INFLUENTIAL FACTORS ON PATIENT SATISFACTION WITH PUBLIC HOSPITALS IN CẦN THƠ CITY

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This research is intended to identify influential factors on patient satisfaction with Cần Thơ City-based public hospitals. Through a survey of 425 patients and a quantitative model for evaluating the patient satisfaction, it pointed out three major influential factors, namely responsibility, assurance and especially responsiveness. Of these, responsiveness is the most influential factor.

Keywords: patient, public hospital, satisfaction

1. Introduction

Vietnam's health care system has achieved tremendous achievements over the last decade. The Decrees 10/2002/NĐ-CP and 43/2006/NĐ-CP specifying financial autonomy for public health services were introduced in the hope of increasing efficiency, reducing costs, and improving profits and responsiveness to local residents' medical demands. The implementation of these decrees has brought positive effects such as upgrading facilities and increasing competitiveness among health service suppliers.

Nevertheless, as the demand for health care is far greater than the supply of health services, financial autonomy leads to uneven investment in facilities among hospitals at provincial and sub-provincial levels, entailing patient overloads in upper-level hospitals. In fact, Cần Thơ, the central city of the Mekong Delta, has up to 19 public hospitals, but patient overloads are frequent due to patient transfer from hospitals at sub-provincial levels. Based on aforementioned facts, this research aims at providing scientific basis for the health care system of the city in particular and the whole country in general in order to build plans and action programs for improving public health care services.

2. Research methods

a. Theoretical basis:

Concerning the satisfaction concept, Bachelet (1995) considers customer satisfaction as an emotional response to their experience of a product or service. According to Zeithaml & Bitner (2000), customer satisfaction is their evaluation if a product or service meets their demands or expectations. Kotler (2001) defines satisfaction as a personal state derived from the comparison of an actual product to his expectations.

Parasuraman, Zeithaml & Berry (1991) think that there are five influential factors on customer satisfaction, namely reliability, responsiveness, assurance, empathy, and tangibles. According to

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WHO (Workbook, 2000), patient satisfaction assessment is based on the service's facilities, attendant help, information sources, staff competence, service costs, service suitability for patient needs, service availability, waiting time, and service effectiveness. From Donabedian's viewpoint (1998), patient health care is intended not only to improve their health, but also to fulfill their expected needs during the care to satisfy them. Additionally, Phạm & Phùng (2011) determine five influential factors on patient satisfaction, which are hospital facilities, staff professional competence, staff attentiveness, treatment outcomes and treatment time.

Based on research summaries, expert consultation and a group discussion (qualitative research) with 12 patients who used pubic hospital services, the author identifies 22 criteria that are considered to have effects on patient satisfaction with public hospitals in Cần Thơ City (Figure 1). According to Parasuraman, Zeithaml & Berry (1985), and Luck & Laton (2000), the scales of observed variables based on the Likert five-level scale are selected to suit the EFA.

b. Research model

SAT = f(REL, RES, ASS, EMP, TAN)

where SAT (satisfaction) is a dependent variable while REL (reliability), RES (responsiveness), ASS (assurance), EMP (empathy), TAN (tangibles) are independent variables.

The quantification of influential factors on patient satisfaction is done through three stages. First, the Cronbach's Alpha reliability coefficient is used to see how closely the questions in the scales correlate. Second, the EFA model is used to test influential factors and determine the appropriate ones. Last, the multiple linear regression model is used to identify influential factors and the effect of each factor on patient satisfaction.

3. Research results and discussion

To apply the theoretical model into empirical study, the author surveyed 425 patients who used services in Cần Thơ-based public hospitals including Cần Thơ Central General Hospital (170 patients), Cần Thơ General Hospital (118 patients), 121 Hospital (137 patients) from March to April 2011.

Step 1: Tesing the scales

The testing of the reliability (or Cronbach's Alpha) of the scale measuring patient satisfaction with the public hospitals includes 22 variables belonging to five factors. The Cronbach's Alpha coefficient standing at 0.9 (between 0.8 and 1.0) implies that the scale is appropriate. However, examining correlation coefficients results in four variables to be removed from the model because their values are smaller than 0.3 (Nunnally, 1978; Peterson, 1994; Slater, 1995). They are ASS4 (sufficient sickbeds), TAN2 (clear bulletin or instruction boards), TAN3 (well-positioned and noticeable wards), and TAN4 (hygienic hospital). The remaining 18 variables are thus employed in the next EFA.

