RELATIONSHIP BETWEEN PERCEIVED WAITING TIME AND INPATIENTS'SATISFACTION: AN INVESTIGATION IN SELECTED GOVERNMENTMEDICAL COLLEGE HOSPITALS IN KERALA

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Abstract

Waiting time is one of the dissatisfying factors that are frequently cited as a reason why patients switch to another hospital. Patient satisfaction is measurable through several dimensions like physical environment, empathy, communication, interaction, accessibility and technical quality of care.In this study the researcher assesses patients' perception on the waiting time to determine if this can also affect patients' overall satisfaction.Samples of 110 inpatients above the age of eighteen were surveyed from the wards of selected government medical college hospitals in Kerala.Sample frame consist of inpatients of Thrissur, Kottayam and Kozhikode medical college hospitals. Simple random sampling technique is being used for this study. Patients report good perception on waiting time to get the first aid treatment and waiting time due to absence of doctor. Patients reported poor perception on the time spent at office for procedures. Perception of the patients on waiting time is not varying with the age. Patients of different ward report different perceived waiting time. Perceived waiting time has correlation with the inpatients satisfaction but it is not influential to the overall patient satisfaction the relationship is not strong. Perception on waiting time due to absence of doctor is more correlated to satisfaction.

Keywords: *perceived waiting time, patients' satisfaction, service quality, patient perception.*

Introduction

Hospital industry is growing up at a larger speed in Kerala. A number of new private hospitals are mushrooming every year and thereby a wide range of service provider options are available to the patients today.To remain competitive in the field, hospitals started function more patient centered by making patients feel better, both physically and emotionally by giving them advanced technologies in the field.

Even though every hospital function in a certain standards of service, it is not certain whether these hospitals serve their patients the care they need and can ensure the qualities of service to fulfill these patients' expectations when the choose the particular institution. Every aspect of a hospital can alter patient satisfaction; the reputation of a hospital not only depends upon the facility they provide but also includes the manner of staff and doctors towards patients. Generally it seems to indicate that waiting time for service is affected by each step that has to be taken from the moment that patient is admitted to a hospital until they get discharged.

Medical college hospitals are the last resort to the middle and low class people who need cure from severe ailment because the service in these hospitals are funded by the state and almost free of cost.Kerala is a state having large volume of middle class people who usually chose these medical colleges in large number. So one can seelong queue to consult a physician and which makes crowd in the wards of medical college hospitals. Thus patients have no alternative but to wait or their turn.

Normally people comes to hospital to get treatment don't like to wait as everyone wants to get treatment soon as possible. This dislike can cause physical and emotional discomfort and increase anxiety. Apart from the inconvenience being caused by the lag of time to see the service provider, patients are getting more dissatisfied when they are made to wait in a physical environment that is neither comfortable nor relaxing for their condition. Waiting-time in the inpatient ward has important implications, not only for the patient, but also for the hospital and the entire healthcare system in general.

Review of literature

Kong et al (2007) reported that shorter waiting time is more significantly associated with better treatment satisfaction in non-elderly patients. A cross-sectional study on a convenience sample of 20,901 patients was rated through a web-based survey. It found that even though elderly and non-elderly patients had similar waiting times, elderly patients gave higher physician satisfaction scores than non-elderly patients.

Michael et al. (2013) established a strong and inverse relationship between patient satisfaction and wait times in ambulatory care settings. The aim of the project was to increase patient satisfaction by minimizing wait times using the Dartmouth Microsystem Improvement Curriculum (DMIC) framework and the Plan-Do-Study-Act (PDSA) improvement process. The result establish that the DMIC framework and the PDSA method can be applied to improve wait times and patient satisfaction among primary care patients.

Gillian Corbett and Tricia McGuigan (2008) revealed that patients' satisfaction with the see and treat services was high and independent of waiting times alone. When all variables were considered, no significant relationship between waiting time and patient satisfaction was found. Study also reveals that shorter waiting times do not ensure higher patient satisfaction.

K.Syed et al. (2013) investigated the relationship between the environmental, patient, and social-demographic factors to patient wait-time and satisfaction at an orthopaedic follow-up clinic. A sample of 80 patients was tracked through the clinic at various time points. Overall satisfaction scores were calculated as per Visit Specific Questionnaire (VSQ-9). There was a good distribution of age and level of education. There were no statistically significant differences between the total wait-time in clinic, total VSQ-9 scores and age, gender, ethnicity, education, location of injury and overall health. Environmental variables were analysed and it was found that patients reported greater satisfaction when seen only by the surgeon and not the trainee.

