower than -0.8 (-0.76, and -0.79 respectively). All are in the range of acceptable.

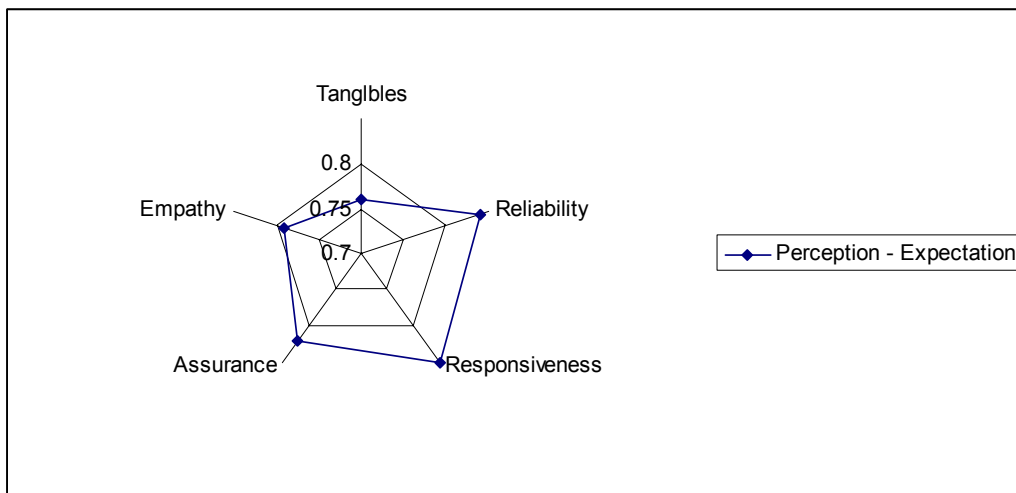


Figure 1. Gaps between perception and expectation on dimension



The radar chart in Figure 1 shows us the gaps between perception and expectation on dimensions in general. From that Figure, it is easy to see that the customers evaluate the service quality of Binh Phuróc hospital almost the same throughout the dimensions. They see all dimensions- Tangibles, Reliability,

Responsiveness, Assurance and Empathy at upper high of the acceptable range, so all are needed to be improved down to low range, especially in the health care services, where the service quality is at high level of importance. The details of each dimension are shown in the following figures:

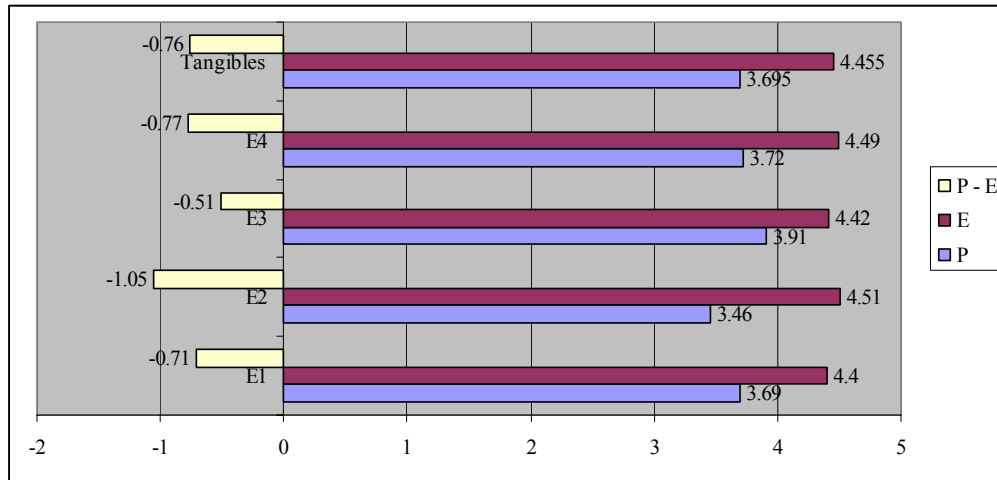


Figure 2. Tangibles gap

From Figure 2, we can recognize that E3 “Hospital staff will be neat in appearance” contributes not much in the Tangibles gap score (-0.51), but E1 “Doctors/Nurses use up-to date equipment for treatment” (-0.71), E4 “Hospital has clear and informative guiding boards” (-0.77), whereas E2 “Hospital is

always clean, hygiene” get a high gap score of -1.05. That means Binh Phuróc hospital may have enough infrastructure but it is not visually appealing, and it is a little far away from customer’s expectation, especially in terms of sanitary.



