Patient Satisfaction as An Indicator of Service Quality In Malaysian Public Hospitals*

Noor Hazilah Abd Manaf† and Phang Siew Nooi

International Islamic University Malaysia
E-mail: hazilah@iiu.edu.my

University Malaya
E-mail: phangsn@um.edu.my

Key Words: Patient Satisfaction, Quality Management, Healthcare, Malaysia, Public Hospitals

1. Introduction

The Ministry of Health (MOH) is the major healthcare provider in Malaysia, although the service is also being complemented by the private sector which constitutes about 35% of overall healthcare services. Public hospitals in the country are organised into national level, state level and district level. The national level hospital is Hospital Kuala Lumpur, which serves as the National Referral Centre. It is the largest hospital in the country with 2500 beds, providing a comprehensive range of tertiary care services. The state level hospitals provide a comprehensive range of secondary care services and are located in the state capital of each of the thirteen federal states in the country. These are also large hospitals with bed capacity ranging from 800-1200. The district level hospitals on the other hand, provide basic impatient care services. For those with resident specialist, some secondary level speciality services are also provided. District hospitals without specialities are generally smaller with beds ranging from 30 to 150, while those with specialists may have beds ranging from 200 to 500.

1.1 Review of Literature

Carman (2000) pointed out that perception of service quality is an attitude, and that the

† Corresponding Author

* Paper presented at the 10th Quality Management and Organisational Development Conference at Lund University, Sweden (18-20 June 2007). The paper was awarded Best Paper for Empirical Research.

attitude is a function of some combination of attributes that a patient considers to be components of quality. The attributes can be divided into two sets, i.e functional, which includes measures such as ambiance and provider attentiveness; and technical, such as outcome, that describe how the service is delivered. Thus, there exist a link between perceived service quality and patient satisfaction. Ford *et al.* (1997) noted that patient satisfaction has over the years emerged as an important measure of the quality of care provided by health care organisations. It is not only important for gaining insights into the perception of the customers on the delivery of the health care service, but also as indicated by Donabedian (1998), a key outcome of care. Low patient satisfaction may result in poor compliance with the potential for waste of resources and suboptimal clinical outcome. Therefore, as pointed out by McKinley *et al.* (1997), satisfaction of the legitimate demands of the patients should be the outcome of all medical care.

Much of patient satisfaction research relies on patients' perception of satisfaction on what is observed, such as a facility's environmental aesthetics, or the array of services, and physician's comforting bedside manner (Friedman, 1995). This, however, may not accurately reflect the quality of care they receive, since the technical aspect of the quality of care is not assessed. However, patients, as noted by Morgan and Murgatroyd (1994), are passive receivers of treatment determined by professionals and, therefore, are not in a position to understand the technical and medical aspects of care. Thus, the inability of patients to make judgements on the technical competency of the hospital and its staff have limited most patient satisfaction research to the functional quality of care, that is, the manner in which medical care is delivered to them (Tomes and Ng, 1995).

The SERVQUAL questionnaire for service quality has also been widely used in patient satisfaction studies (Anderson, 1995; Sewell, 1997; Jabnoun and Al Rasasi, 2005). Although SERVQUAL has been widely used in patient satisfaction studies, Ford *et al.* (1997) argued that the nature of health services is different from those services typically associated through SERVQUAL, and, therefore, health care organisations may need to develop their own instruments or modify and supplement those available externally.

2. Research Problem

The main aim of the study is to analyse the level of patient satisfaction in Malaysian public hospitals, for both inpatient and outpatient services. Related to this is the possibility to explore that patient satisfaction is also influenced by factors such as waiting time in the outpatient clinics. Two sets of surveys were carried out. The outpatient survey gathered the respondents' perception of the cleanliness and comfort of the physical surroundings, as well as the waiting time, treatment and medication received, tests carried out and the services of

the doctors and nurses. The inpatient survey gathered similar information, but also elucidated information on the patients' satisfaction with respect to the food provided, the level of noise in the wards, and the management of visitors to the wards.

2.1 Research Method

Self-administered questionnaire was the main method of data collection used. All the state level hospitals and eleven district hospitals which were randomly selected were included in the survey. Hospital Kuala Lumpur was also included which makes a total of 23 respondent hospitals. Both surveys were carried out by convenience sampling. Convenience sampling was chosen over random sampling due to practical reasons. For example, during the pilot test, a patient who suffered from depression who was randomly selected according to bed number, cried and cried throughout the time the researcher was with her. Some patients simply refused to participate. Given the situation, both surveys had to be conducted purely on a voluntary basis.

