

Original Research Article

Patient satisfaction with inpatient services in a public tertiary hospital in Trinidad and Tobago: associated factors and predictors

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ABSTRACT

Background: Patient experience is an important factor in assessing the quality of healthcare. Numerous reports highlight the continued inconsistencies in healthcare and poor patient satisfaction affecting outcomes. This study aimed to assess patient satisfaction in a teaching hospital in Trinidad and Tobago.

Methods: A cohort study was conducted among recently discharged patients from the largest teaching hospital in Trinidad and Tobago. The survey instrument was an adaptation of the Picker Patient Experience Questionnaire. Data were collected from January 1, 2017 to March 2017, using face-to-face interviews. SPSS version 21 was used for descriptive and inferential analysis of data.

Results: The majority of the 300 participants was female (n=157; 53.3%), aged over 35 years (n=202; 67.3%) with secondary school education (n=137; 45.7%). Satisfaction levels ranged from 50% and 70% for management issues, treatment-related communication issues, environmental issues, and deportment of medical staff. Patient satisfaction with treatment-related support and hotel services was less than 50%. All satisfaction domains were inter-dependent with the highest correlation between treatment-related communication and management issues ($r=0.691$; $p\leq 0.001$) and the lowest between support services and hotel services ($r=0.311$; $p\leq 0.001$). Education was the only factor that was both associated with, and a predictor of, patient satisfaction. Satisfaction level decreased with increased education level.

Conclusions: Low satisfaction was found with treatment-related support and hotel services with education level as the only predictor. Steps are needed to ensure periodical satisfaction monitoring and continuous improvement of services such as support and hotel services.

Keywords: Basic health services, Health outcomes, Health reform, Patient satisfaction

INTRODUCTION

Patient satisfaction impacts on hospital care and is a major predictor of the reputation and image of the public health sector. However, attaining and interpreting patient satisfaction can be challenging. Definitions of patient satisfaction vary, including 'the degree to which desired goals have been achieved,' and 'the degree to which health services for individuals and populations increase

the likelihood of desired health outcomes and are consistent with current professional knowledge'.^{1,2} Patient satisfaction is determined by a complex mixture of perceived need, expectations, experience of care, and socio-demographic factors; it is increasingly viewed 'as a meaningful indicator of health services quality where it does not matter if patients are right or wrong'.³⁻⁵ Patients' views are thus regarded as having 'an equal footing with professionals while analysing dysfunctions, choosing

themes to prioritise, searching for possible solutions, and implementing them'.⁶ Poor services are associated with poor patient satisfaction.^{7,8}

In 1989, the World Health Organization (WHO) identified patient satisfaction assessment as 'an integral part of any quality assurance programme'.⁹ The Joint Commission on the Accreditation of Healthcare Organizations embraced patient satisfaction as a valid indicator and, in 1994, mandated that 'the organization gathers, assesses, and takes appropriate action on information that relates to patient's satisfaction with service provided'.¹⁰ Donabedian (1966) argued that, 'the ultimate validator of the quality of care is its effectiveness in achieving or producing health and satisfaction'.¹¹ It is used to assess medical interventions, to detect systemic pitfalls and gaps that hinder achieving targets, and to reward high achievers. According to Javier Garcia-Lacalle, 'patient feedback should be a key component of a well-run system of performance assessment'.¹² Customer satisfaction, therefore, is integral to a quality health service; it is a major indicator of performance, particularly on non-technical outcomes.¹¹⁻¹⁶ With this paradigm shift to patient satisfaction and quality of life, modern healthcare systems are adopting a more people- and client-centered approach to deliver healthcare services.^{17,18}

Local situation

Many improvement strategies have been introduced since the Moyne Commission of Inquiry of 1937. In 1996, quality departments in each regional health authority (RHA) were created for customer relations and feedback. Introduction of customer satisfaction surveys. In 2013 and 2014, the Ministry of Health employed customer relations officers to assist patients and resolve problems. Greater use of the patient's charter, and customer relations and quality departments, in keeping with the South West Regional Health Authority's (SWRHA) mission for 'customer focused healthcare'.¹⁹ In 2012, a new teaching hospital wing was built to provide a more comfortable patient environment and enhance medical teaching facilities. These changes were expected to increase customer satisfaction. However, numerous reports attested to the continued need for reform, including 'not enough beds, equipment, facilities, supplies, medical and nursing staff — and unsatisfactory working conditions including inadequate remuneration that have beset our hospitals for decades'; 'begging for a bed'; 'Shortage of medical supplies at SWRHA'; 'Hospitals at crisis point'; 'No medicine for cancer patients'; '1,200 waiting for CT, MRI scans'; and 'Nursing shortage'.²⁰⁻²⁶ Such recurrent complaints influence customer satisfaction.