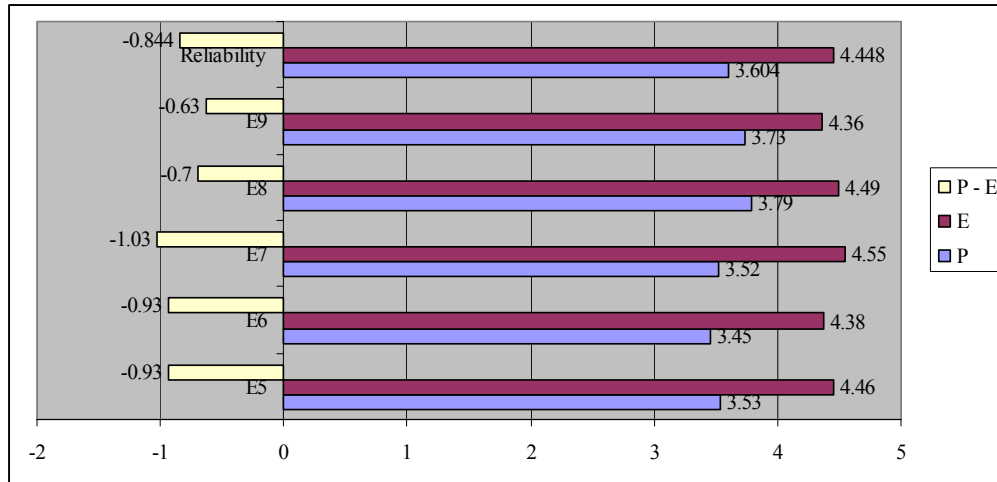


Figure 3: Reliability gap

In the details of Reliability factor, E7 “Hospital always provides free-error treatment diagnosis” has very high expectation value (4.55) but the perception is only (3.52), so the gap score is in negative (-1.03) and this is the highest gap in this factor, it indicates that this variable is quite important in customers’ expectation, however, the perception is not so high. The two runner ups are E5 “Patients have trust in their dealing with the hospital” (-0.93) and E6 “When patients have problems, hospital staff will show a sincere interest in solving it” (-0.93), they are almost reach the value of 1,

show that the service quality of Binh Phước hospital in terms of these variable needed to be improved. E8 “Patients are informed clearly about their health condition” (-0.7) and E9 “Patients are informed clearly about the medical treatment that they will receive” (-0.63) have gap scores in the accepted range. This shows that the patients somehow accept the way of issuing information. We also need to pay attention in the high scores of Expectation in this factor, it means that the customers expect much of the service.