Step 2: Conducting the EFA

The EFA results after two rounds yield the following tests: (1) the reliability of observed variables (factor loading coefficient > 0.5); (2) the suitability of the model (0.5 < KMO = 0.86 < 1); (3) the Barlett test of the correlation between observed variables (sig. < 0.05); (4) accumulative variance = 66.2%.

The above results show that factor F1 consists of 11 variables that are closely correlated, namely REL4 (patient health well informed by doctors), REL5 (serious working behavior of hospital staff), RES1 (quick handling of complaints), RES2 (doctors' promptness to work on demand), RES4 (staff availability for demand response), ASS1 (doctors' straightforward responses and counsels), ASS2 (doctors' trust-inspiring behavior), EMP1 (reasonable working schedule), EMP2 (staff attentiveness to patients), EMP3 (good patient service), and EMP4 (staff helpfulness). Factor F1 is characterized by responsibility and work ethics and therefore called "*Responsibility*" (represented by X1 in the following linear regression model).

Factor F2 is composed of REL1 (experienced doctors), REL2 (fulfillment of commitments), and

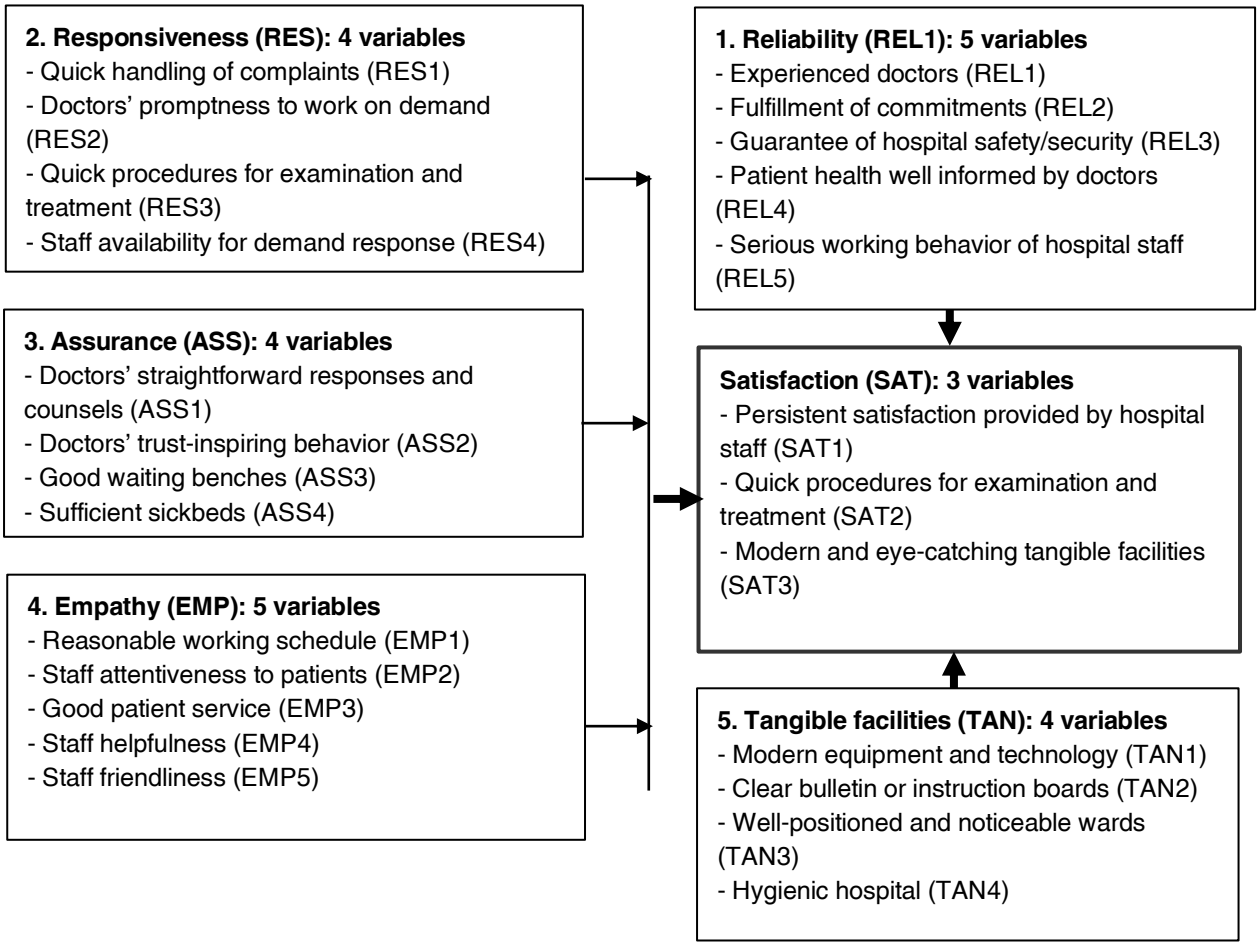

Figure 1: Suggested research model

Table 1: Evaluation of scale reliability after omitting variables

Factor	Scale mean if variable to be deleted	Scale variance variable to be deleted	Item – total correlation coefficient	Cronbach's Alpha if variable is deleted
REL1	62.3900	115.8767	0.4083	0.9246
REL2	62.6600	111.7418	0.6488	0.9196
REL3	62.3900	116.8464	0.3380	0.9261
REL4	62.8300	107.8395	0.7490	0.9169
REL5	62.4500	111.4823	0.6867	0.9189
RES1	63.1200	108.7733	0.7199	0.9177
RES2	62.6200	112.0764	0.5487	0.9218
RES3	63.4400	111.8651	0.4398	0.9255