The questionnaire used for the survey was developed by the Institute of Health Management (IHM), Ministry of Health Malaysia. Lin and Kelly (1995) pointed out the need to reduce data collection demands on patients without sacrificing optimal information. Tomes and Ng (1995) also raised the concern that patients are also burdened with psychological concerns such as fears of physical disability, fears of dying and fears about side-effects of treatment. Given the patients' conditions, it was felt that the IHM questionnaire, which comprises short, straight-forward items that are simple to answer, would do justice to the patients' circumstances.

Responses to the variables in the questionnaires were assigned a score of 1 for 'very dissatisfied,' 2 for 'dissatisfied', 3 for 'not sure,' 4 for 'satisfied' and 5 for 'very satisfied'. Mean analysis was carried out on the individual factors. A mean of less than 3 was classified as being dissatisfied with the service provided, and a mean of less than 2 as being highly dissatisfied with the service. A mean that is greater than 3 was classified as being satisfied with the service provided, and a mean greater than 4 as being highly satisfied with the service.

A total of 900 questionnaires were distributed to the respondent hospitals for each outpatient and inpatient satisfaction survey. Of these, 646 usable questionnaires were analysed for the inpatient survey which gave a response rate of 71.8 per cent. For the outpatient survey, 570 responses were analysed, which gave a response rate of 63.3 per cent. Analyses of data were carried by SPSS.

3. Reliability and Validity

Reliability analysis was carried out for both instruments used. The lower limit of 0.70 for

Cronbach's alpha as suggested by Hair *et al.* (1998) and 0.30 for item-total correlation as suggested by Nunnally and Bernstein (1994) was applied. The Cronbach's alpha for the in-patient satisfaction survey was found to be 0.8776, while the outpatient survey was 0.9028. All the items also had item-total correlation which exceeded the acceptable lower limit of 0.30.

Construct validity was established by carrying out factor analysis by Varimax rotation for both instruments. Three factors resulted for the inpatient data, and two factors for the out-patient data. A minimum factor loading of 0.50 was applied for the loading to be considered significant (Hair *et al.*, 1998). Table 1 shows the factor loading for the inpatient survey, and the Cronbach's alpha for each factor.

Table 1. Factor loading and cronbach's alpha for inpatient survey

Factor	Items	Factor Loading	Cronbach's alpha
1	Service of nurses	0.819	0.8500
	Clinical treatment received	0.796	
	Service of doctors	0.787	
	Information given to you about your condition	0.674	
	The way you are managed	0.620	
2	Environment	0.772	0.7530
	Cleanliness	0.683	
	Management of visitors to ward	0.622	
	Bathroom and toilet	0.612	
	Noise in ward	0.572	
3	Public telephone	0.756	0.6495
	Radio, tv and rest lounge	0.729	
	Food	0.641	

Source: Survey data

Reliability analysis was again carried out on all three factors from the inpatient data, and again Cronbach's alpha of 0.70 and item-total correlation of 0.30 was used as the acceptable lower limit. Only factors 1 and 2 were retained for further analysis since the Cronbach's alpha for the third factor was lower than the acceptable limit of 0.70. The first factor, which grouped items relating to the clinical aspect such as service of doctors and nurses, and clinical treatment received, was labelled 'clinical dimension of service'. The second factor, which grouped items on the physical aspect of service, such as cleanliness, and environment of the ward, was labelled 'physical dimension of service'.

For the outpatient survey, two factors were identified as shown in Table 2. Reliability analysis was also carried out on both factors and the Cronbach's alpha for both factors exceeded the acceptable lower limit of 0.70. All the items in both factors also had item-total correlation which exceeded 0.30. The first factor was also labelled 'clinical dimension of service'; while the second factor was labelled 'physical dimension of service'.

Table 2. Factor loading and cronbach's alpha for outpatient survey

Factor	Items	Factor loading	Cronbach's alpha
1	Service of doctors	0.823	0.8714
	Clinical treatment received	0.798	
	Information given about condition	0.784	
	Tests carried out	0.687	
	Medicine prescribed	0.655	
	Service of nurses	0.655	
2	Condition of public toilet	0.740	0.7835
	Comfort of waiting room	0.700	
	Atmosphere of pharmacy	0.668	
	Environment	0.609	
	Cleanliness	0.579	
	Registration process	0.574	