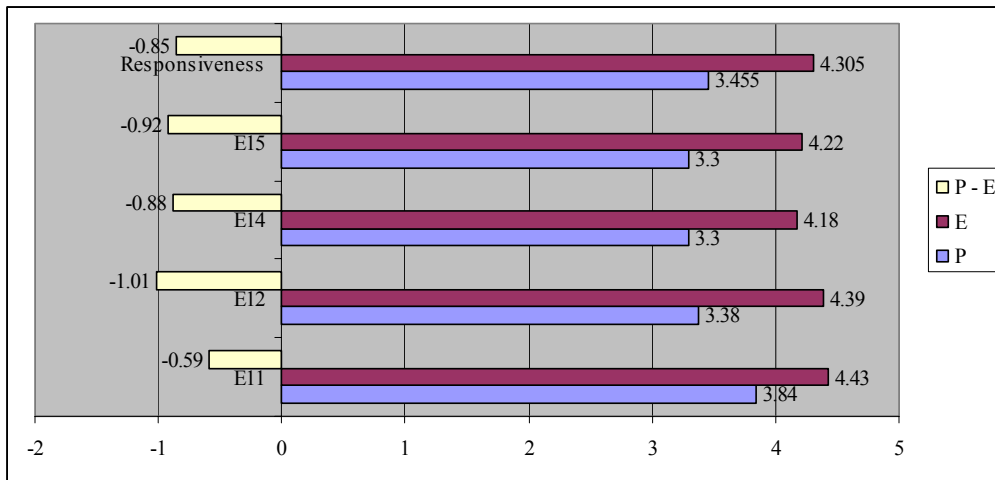


Figure 4. Responsiveness gap

Figure 4 is about Responsiveness factor, where the average gap score is at the highest position (-0.85), in which the biggest gap score E12 “Hospital staff will provide prompt service when requested” (-1.01) is in the range of rather high, that means the hospital needs to improve the time to react to the customers’ requests. Then the two E14 “Staff will never be too busy to respond to patients’ questions” (-0.88) and E15 “During duty period, hospital

staff always provide prompt service” (-0.92) have almost the same gap scores show the acceptable service. And the last E11 “Hospital staff will inform patients exactly when services will be performed” (-0.59) is also in acceptable range. It shows that Binh Phuróc hospital’s responsiveness to customers’ requests is acceptable in general, except the prompt service upon request.

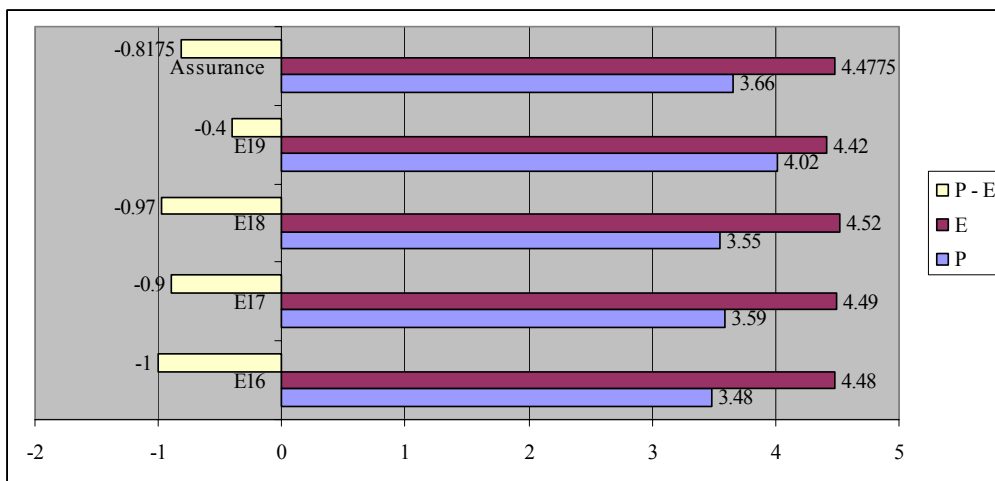


Figure 5. Assurance gap

We got the negative score for all four variables in this dimension, in which three variables have the gap score above the average score (-0.8175) and the biggest gap score on E16 “Hospital staff are consistently courteous with patients” (-1.00) reach the range of rather high. E17 “Hospital staff have knowledge to answer patients’ questions” (-0.9) and E18 “The care of hospital staff instills confidence in patients” are also at the upper high position in

the acceptable range, means they do not meet the customer expectation. The only low score variable is E19 “Hospital has operating hours convenient to patients” (-0.4), means the time to serve patients is suitable at a considerable level. This shows that Binh Phước hospital’s people do not meet well the customers’ expectation, except the serving time. This warns Binh Phước hospital of the people factor in its activities.