RES4	63.2100	110.6120	0.6379	0.9197
ASS1	62.9800	107.6562	0.7121	0.9177
ASS2	62.7000	105.7475	0.8341	0.9146
ASS3	62.7000	114.5758	0.3770	0.9262
EMP1	62.2500	114.4722	0.4718	0.9233
EMP2	63.0400	109.3519	0.7357	0.9175
EMP3	62.6900	106.1959	0.8030	0.9154
EMP4	62.6000	106.1212	0.7851	0.9158
EMP5	62.6200	104.9653	0.7593	0.9163
TAN1	62.6200	116.7834	0.3430	0.9260

Source: Cronbach's Alpha testing result from survey data (2011)

Table 2: Result of factor matrix analysis

Factor	Factor matrix			Factor	Rotated component matrix		
	1	2	3		1	2	3
REL1	0.417	0.755	-0.075	REL1	0.065	0.842	0.188
REL2	0.681	0.483	-0.272	REL2	0.454	0.750	0.038
REL3	0.357	0.716	-0.086	REL3	0.031	0.789	0.153
REL4	0.805	-0.055	-0.032	REL4	0.740	0.248	0.208
REL5	0.730	0.199	-0.168	REL5	0.595	0.486	0.101
RES1	0.789	-0.176	-0.175	RES1	0.807	0.175	0.049
RES2	0.590	0.143	-0.253	RES2	0.514	0.410	-0.030
RES3	0.469	0.054	0.630	RES3	0.257	0.039	0.743
RES4	0.691	-0.144	0.250	RES4	0.616	0.049	0.421
ASS1	0.800	-0.347	0.009	ASS1	0.850	-0.025	0.194
ASS2	0.877	-0.043	-0.037	ASS2	0.800	0.286	0.228
ASS3	0.403	0.110	0.612	ASS3	0.179	0.069	0.716
EMP1	0.802	-0.265	-0.053	EMP1	0.830	0.066	0.151
EMP2	0.854	-0.202	-0.071	EMP2	0.853	0.146	0.162
EMP3	0.840	-0.201	-0.056	EMP3	0.837	0.138	0.171
EMP4	0.821	-0.219	-0.031	EMP4	0.822	0.108	0.185
EMP5	0.359	0.371	0.474	EMP5	0.060	0.325	0.619

Source: EFA result from survey data (2011)

REL3 (guarantee of hospital safety/security). It is represented by "*Assurance*" or X2 in the following linear regression model. As for factor F3, it is made up of RES3 (quick procedures for examination and treatment), ASS3 (good waiting benches), and TAN1 (modern equipment and technology). It is called "*Responsiveness*" or X3 in the following linear regression model.