This study's objective is to review patient satisfaction, assesses patient satisfaction interventions, and identifies associations and predictors of customer satisfaction of

inpatients of a public health institute in the context of health reform.

METHODS

This cohort study assessed satisfaction levels with hospital care among former inpatients of public hospitals in Trinidad and Tobago (TT) to identify associations and predictors of satisfaction. The sample comprised 300 patients admitted in 2017, which was determined by the following formula, calculated as the minimum number needed to estimate prevalence of overall satisfaction with a 5% margin of error:

$$n = \frac{NZ_{\frac{0.05}{2}}^2 p(1-p)}{(N-1)d^2 + Z_{\frac{0.05}{2}}^2 p(1-p)}$$

where, n =required sample size, N =number of inpatients discharged from public hospitals in TT after a minimum stay of three days, p =percentage estimate of ex-inpatients satisfied with the quality of hospital care and services they had received, d =margin of error (usually set at 5%), and $Z_{\frac{0.05}{2}}^2 = 1.96$ =standard normal distribution value.²⁷

The inclusion criteria was being at least 18 years of age at the time of the study, and a minimum ward stay of three consecutive days. Patients were excluded if their physical condition made participation difficult. The sampling frame was the patient discharge listing. Eligible patients were given details of the study's purpose before inviting them to participate. Quota sampling was used to obtain 300 patients. Data were collected from January 1, 2017 to March 2017, using face-to-face interviews.

Data collection and analysis

The data collection instrument was a 50-item questionnaire containing demography-related variables, which has measured patient satisfaction in several studies. The instrument was divided into the six subscales (Table 1).

Table 1: Questionnaire subscales with number of items and maximum scores.

Satisfaction subscale	No. of items	Maximum score
Department of medical staff	7	35
Treatment-related communication	7	35
Treatment-related support services	3	15
Hospitality services	15	75
Hospital environment	10	50
Management-related issues	8	40
Total	50	250

As a means of avoiding data bias that might occur due to memory recall and responses tinged by memories of prior stay(s) participants who had been awarded more than once previously were reminded that their responses must be with reference only to their most recent hospital stay.

Questionnaire response options were coded as follows: 1=very dissatisfied; 2=dissatisfied; 3=no opinion; 4=satisfied; and 5=very satisfied. Responses were then classified as either a 'Negative response' and assigned a satisfaction score of 0 if the patient reported being 'Very dissatisfied' or 'Dissatisfied'; and a 'Positive response', and given a satisfaction score of 1, if the patient reported being 'Very Satisfied' or 'Satisfied'. 'No opinion' was treated as a non-response and not scored.

The maximum possible satisfaction score was 250; patients with scores >125 were classified as 'Satisfied'; with those scores 125 or less were classified as 'Not satisfied'. Because the maximum possible scores were not the same across all domains, total domain scores were represented as percentages to facilitate certain statistical analyses.

SPSS (version 21) was used, together with MINITAB version 18, for descriptive and inferential data analysis, and Microsoft EXCEL was used to form tables and produce graphs. Descriptive statistics methods included frequency and percentage distribution tables, graphs, and summary statistics (proportions, means, and standard deviations); inferential methods included 95% confidence intervals, hypothesis testing, and multiple linear, regression analysis.

The study was approved by the ethics committee of the South West Regional Health Authority (SWRHA) of TT.

RESULTS

A sample of 300 inpatients participated within the data collection period (total number of inpatients approached was not recorded). The questionnaire's overall reliability (Cronbach's alpha) was 0.969; subscales reliability ranged from 0.865 to 0.925 (Table 2).

Table 2: Subscale and overall reliability of the questionnaire.

Satisfaction subscale	n	Cronbach's alpha
Department of medical staff	7	0.904
Treatment-related communication	7	0.918
Treatment-related support services	3	0.865
Hotel services	15	0.925
Hospital environment	10	0.889
Management-related issues	8	0.884
Overall	50	0.969

Table 3: Frequency and percentage distribution of selected demographic variables.