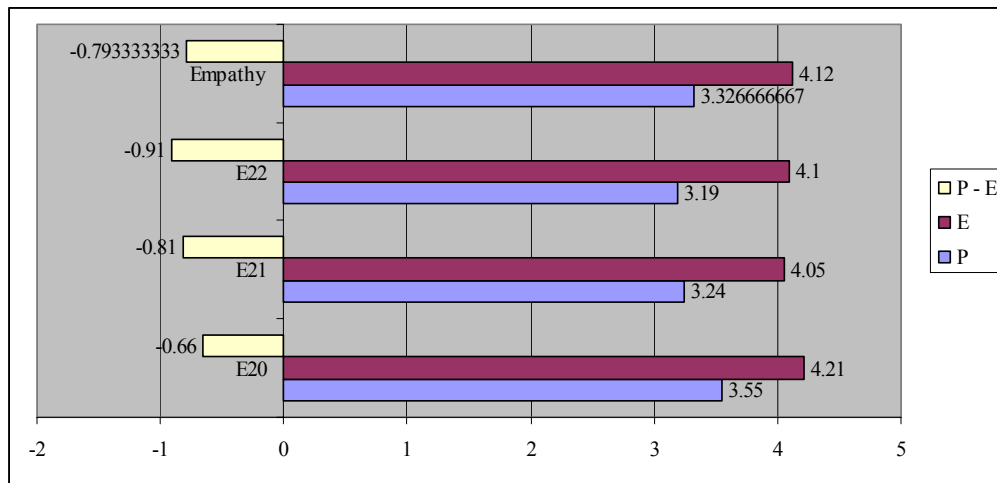


Figure 6. Empathy gap

Figure 6 indicates the average Empathy gap score is rather low (-0.793), in which the biggest gap is E22 “Hospital staff understand the patients’ best interest” (-0.91), then E21 “Hospital staff understand the specific needs of patients” (-0.81), and the last E20 “Hospital staff show attention to individual patient” (-0.66), all are in the acceptable range, show that the service of Binh Phước hospital staff is acceptable to the customers. The other point we should pay attention to is that all the scores for expectation and perception in this dimension

are comparative low, it may mean that this dimension is not considered important in the customer’s expectation, and the hospital did well enough to reach that expectation

#### 4. RECOMMENDATIONS AND CONCLUSION

##### 4.1. Recommendations

Given the importance of service quality in the health care service, and as all dimension gap scores are at the upper high position in the acceptable range of service quality, with regard

to service quality improvement, the recommendations should be for all dimensions as follows:

#### **4.2. Monitoring the service quality regularly**

It will be a good idea to monitor service quality and compare the findings regularly by applying SERVQUAL model. The hospital needs the set up one team which might be collected from administration department. The responsibility of the team is to collect data, then process data, and finally, provide service quality assessment. The management has to communicate with staff to help them understand the purpose of service quality monitoring so that staff awareness can be changed gradually toward professional way by themselves.

#### **4.3. Training and development for hospital staff**

The weakness of Binh Phước hospital was specified as not be able to provide accurate treatment diagnosis. There is only one way to improve that situation, which is increasing medical knowledge. It is suggested to conduct more training for hospital staff in order to develop medical expertise in order to provide reliable service in general and accurate treatment diagnosis in specific.

#### **4.4. Planning the facility investment**

Investment facilities would include medical instruments, medical tools, building, beds, etc. More importantly, investments should be based on actual requirements. The top priority of facility investment is to upgrade

the hygiene and safety environment at Binh Phước hospital.

#### **4.5. Conclusions**

In the attempt of providing a comprehensive assessment on service quality at Binh Phước hospital, the study research was executed together with three objectives containing assessing the service quality, exploring patients' expectations and providing recommendations for the management of Binh Phước hospital. We would like to apply a generic and famous diagnostic tool called SERVQUAL to conduct this research.

From 22 original variables following Parasuraman study, the exploratory analysis excluded 2 variables, then the service quality of health care at Binh Phước hospital is conducted from the viewpoint of dimension-by-dimension descriptive analysis. The results reveal that all dimensions- Tangibles, Responsiveness, Empathy, Reliability and Assurance- are at negative gap scores, and all are in the upper high of acceptable range, that means even though the service quality of Binh Phước hospital is acceptable; it needed to be improved to the point that all dimension gap scores be decreased to low range (less than -0.5), especially in the case of health care service. The research comes up with the recommendations that could help the hospital to improve its service quality in order to reach customers' expectations: to monitor the service quality regularly, to train the staff well and to plan the facility investment.