McMullen and Netland (2013) establish in their cross-sectional study in an outpatient ophthalmology clinic that there is a significant correlation between the time patients spent waiting and overall patient satisfaction scores. Patients who were not completely satisfied waited twice as long as those who were completely satisfied, regardless of whether patients received free care. Study point out that satisfaction with the amount of time spent waiting was the strongest driver of overall satisfaction.

Significance and scope of the study

It has been seen that those in patients who perceive longer waiting time are still satisfied with hospital service quality. This may be because of the satisfaction of care and cure they got from the hospital. The purpose of this study is to assess the relationship of waiting times within patient satisfaction in government medical college hospitals in Kerala and to find solutions that could change patient perception of waiting times so that hospitals can attain satisfaction of all patients.

There are a number of studies on patients' perception on service quality. Regardless of significance of waiting time in patients' satisfaction which are least studied. Several studies have documented the relationship between waiting time and overall satisfaction. Some of the reviews of patient satisfaction reveal a negative correlation between wait time and general patient satisfaction while others have the opinion that they are not related.

Research problem

Perceived waiting time is one of the biggest indicators of patient satisfaction. However, its effect happens on several levels and through several variables. A long waiting time in a hospital can cause a patient to feel ignored and feel like they are being treated unfairly. Although many patients are examined by a nurse or medical student before being consulted by a senior doctor, this can increase the overall wait time while giving the patient the impression that they will not have to wait much longer. The goal of this study is to examine how inpatients of government medical college hospitals perceive wait time and how it affects their overall satisfaction.

Objectives of the study

This study has the following objectives

1. To study the relationship between perceived waiting time and patient satisfaction.
2. To study the association of demographic variables with perceived waiting time.
3. To identify the factors underlying in perceived waiting time.

Research Methodology

This study is descriptive in nature. Inpatients admitted to medical college hospitals in the month of July 2015 are the population of this study. Sample frame consist of inpatients of Thrissur, kottayam and Kozhikode medical college hospitals. Simple random sampling technique is being used for this study. A sample of 110 inpatients is selected for this survey. Of these, 31 are from Kozhikode medical college hospital, 45 are from Thrissur medical college hospital and 34 are from kottayam medical college hospital. All of them are above the age of eighteen and who have been staying more than three days in the ward.Both primary data and secondary data are used for this study. A structured interview schedule is used for collecting data from inpatients. Cronbach Alpha of this scale in the study sample was 0.93.

Hypothesis

This study aims to prove two hypotheses.

H1: Perception on waiting time has strong relationship with the patients' satisfaction

H2:Patients' perception on waiting time is associated with their demographic factors

Data analysis and discussions

Both descriptive and inferential statistics are used for the analysis of data which is performed on the Statistical Package for the Social Sciences (SPSS) for Windows, Version 20.Four primary analyses are conducted. ANOVA is used to compare mean of perceived waiting times with different age groups, and the department in which they admitted. Pearson's correlation tests are performed to identify significant relationships between patient satisfaction and waiting time. An alpha level of .05 is used for all statistical tests. Factor analysis has been done to find out the most prominent factor in perceived waiting time.

1. Demographic profile of sample

Table No.1: Frequencies and percentages of demographic variables

Demographic Variables		Frequencies	Percentage
Gender	Female	59	53.6%
	Male	51	46.4%
	Total	**110**	**100%**
Age of respondent	Below 20	3	2.7%
	21-40	52	47.3%
	41-60	41	37.3%
	61-80	14	12.7%
	Total	**110**	**100%**
Marital Status	Married	91	82.7%
	Unmarried	19	17.3%
	Total	**110**	**100%**
Education Qualification	Primary education	57	51.8%
	SSLC	35	31.8%
	Plus Two	11	10.0%
	Graduation	7	6.4%
	Total	**110**	**100%**
Occupation	Student	7	6.4%
	Daily Wage	69	62.7%
	Salaried	14	12.7%
	Self Employed	9	8.2%
	Unemployed	11	10.0%
	Total	**110**	**100%**
Poverty Line	Above Poverty Line	34	30.9%
	Below Poverty Line	76	69.1%
	Total	**110**	**100%**
Frequency of visits	First time	38	34.5%
	More than one	72	65.5%
	Total	**110**	**100%**
Ward/ Department	General Medicine	21	19.1%
	Surgery	39	35.5%
	Urology	15	13.6%
	Gynaecology	15	13.6%
	Orthopaedic	20	18.2%
	Total	**110**	**100%**