The final research model is adjusted as follows:

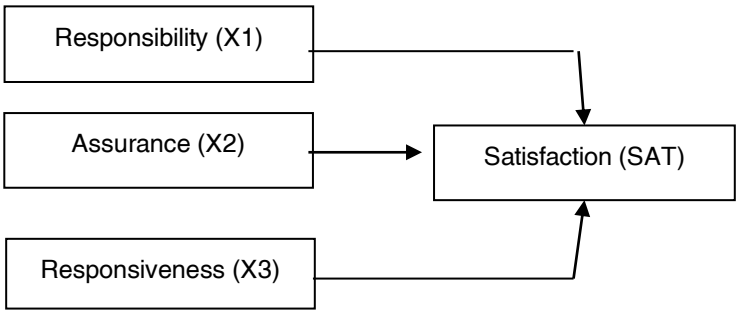

Figure 2: Adjusted research model

Step 3: Linear regression analysis

The analysis model for patient satisfaction with public hospitals in Cần Thơ City is: SAT = f(X1, X2, X3). In the model, SAT is a dependent variable and is quantified by averaging its observed variables. The variables X1, X2, X3 are quantified by averaging their observed variables.

From the regression result, adjusted R^2 is 0.60, which means that 60% of the variation in service quality satisfaction is explained by the factors in the model, and the rests are unknown factors. Additionally, Sig.F is 0.000, much smaller than the 5% significance level. This implies that the regression model is suitable and the independent variables have effects on the dependent variable Y. The Durbin-Watson coefficient is 1.98, indicating no autocorrelation (Trọng & Ngọc, 2008). The VIF of the variables is much smaller than 10, signifying no multicollinearity (Mai Văn Nam, 2008).

The result also reveals that the three variables in the model are all statistically significant (sig. <5%). The following is the regression equation for estimation of influential factors on patient satisfaction with the public hospitals:

$$Y = 0{,}549 + 0{,}244X_1 + 0{,}171X_2 + 0{,}415X_3$$

Table 3: Result of linear regression analysis

Variable	β coefficient	Beta coefficient	Sig	VIF
Constant	0.549	-	0.033	-
X_1: Responsibility	0.244	0.287	0.001	1.684
X_2: Assurance	0.171	0.187	0.023	1.627
X_3: Responsiveness	0.415	0.468	0.000	1.400
Sig. F				0.000
Adjusted R^2				0.600
Durbin-Watson coefficient				1.980

Source: Regression analysis result from survey data (2011)

According to the regression equation, the factors X1, X2, X3 are positively correlated to patient satisfaction with the public hospitals. In other words, the patient satisfaction proportionally correlates with the factors of responsibility, assurance and responsiveness. Specifically, if the responsibility factor increases by one point, then patient satisfaction will increase by 0.244 point. Likewise, one additional point in assurance causes a 0.171-point increase in patient satisfaction, and one additional point in responsiveness causes a 0.415-point increase in patient satisfaction.

4. Conclusion and suggestions

Using the quantitative model for estimation of patient satisfaction with public hospitals in Cần Thơ City, the research has pointed out three major factors affecting patient satisfaction, namely responsibility, assurance, and responsiveness. Of them, responsiveness is the most influential factor. The result accords with reality and a research by Phạm & Phùng (2011), because patients' primary concerns about hospital services are helpfulness, dedication and responsibility of the staff. Research results allow the author to propose some measures to enhance patient satisfaction with the public hospitals.

First, it is necessary to enhance the responsibility of doctors and the responsiveness of public hospitals to enhance patients' calmness. Thanks to this, patient satisfaction will be higher and service quality will be better.

Second, the human element of the supply side is a crucial condition in services, especially medical care services that require high quality human resources. This is why human resources development in public hospitals plays a central role in improving service quality and patient satisfaction.

Third, financial autonomy of public hospitals is a good way to improve the service quality. However, loose supervision of "autonomy in earning and spending" can easily lead to shortcomings as recently occurred. Hence, a strict and consistent mechanism for supervision should be imposed.

Finally, deeper investigation into patient satisfaction reveals that it is greatly affected by the disparity between the supply of and demand for medical care services. In order to enhance the quality of public medical services, it is essential to upgrade lower-level hospitals for higher responsiveness to on-the-spot medical demands thereby reducing overloads in upper-level hospitals. Moreover, with high inflation and tight controls over public expenditure due to limited budget, it seems that public – private partnership for higher quality of public medical services is an effective measure■

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