Obviously, the descriptive analysis which is used in this research is not a strong method to have a better result. Then, using SERVQUAL model which is criticized by Robison (1999)- in terms of areas and nature of disagreements-, and by Francis (1995)- in

terms of theoretical and operational matters-, is not a perfect solution. So, the analysis in this research opens the air for the deeper study of using other models and or other methods to measure the health care service at Binh Phuoc General Hospital.

## ĐO LƯỜNG CHẤT LƯỢNG DỊCH VỤ TẠI BỆNH VIỆN BÌNH PHƯỚC-PHÂN TÍCH SO SÁNH CÁC THANG ĐO

Hà Nam Khánh Giao<sup>(1)</sup>, Lê Anh Phương<sup>(2)</sup>

(1) Trường Đại học Quốc tế, ĐHQG-HCM

(2) Công ty Krohde-Schwarz

**TÓM TẮT:** *Chất lượng dịch vụ vẫn còn là một khái niệm mới đối với nhiều người làm việc trong ngành dịch vụ y tế, vì rằng chất lượng dịch vụ chưa được xem là một tác nhân quan trọng nhằm tăng cường khả năng cạnh tranh. Mặc dù Bệnh viện đa khoa Bình Phước đã từng thực hiện một cuộc khảo sát về ý kiến của bệnh nhân, kết quả khảo sát chưa phản ánh được đầy đủ chất lượng dịch vụ của bệnh viện cung cấp.*

*Bài nghiên cứu nhằm đến việc tiến hành đánh giá về chất lượng dịch vụ tại Bệnh viện đa khoa Bình Phước dựa trên cơ sở mô hình SERVQUAL, dưới dạng phân tích so sánh các thang đo. Kết quả có thể hỗ trợ Ban Giám đốc có một bức tranh tổng quát và khá rõ ràng về tình hình chất lượng dịch vụ hiện tại. Từ đó, các kiến nghị được đề xuất phù hợp với những phát hiện tìm được.*

**Từ khóa:** *chất lượng dịch vụ, bệnh viện, so sánh các thang đo*

### REFERENCE

- [1]. Bệnh viện đa khoa tỉnh Bình Phước, tài liệu phòng Hành chính
- [2]. Francis Buttle, *SERVQUAL: Review, Critique*, Manchester Business School, Manchester, UK, European Journal of Marketing, 30, 1, (1995)
- [3]. Karen P. Goncalves, *Services Marketing – A Strategy Approach*, International Edition, Prentice Hall (1998)
- [4]. Hoàng Trọng – Chu Nguyễn Mộng Ngọc, *Phân Tích Dữ Liệu Nghiên Cứu với SPSS*, Nhà Xuất bản Thống Kê (2005)
- [5]. Hoffman, Douglas K. & John E.G. Bateson, *Essentials of Services Marketing – Concepts – Strategies - Cases*, Second Edition, South-Western (2001)
- [6]. Parasuraman A., Zeithaml V. & Berry L., *A Conceptual Model of Service Quality and its Implications for Future Research*, Journal of Marketing, Vol. 49, pp. 41-50 (1985)
- [7]. Parasuraman, A., Zeithaml, V.A. and Berry, L.L., *SERVQUAL: a Multiple Item Scale for Measuring Customer Perceptions of Service Quality*, Journal of Retailing, Vol. 64 No. 1, pp. 12-40 (1988)
- [8]. Robinson, S., *Measuring Service Quality: Current Thinking and Future Requirements*, Marketing Intelligence & Planning, 17/1, page 30 (1999).
- [9]. Zeithaml, V.A., Berry L.L. and Parasuraman, A, *Delivery Quality Service Balancing Customer Perceptions and Expectations*, Free Press, New York, S.Y (1990).
- [10]. Zeithaml, V.A. & Bitner, M.J., *Services Marketing: Integrating Customer Focus Across the Firm*, Irwin McGraw-Hill, (2000).