Source: Primary Data

The sample comprised of 59 (53.6 %) females and 51(46.4 %) males. Age range from less than 20 years (2.7 %) to more than 60 years (12.7 %), with the largest group (47.3%) being between 21 and 40 years

old and next (37.3%) in between 41 and 60 years. The marital status of the respondents re classified as 91(82.7 %) among them are married and 19 (17.3 %) are unmarried. The education qualification of the respondents consist almost all levels, 7 (6.4 %) respondents are graduates, 11(10 %) respondents have passed plus two, 35 (31.8 %) respondents have passed SSLC and 57 (51.8 %) respondents have only primary education.

Among the respondents 7 (6.4 %) are students, 69 (62.7%) are daily wage workers, 14 (12.7 %) are salaried, 9 (8.2) are self-employed and 11(10 %) are unemployed. In case of poverty line, 34(30.9 %) are in APL category and 76(69.1 %) are in BPL category. The acutance of the respondents with the hospitalsis like 38 (34.5%) respondents are came for the first time and 72(65.5%) have experienced hospital stay more than two times in the same hospital. The selected respondents are from different departments. 21(19.1 %) respondents are from general medicine ward, 39 (35.5%) are from surgery ward, 15 (13.6 %) each from urology ward and gynaecology ward and the remaining 20(18.2 %) are from Orthopaedic ward.

2. Perception of inpatients on the waiting time in the hospitals

Table 2: Mean Score and Standard Deviation of perceived waiting time.

Source: Primary data

Perceived waiting time to get the first aid treatment and perceived waiting time due to absence of doctor have got the highest mean of is 3.8182with a standard deviation of .66611and .51011 respectively. So, the inpatients' perception on waiting time to get first aid and waiting time due to absence of doctor is good and satisfactory.The mean score of perceived waiting time due to delay in

	Minimum	Maximum	Mean	Std. Deviation
Perceived waiting time spent at office for procedures	1.00	5.00	.5182	.95525
Perceived waiting time to get the first aid treatment	2.00	5.00	.8182	.66611
Perceived waiting time due to absence of doctor	2.00	5.00	.8182	.51011
Perceived waiting time due to delay in getting blood report, X ray report and other lab reports.	1.00	5.00	.5909	.78162
Overall Perception on Waiting Time	1.50	4.50	.6864	.56406

getting blood report, X ray report and other lab reports is 3.5909 with a standard deviation of .78162. This is the next highest score followed by the mean score 3.5182 of perceived waiting time spent at office for procedures with Standard deviation of .95525. The overall Perceivedwaiting Timeattained mean of 3.6864 and Standard deviation of .56406.

3. Hypothesis testing

1. H0: There is no significant difference in perception of inpatients on waiting time by different age groups.
   H1:There is significant difference in perception of inpatients on waiting time by different age groups.

Table 3(a): ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.753	3	.584	2.165	.096
Within Groups	28.619	106	.270		
Total	30.373	109			

The significance level is .096 (p= .096), which is above 0.05. It means there is no statistical significance in mean of perception on waiting time between the inpatients of different age groups. Hence we accept the null hypothesis that there is no significant difference in perception of inpatients on waiting time by different age groups.

2. H0:There is no significant difference in perception of inpatients on waiting time by different department.
   H1:There is significant difference in perception of inpatients on waiting time by different department.

Table 3(b): ANOVA table

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.634	4	.659	2.493	.047
Within Groups	27.738	105	.264		
Total	30.373	109			

The significance level is .047 (p= .047), which is below 0.05. It means there is statistical significance in mean of perception on waiting time between the inpatients in different department. Here the null hypothesis that there is no significant difference in perception of inpatients on waiting time by different age groups is rejected. So, it states that there is significant difference in perception of inpatients on waiting time by different department.

4. Correlation

Table 4(a):

Correlation between perceived waiting timeand satisfaction

		Patients' Satisfaction	Perceived waiting time
Patients' Satisfaction	Pearson Correlation	1	.282**
	Sig. (2-tailed)		.003
	N	110	110
Perceived waiting time	Pearson Correlation	.282**	1
	Sig. (2-tailed)	.003	
	N	110	110

Pearson's correlation coefficient, r, is .282, and it is statistically significant (p=.003). Since the p value is lower than 0.05, the null hypothesis that there is no correlation between perceived waiting time and patients' satisfaction is rejected. So, the conclusion is that there is positive correlation between perceived waiting time and satisfaction.