Source: Survey data

3.1 Profile of Respondents

Distribution of respondents by gender shows that females make up about 54 per cent of the sample for the inpatient data; and about 53 per cent for the outpatient data. Distribution by ethnicity shows that Malays make up the majority of respondents, followed by the Chinese and Indians respectively for both inpatient and outpatient survey. Government employees form the highest number of respondents and constitute about 30 per cent of both samples, followed by private sector employees (18.1% inpatient; 21.2% outpatient); housewives (17% inpatient; 14.6% outpatient); students (11.1% inpatient; 11.6% outpatient); pensioners (6.8% inpatient; 8.4% outpatient); self-employed (7.4% inpatient; 6.7% outpatient); unemployed (10.5% inpatient; 4.6% outpatient) and others (2% inpatient; 1.1% outpatient). Malaysian public hospitals provide free medical treatment to government employees, government pensioners and school students.

Distribution of respondents according to income shows that for both outpatient and inpatient survey, more than half of the respondents earn less than RM 1500.00 per month. When those who earn less than RM 1500.00 per month was combined with those who do not belong to any income group (housewives, pensioners, students and the unemployed), the combined grouping make up 81.6 per cent of respondents for the inpatient survey, and 74.2 per cent for the outpatient survey respectively.

3.2 Clinical Dimension of Service

The factor analysis carried out for both inpatient and outpatient data resulted in two factors, namely clinical dimension of service, and physical dimension of service. For the inpatient survey, five items were grouped under clinical dimension of inpatient service. All

these items were also collapsed to form a single variable on this dimension. Table 3 shows that the patients are very satisfied with the various aspects of inpatient service. Patients are most satisfied with the service of the doctors (mean 4.36), followed by the nurses (mean 4.35), clinical treatment received (mean 4.28), the way they have been managed (mean 4.20), and information given to them about their condition (mean 4.11). All the items when collapsed to form a single variable for the clinical dimension of service, have a mean of 4.26. This indicates that inpatients of the public hospitals are very satisfied with the clinical aspect of service received during their stay in the wards.

Table 3. Clinical dimension of inpatient satisfaction

	Mean	Std. dev.	t-value	ρ-value
Service of doctors	4.36	0.60	57.51	0.00
Service of nurses	4.35	0.60	57.33	0.00
Clinical treatment received	4.28	0.59	55.17	0.00
The way you are managed	4.20	0.63	48.29	0.00
Information given about condition	4.11	0.73	38.46	0.00
Clinical dimension of service	4.26	0.50	13.22	0.00

Significance level: $\rho < 0.01$.

Six items were identified as measures grouped under the clinical aspect of service for the outpatient survey. These items were also collapsed to form a single variable for the clinical dimension of service. The finding indicates that the respondents are satisfied with all the clinical aspects of the outpatient service. They are most satisfied with the service provided by the doctors (mean 4.22) and the clinical treatment received (mean 4.15). They are also very satisfied with the nurses (mean 4.12), followed by the medicine prescribed (mean 4.08), tests carried out (mean 4.05) and information given to them about their condition (mean 4.04).

All the items, when collapsed to form a single variable for the clinical dimension of service, have a mean score of 4.11, as shown in Table 4. This indicates that the respondents are very satisfied with the clinical aspect of service received from the outpatient clinics of Malaysian public hospitals.

Table 4. Clinical dimension of outpatient satisfaction

Item Statement	Mean	Std. dev.	t-value	ρ-value
Service of doctors	4.22	0.68	42.77	0.00
Clinical treatment received	4.15	0.64	42.75	0.00
Service of nurses	4.12	0.69	38.51	0.00
Medicine prescribed	4.08	0.67	38.45	0.00
Tests carried out	4.05	0.66	37.90	0.00
Information given about condition	4.04	0.77	32.53	0.00
Clinical dimension of service	4.11	0.54	49.47	0.00

Significance level: $\rho < 0.01$.

3.3 Physical Dimension of Service

Five items were grouped under physical dimension of service for the inpatient survey, as shown in Table 5. Patients are found to be most satisfied with the cleanliness of the wards (mean 4.28), followed by the environment of the ward (mean 4.09), management of visitors to the wards (mean 3.96), and the condition of the bathroom and toilets (mean 3.94). The lowest ranked item is that of the noise in the ward, although in terms of score, the patients are still satisfied with this variable (mean 3.67). All these items, when collapsed to form a single factor for the physical dimension of inpatient service, have a mean score of 3.99. This indicates that the inpatients of the public hospitals are satisfied with the physical aspect of the service provided by the hospitals.