Variable	N	%
Gender		
Male	143	47.7
Female	157	53.3
Age group (in years)		
<26	31	10.3
26–35	54	18.0
36–45	62	20.7
46–55	46	15.3
56–65	50	16.7
Over 65	44	14.7
Unknown	13	4.3
Highest level of education		
Less than primary	30	30.0
Primary	69	23.0
Secondary	137	45.7
Tertiary	51	17.0
Unknown	13	4.3

Table 3 shows selected demographic characteristics of the study participants. They were predominantly female (n=157; 53.3%), over 35 years of age (n=215; 71.7%), and had up to a secondary school education (n=137; 45.7%). The majority (n=175; 58.3%) was from the medical ward, followed by the surgical (27%; n=81), paediatric (2.0%); maternity (1.7%), and other wards (11.0%). The mean age was 45.4±18.83 years overall; by sex, males and females were 45±18.44 years and 42.5±18.79 years, respectively. The difference in mean age between males and females was statistically significant (p=0.023).

More than half the patients (n=154; 51.3%) stayed 3–7 days, 6 (2.5%) stayed longer than three weeks, and the length of stay for 72 (24.0%) was not recorded. Further descriptive data analysis showed that the mean length of stay was 7.6±6.9 days; the mode was 4 days (n=48, 211) and the median length of stay was 5 days (Figure 1).

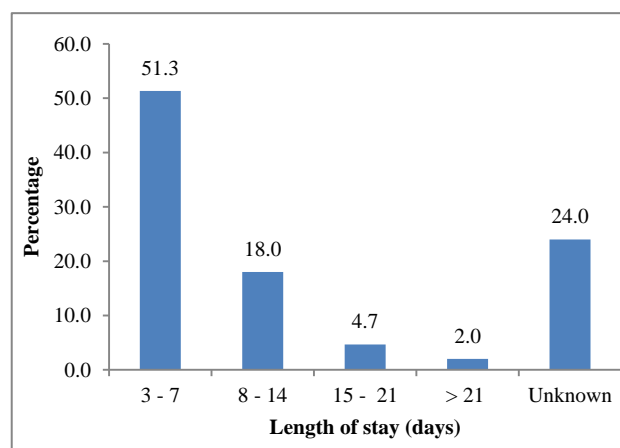


Figure 1: Length of hospital stay.

Satisfaction scores

The majority (n=164; 71.9 %) were satisfied with their overall hospital experience. Table 4 shows satisfaction

scores by subscale and overall. For all but two subscales (treatment-related support and hotel services), the median was higher than the mean score. This was also true regarding the total score.

Table 4: Selected summary statistics: satisfaction scores.

Satisfaction subscale	Summary statistics			
	Maximum score	Mean (std. dev)	Range	Median
Department of medical staff	35	23.0 (9.70)	0–35	26
Treatment-related communication	35	23.4 (9.61)	0–35	28
Treatment-related support services	15	3.4 (9.99)	0–6	3.4
Hotel services	75	34.9 (16.78)	0–75	34
Hospital environment	50	26.6 (11.97)	0–50	28
Management-related issues	40	27.4 (11.17)	0–40	32
Overall	250	138.9 (51.96)	0–222	149.4

Table 5: 95% CI for mean satisfaction score.

Domain	95% CI for mean			
	Mean (%)	Std. dev	Lower bound	Upper bound
Department of medical staff	65.8	27.62	62.1	69.3
Treatment-related communication	67.1	27.47	63.3	70.5
Treatment-related support services	23.1	13.37	25.7	29.1
Hotel services	47.3	22.02	43.6	49.4
Hospital environment	53.9	23.36	50.1	56.3
Management-related issues	69.7	27.19	64.9	72.1
Overall	55.2	20.73	52.9	58.3

Table 6: P values for tests of equality of satisfaction scores.

Satisfaction domain	Dependent variable: p values for F-test of equality of means			
	Sex	Age	Education	Length of stay
Department of medical staff	0.932	0.082	0.215	0.892
Treatment-related communication	0.872	0.467	0.034	0.929
Treatment-related support services	0.836	0.542	0.355	0.457
Hotel services	0.814	0.094	0.877	0.460
Hospital environment	0.952	0.410	0.056	0.457
Management-related issues	0.400	0.162	0.168	0.992
Total score	0.713	0.157	0.224	0.939

Table 5 shows both point estimates by percentage (Mean±standard deviation) and interval estimates (95% CI) for mean satisfaction scores, recorded as percentages of the maximum possible. Mean scores ranged from 23.1% to 69.7%; the 95% CI ranged from 25.7% to 72.1%, respectively. The highest satisfaction was with the hospital's handling of management-related issues (69.7%±27.19%); patients were least satisfied with treatment-related support services (23.1%±13.37%).