Table 4 (b): correlation between different variables of waiting time and satisfaction

Variables	Sig. (2-tailed)	Correlation coefficient *(r)*
Perceived waiting time spent at office for procedures	**.205**	**.122**
Perceived waiting time to get the first aid treatment	**.003**	**.279**
Perceived waiting time due to absence of doctor	**.000**	**.422**
Perceived waiting time due to delay in getting blood report, X ray report and other lab reports.	**.117**	**.150**

Only the Pearson's correlation coefficient between patients' satisfaction and perceived waiting time to get the first aid treatment and those between satisfaction and perceived waiting time due to absence of doctor are significant (p<.05).There is a positive and strong correlation between patients' satisfaction and perceived waiting time due to absence of doctor(r=.422).

5. Factor Analysis

An exploratory factor analysis is done for exploring the underlying dimensions that could have caused correlation among the variables.

Table 5 (a): KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.758
Bartlett's Test of Sphericity	Approx. Chi-Square	05.537
	df	6
	Sig.	.000

KMO test is done for knowing the sampling adequacy and the value is .758 which is acceptable and there is adequate sample to perform factor analysis.

Table 5(b): Communalities

	Initial	Extraction
Perceived waiting time spent at office for procedures	1.000	.683
Perceived waiting time to get the first aid treatment	1.000	.638
Perceived waiting time due to the absence of doctor	1.000	.498
Perceived waiting time due to delay in getting blood report, X ray report and other lab reports	1.000	.524

Extraction Method: Principal Component Analysis.

Extraction communalities for a variable give the total amount of variance in that variable. Here, 68.3 per cent of the variance in perceived waiting time spent at office for procedures is explained by this factor named perceived waiting time.

Table 5 (c): Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.342	58.553	58.553	2.342	58.553	58.553
2	.673	16.816	75.368			
3	.572	14.303	89.671			
4	.413	10.329	100.000			

Table 5 (c) shows the 58.55% total variance is explained by the factor analysis. It gives an indication about the number of useful factors and it is only one factor here.

Table 5 (d): Component Matrix[a]

	Component
	1
Perceived waiting time spent at office for procedures	.826
Perceived waiting time to get the first aid treatment	.799
Perceived waiting time due to absence of doctor	.706
Perceived waiting time due to delay in getting blood report, x ray report and other lab reports	.724

Extraction Method: Principal Component Analysis.

a. 1 component extracted.

Only one component is extracted. So rotated component matrix cannot be performed here. Variable corresponding to particular factors may be given suitable name and here only one variable that is perceived waiting time is the variable under which the four factors are loaded.

Findings of the study

Major findings of the study comprised the following points. Majority of the respondents have only the primary education. More than half of the patients admitted to government hospitals are daily wage workers. Majority of the inpatients are belonging to BPL category. Most of the respondents have previously been admitted in the hospital more than once.

Perception of the patients on waiting time to get the first aid treatment and perceived waiting time due to absence of doctors are found to be satisfactory. The perceived waiting time for getting the first aid treatment and perceived waiting time due to the absence of doctor were much shorter than what the patients were expected. Patients reported poor perception on the time spent at office for procedures. The patients experienced longer duration of time spent for the procedures at the office than what they expected actually. Perception of the patients on waiting time is not varying with the age. Patients of different ward report different perceived waiting time.

Perceived waiting time has correlation with the inpatients satisfaction but statistically one cannot say that there is a strong correlation. All the factors studied in this research are underlying in the major variable named perceived waiting time,

Recommendations

Implementing quick and efficient work methods, removing unnecessary steps and procedures in office and providing quality services to the patients can change the inpatients' perception of waiting time. Many patients reported poor perceived waiting time mainly because of lack of information available to the patient on the duration of time they must wait to get the service. Consistency in the

frequency of interaction with the patients can make them patient. Implementing a desktop application would reduce human intervention and will minimise manual works done by clerical staff. That will result in minimised time consuming which will contribute to the satisfaction of patients.

Conclusion

Government medical college hospitals show entirely different trendto the private hospitals. Most waiting times are over a day and take place in an environment which provides few opportunities for health betterment. The general wards are those places where one gets potential to increase patient education if used appropriately. But in many case patients remain immovable until properly attended to. This may prevent the hospital from providing high quality service to the patient. Even though quality services are provided by the hospital, it is of no use when it is not given at the right time. So, providers should take care of minimising waiting time.

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