Table 5. Physical dimension of inpatient satisfaction

	Mean	Std. dev.	t-value	ρ-value
Cleanliness	4.28	0.62	52.49	0.00
Environment	4.09	0.64	42.91	0.00
Management of visitors to ward	3.96	0.80	30.48	0.00
Bathroom and toilet	3.94	0.83	28.82	0.00
Noise in ward	3.67	0.85	20.14	0.00
Physical dimension of service	3.99	0.54	46.93	0.00

Significance level: $\rho < 0.01$.

For the outpatient survey, six items were grouped as measures for the physical dimension of the service, and these items were also collapsed to form a single variable on the physical dimension of outpatient service, as shown Table 6. The finding indicates that the respondents are most satisfied with the cleanliness (mean 4.15), and environment (mean 3.96) of the hospital. They are also satisfied with the registration process (mean 3.89), and the atmosphere of the pharmacy (mean 3.79), followed by the comfort of the waiting room (mean 3.77) and the condition of the public toilet (mean 3.51). The overall measure for the physical dimension of service has a mean score of 3.84. This indicates that the patients are satisfied with the physical aspect of service provided by the outpatient clinics of Malaysian public hospitals.

Table 6. Physical dimension of outpatient service

Item Statement	Mean	Std. dev.	t-value	ρ-value
Cleanliness	4.15	0.60	12.39	0.00
Environment	3.96	0.75	21.71	0.00
Registration process	3.89	0.79	22.62	0.00
Atmosphere of pharmacy	3.79	0.83	30.45	0.00
Comfort of waiting room	3.77	0.85	45.77	0.00
Condition of public toilet	3.51	0.99	12.39	0.00
Physical dimension of service	3.84	0.57	35.89	0.00

Significance level: $\rho < 0.01$.

3.4 Waiting Time for Outpatient Service

Waiting time in outpatient clinics has been documented to be a source of dissatisfaction among patients (Hart, 1995; Gupta *et al.*, 1993; McKinnon *et al.*, 1998). As noted by Hart (1995), it is the one consistent feature of dissatisfaction that has been expressed with outpatient service. McKinnon *et al.* (1998) found that patients are less likely to be dissatisfied if their waiting time is within thirty minutes. Pearson correlation was used to test the relationship between satisfaction about waiting time and overall outpatient satisfaction. The finding indicates that the relationship between satisfaction about waiting time to see the doctor and overall outpatient satisfaction is highly significant at 0.01 level of significance. The Pearson Correlation of 0.687 shows that there is a positive correlation between satisfaction about waiting time and outpatient satisfaction. Thus it can be inferred that patients who are satisfied with their waiting time tend to be satisfied with the overall outpatient service.

3.5 Overall Patient Satisfaction

All items in both factors for the clinical dimension and physical dimension were also collapsed to form a single variable each for overall outpatient and inpatient satisfaction, as shown in Table 7. For outpatient service, the overall satisfaction was found to have a mean of 3.97, while the overall satisfaction for inpatient service was found to be higher at 4.13. This indicates that patients are generally satisfied with both the inpatient and outpatient service of Malaysian public hospitals.

Table 7. Overall patient satisfaction

	Mean	**Std. dev.**	**t-value**	**ρ-value**
Overall inpatient satisfaction	4.13	0.46	62.12	0.00
Overall outpatient satisfaction	3.97	0.50	47.61	0.00

Significance level: $\rho < 0.01$.

It is also interesting to note that although there has been growing criticism of the quality and interpersonal skills of staff in public hospitals (Ghazali, 2002), this is not supported by the findings of this study as reflected in the high mean score on patient satisfaction. One possibility is that expectations of patients are already low to begin with, since they are aware that they are not paying the fees of private medical care, hence the higher perception of satisfaction. The demography also shows that the majority of the patients belong to the lower income group, who do not have the luxury of choosing their healthcare provider. Another possibility, as has been raised by other researchers, is the reluctance of patients to express their true feelings for fear of antagonising the service providers and experiencing

even worse service in the future (Coyle and Williams, 2000; Angelopoulou *et al.*, 1998). Yet another possibility is the 'generosity factor,' that is, the tendency of patients to give excellent rating (Kasalova, 1995).

4. Conclusion

A number of major findings emerged from both the outpatient and inpatient surveys. Two dimensions of service was identified from the surveys carried out, namely physical and clinical dimensions of service. Patients were found to be satisfied with both the physical and clinical dimensions of service, although they are more satisfied with the clinical dimension than the physical dimension of service. The overall patient satisfaction is high for both outpatient and inpatient surveys, and the finding suggests that they are more satisfied with the inpatient service than the outpatient service. Correlation between patient satisfaction and waiting time was also established from the study. A note of caution from the literature should also be observed in any patient satisfaction study, which is the reluctance of patients to express their true feelings about the care they received, and also the 'generosity' factor as an intervening factor. Another point that merits consideration is that patient expectations in public hospitals are already low to begin with since they are aware that they are paying a minimal fee in comparison to private medical care. Nonetheless, the finding of the survey cannot be ignored altogether despite the qualms.