A visual assessment of all 15 possible pairwise comparisons of subscale means, satisfaction scores, and 95% CIs is shown in (Figure 2). The circle in each interval shows the mean score for that subscale. Patients were most satisfied with communication, management, and staff department; they were least satisfied with treatment-related support services.

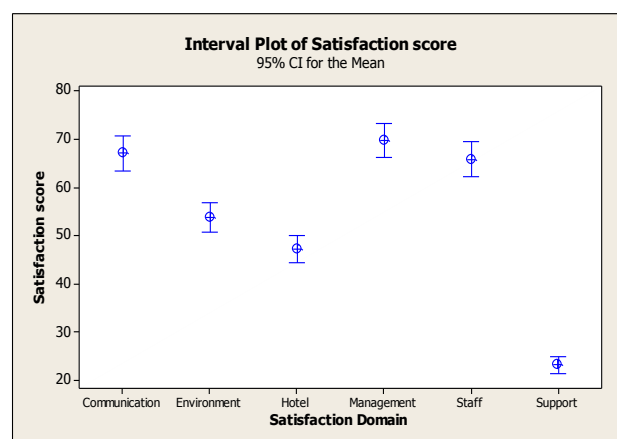


Figure 2: Interval plots of satisfaction domain score.

Table 7: Pairwise multiple comparisons (treatment-related communication).

Education level vs. education level	P value
None vs. primary	0.252
None vs. secondary	0.622
None vs. tertiary	0.734
Primary vs. secondary	0.658
Primary vs. tertiary	0.003
Secondary vs. tertiary	0.021

Table 6 gives p values for test of equality of mean satisfaction scores among sex, age group, education level, length of stay, and domain.

Statistically significant differences were found for education level only in treatment-related communication. Specifically, this was only between patients with primary and tertiary education ($p=0.003$); and between patients with secondary and tertiary education ($p=0.021$) (Table 7).

Table 8: Bivariate correlations among satisfaction subscale item scores.

Hospital feature: correlation coefficient r (p value)						
	Medical staff	Treatment	Support services	Hotel services	Environment	Management issues
Medical staff	1	0.679 (≤ 0.001)	0.479 (≤ 0.001)	0.455 (≤ 0.001)	0.570 (≤ 0.001)	0.638 (≤ 0.001)
Treatment		1	0.560 (≤ 0.001)	0.394 (≤ 0.001)	0.543 (≤ 0.001)	0.691 (≤ 0.001)
Support services			1	0.311 (≤ 0.001)	0.485 (≤ 0.001)	0.528 (≤ 0.001)
Hotel services				1	0.666 (≤ 0.001)	0.427 (≤ 0.001)
Environment					1	0.594 (≤ 0.001)
Management issues						1

Correlations

Table 8 shows all 15 possible bivariate correlations among the six satisfaction domains. All possible pairs are positively correlated ($p < 0.005$), with the strongest between treatment-related communication and management issues ($r=0.691$; $p \leq 0.001$) and the weakest between support and hotel services ($r=0.311$; $p \leq 0.001$).

Based on Spearman's correlation coefficients, education level ($p=0.003$) was the only variable that correlated; that negative correlation ($r=-0.20$) is shown in (Table 9).

Table 9: Correlations (Spearman's) with satisfaction score.

Demographic variable	Correlation	P value
Age	0.07	0.315
Sex	-0.05	0.493
Length of stay	-0.12	0.071
Level of education	-0.20	0.003

Prediction

Level of education was the only demographic variable that correlated with satisfaction; it was also the only variable identified to be a predictor of satisfaction using multivariate linear regression analysis; after which simple linear regression was used to obtain the reduced model. Satisfaction decreased with increasing education. The simple linear regression model is

$$y_i = \beta_0 + \beta_1 x + \varepsilon_i$$

and the prediction equation was

$$\hat{y} = 69.20 - 4.85x$$

where \hat{y} = the satisfaction score and x = the level of education. This was a reduced model.