References

1. Anderson, E. A.(1995), "Measuring service quality at a university health clinic," *International Journal of Health Care Quality Assurance*, Vol. 8, No. 2, pp. 32-37.
2. Angelopoulou, P., Kangis, P. and Babis, G. (1998), "Private and public medicine: A comparison of quality perceptions," *International Journal of Health Care Quality Assurance,* Vol. 11, No. 1, pp. 14-20.
3. Carman, J. M.(2000), "Patient perceptions of service quality: Combining the dimensions," *Journal of Services Marketing,* Vol. 14, No. 4, pp. 337-352.
4. Coyle, J. and Williams, B.(1999), "Seeing the woods for the trees: Defining the forgotten concept of patient dissatisfaction in the light of patient satisfaction research," *Leadership in Health Services*, Vol. 12, No. 4. Available from: http://www.emerald-library.com/brev/21112dal.htm (Accessed 19 January 2000).
5. Donabedian, A.(1998), "The quality of care. How can it be assessed?," *Journal of American Medical Association*, Vol. 260, No. 12, pp. 1743-1748.

6. Ford, R. C., Bach, S. A and Fottler, M. D.(1997), "Methods of measuring patient satisfaction in health care organisations," *Health Care Management Review*, Vol. 22, No. 2, pp. 74-89.
7. Friedman, M. A.(1995), "Issues in measuring and improving health care quality," *Health Care Financing Review*, Vol. 16, No. 4, pp. 1-13.
8. Ghazali, R. J. M.(2002), *Towards patients' delight,* Institute of Health Management, Kuala Lumpur.
9. Hair Jr., J. F., Anderson, R. E., Tatham, R. L. and Black, W. C.(1998), *Multivariate data analysis,* Prentice Hall, New Jersey.
10. Hart, M.(2003), "Improving outpatient clinic waiting times: Methodological and substantive issues," *International Journal of Health Care Quality Assurance*, Vol. 8, No.6. Available from: http://proquest.umi.com/pqdweb?INT (Accessed 23 January 2003).
11. Gupta, P. C., Joy, W. and Wright, N.(1993), "An approach to consumer feedback in an outpatient specialty service," *International Journal of Health Care Quality Assurance,* Vol. 6, No. 5, pp. 13-16.
12. Jabnoun, N. and Al Rasasi, A. J.(2005), "Transformational leadership and service quality in UAE hospitals," *Managing Service Quality*, Vol. 15, No. 1, pp. 70-81.
13. Kasalova, H.(1995), "Rectification of the primary data obtained by a patients' satisfaction survey", *International Journal of Health Care Quality Assurance*, Vol. 8, No. 1, pp. 15-16.
14. Lin, B. and Kelly, K.(1995), "Methodological issues in patient satisfaction survey," *International Journal of Health Care Quality Assurance*, Vol. 8, No. 6, pp. 32-37.
15. McKinley, R. K., Manku-Scott, T., Hastings, A. M., French, D. P. and Baker, R.(1997), "Reliability and validity of a new measure of patient satisfaction with out-of-hours primary medical care in the United Kingdom : Development of a patient questionnaire," *British Medical Journal,* Vol. 314, pp. 193-198.
16. McKinnon, K., Champion, P. D., and Edwards, R. H. T.(1998), "The outpatient experience : Results of a patient feedback survey," *International Journal of Health Care Quality Assurance*, Vol. 11, No. 5, pp. 156-160.
17. Morgan, C. and Murgatroyd, S. (1994), Total *quality management in the public sector: An international perspective,* Open University Press, Buckingham.
18. Nunnally, J. C. and Bernstein, I. H.(1994), *Psychometric theory*, McGraw-Hill, New York.
19. Sewell, N.(1997), "Continuous quality improvement in acute health care: Creating holistic and integrated approach," *International Journal of Health Care Quality Assurance*, Vol. 10, No 1, pp. 20-26.
20. Tomes, A. E. and Ng, S. P. C.(1995), "Service quality in hospital care : The development of an inpatient questionnaire," *International Journal of Health Care Quality Assurance*, Vol. 8, No. 3, pp. 25-33.