DISCUSSION

Most patients were first admissions from the medical and surgical wards, and admitted for between 3 and 7 days (63.9%). Though patients were generally satisfied ($n=164$; 71.9%), they were still deeply dissatisfied with hotel services (47.3%) and treatment-related support services (23.1%). The mean percentage of satisfied patients varied in different domains, with the highest for management-related issues (69.7%), treatment-related communication (67.1%), and department of staff (65.8%), followed by hospital environment (53.9%). Management issues rated better than the findings of a previous similar study of 2008 (waiting time to see a doctor (15.9%), waiting time before receiving treatment was 26.2%).²⁸ Another study reported similar findings for certain management issues, with 29.6% of patients satisfied with waiting time.²⁹

Our study revealed a relatively high percentage of patients satisfied with treatment-related communication. Satisfaction levels were much lower in 2008 (from 8.6% for valuing patient's opinion to 42.7% for information on final diagnosis).²⁸ A study conducted by Ahmed et al. among in-patients at three public hospitals in Ethiopia, revealed that 32.8% and 35.9% were satisfied with the explanations and information received.³⁰ At 65.8%,

satisfaction with department of medical staff (65.8%) was similar in 2008 (about 70–80%).²⁸ Ahmed et al. reported satisfaction with helpfulness of nurses to be 40.3% (30); and of physicians, ancillary staff, administrative staff, and nursing staff to be 77.8%, 71.7%, 70.2%, and 65.7% respectively.^{30,31} Treatment-related support services were poor, at 23.1%, but still better than in 2008 (16.6% for adequacy of support services and 18.5% for availability of ongoing services).²⁸ Another study from a developing country reported higher percentage of satisfied patients (73.6%) in support services (laboratory and radiology services).³¹ Our study revealed hotel services had a higher percent of dissatisfied customers than satisfied customers, with a mean of 47.3%, compared to 26.1% in 2008.²⁸ A study in India reported a higher percentage of satisfied patients (availability of toilet facilities (57.0%), toilet maintenance (38.0%), cleanliness of wards (60.0%), and quality of food (88.8%)).³² The improved hotel services may reflect the better facilities of the new teaching hospital. The percentage of patients satisfied with the hospital environment varied markedly (28.7% for parking, 43.0% for adequate seating, 44.3% for washrooms, and 43.3% for canteen). The mean percentage of satisfied patients was 53.9%. A good hospital environment promotes healing and clinical outcomes, enhances patient safety and satisfaction, and even decreases costs.³³ It also improves patients' perceptions of their overall hospital stay³⁴ and encourages physical and psychological support for patients.³⁵

Associations and predictors

We found a strong correlation between the following indicators: department of medical staff, treatment, support services, hotel services, environment, and management services, implying that satisfaction in one indicator depends on satisfaction in others. The strongest correlation was between treatment-related communication and management issues ($r=0.691$; $p\leq 0.001$); the weakest was between support services and hotel services ($r=0.311$; $p\leq 0.001$).

There were no significant differences with sex, age, and length of stay in hospital in any of the satisfaction domains. Significant differences were found only with education level and treatment-related communication. This contrasted with the findings of other studies, where socio-economic variables: age, gender, educational level, work status, and marital and perceived health status: affected satisfaction levels.³⁶⁻³⁸ Unlike our study, an association between perceived health status and patient satisfaction was reported by Xiao et al.³⁶ and Rahmqvist et al, who found that those with a high perceived health status had a greater probability of reporting higher patient satisfaction levels.³⁹

Education was the only predictor of patient satisfaction in treatment-related services. For each of these two statistically significant differences, patients with tertiary education were less satisfied than patients with primary

or secondary education. This is consistent with the findings of Kelarijani et al, who observed high patient satisfaction levels in the illiterate group of their study; those who had Master's and PhD degree showed less satisfaction.⁴⁰

Limitations

This study was limited in its design, with patients recruited through convenience sampling. Random sampling would have been more robust. There may have been recall bias: some patients may have over- or underrated their satisfaction. Self-reporting, inadequate knowledge, and fear of identification and victimization further add to potential bias. The descriptive analysis did not cater for confounding variables such as income, personality type, or staffing arrangements. Further, subgroup analyses were not possible because of inadequate sub-sample sizes. Nonetheless, this cross-sectional study reflects patients' satisfaction with the health service's performance.

CONCLUSION

Significant differences in satisfaction levels exist in nearly all domains. Big gaps continue to exist, especially in hotel and treatment-related support services. The improvement in satisfied patients from a previous 2008 study may have resulted from the addition of the teaching wing. Patients' educational level was the only associated factor and predictor of satisfaction, confined to treatment-related services. Evaluating customer satisfaction is a major tool for improving health care. Health care providers must constantly measure and monitor to manage performance gaps. Improving customer satisfaction gaps requires a multipronged approach to address different domains.

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