



A Cross-Sectional Study to Assess the Relationship Between Level of Patient Satisfaction and their Average Outpatient Waiting Time in a Tertiary Hospital in South Kerala

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Abstract: Background: Prolonged waiting time is a major factor contributing to patient dissatisfaction in outpatient departments (OPDs). Patient satisfaction is one of the best methods to assess the effectiveness of health care delivery and quality of medical care provided to them. Objectives: This study aimed to assess the level of patient satisfaction and determine its relationship with average OPD waiting time among patients aged 18 and above in a tertiary hospital in South Kerala. Methods: A hospital-based cross-sectional study was conducted using a validated questionnaire administered via interviews to 150 participants. Data analysis was performed using Jamovi to calculate descriptive statistics and correlation. Results: The mean age of participants was 46.9 years, with 60% being female. While 76.7% waited less than 10 minutes for registration, 32% waited more than one hour to see a doctor after registration. 80% were satisfied with their overall OPD experience and 89.3% stated that they would recommend the facility to others. Cardiology department has the highest dissatisfaction rate, with 30.0% of patients dissatisfied with the waiting time. Medicine department performed the best, with 93.3% of patients satisfied with the wait. Statistical testing indicated that overall Satisfaction was significantly associated ($P < 0.05$) with departments, waiting time, staff behavior, satisfaction with doctor. Conclusion: While the facility excels in clinical quality and staff behavior, which drive high overall patient satisfaction and recommendation rates, it faces significant challenges in waiting time management, particularly in the Cardiology and Orthopedics departments. Patients are generally satisfied with the people (doctors and staff) but dissatisfied with the process (waiting).

Keywords: Patient Satisfaction, Waiting Time, Outpatient Department, Tertiary Care, South Kerala.

INTRODUCTION

The issue of long patient waits has attracted increasing public attention due to the negative effects of waiting on patients' satisfaction with health care. Patient satisfaction is a key indicator of healthcare quality and plays a vital role in evaluating and improving health services. One of the important factors influencing patient satisfaction in outpatient departments (OPDs) is the waiting time. Prolonged waiting can lead to frustration, reduced satisfaction, and even loss of trust in the healthcare system.[1]

Patient satisfaction is one of the best methods to assess the effectiveness of health care delivery and quality of medical care provided to them. The data collected will help as

a decision-making tool to further enhance the service delivery. Patients come with expectations before their visit and the final satisfaction or dissatisfaction during their visit is reflective of their actual experience.[2] Patients spend a lot of time in the clinics, waiting for their services to be delivered by its staff. The degree to which these patients get the satisfaction with the care received is strongly related to the quality and time of the waiting experience.[3] The duration of waiting time varies from country to country, and from hospital to hospital. Long waiting times have been reported in both urban and rural areas. It is often one of the most frustrating parts about government health care delivery system.[4] There have been many studies that have investigated the factors that influence patient satisfaction in the health care setting. However, there is still limited data related to the factors that may be important in an outpatient setting.[5]

In a tertiary hospital in south Kerala, where large volumes of patients visit daily, managing outpatient flow efficiently is crucial. Understanding how waiting time impacts patient satisfaction can help streamline services, improve patient experiences, and ultimately enhance overall care delivery. This study is being conducted to find out the average OP waiting time, perceived acceptability of waiting time, actual service time, perceived acceptability of service time, actual visit duration, and the levels of satisfaction of patients.

METHODOLOGY

A hospital-based cross-sectional study was conducted at the OPDs of General Medicine, General Surgery, Obstetrics and Gynaecology, Cardiology, and Orthopaedics at Pushpagiri Medical College Hospital, Thiruvalla. Patients aged 18 years and above attending the specified OPDs between 9 am and 12 pm. Patients requiring emergency services or inpatient care were excluded. A convenient sampling method was used to recruit 150 participants. This study will recruit 148 participants. Sample size of this study is adopted from the parent study (6)

Sample size is calculated by this formula

$$n = (Z^2 \times p \times (1 - p)) / d^2$$

Where:

- n = required sample size
- Z = Z-value
- p = estimated proportion
- d = margin of error
- Z = 1.96
- p = 0.7478
- d = 0.07

Substituting:

$$n = (1.96^2 \times 0.7478 \times (1 - 0.7478)) / (0.07^2)$$

$$n = (3.8416 \times 0.7478 \times 0.2522) / 0.0049$$

$$n \approx 0.7246 / 0.0049$$

$$n \approx 148$$

After obtaining informed consent, data was collected using a validated questionnaire covering demographics, registration ease, waiting times, and satisfaction levels. Data were entered in MS Excel and Jamovi was used for descriptive statistics and Fisher's exact tests to determine associations.

RESULTS

The study included 150 participants with a mean age of 46.9 years (SD=18.3). Females constituted 60% of the sample, while males constituted 40%. A significant majority (70.0%) had a prior appointment. The booking process was rated positively, with 85.4% finding it Easy or Very easy. 76.7% of patients received their OP ticket in less than 10 minutes. 32% of patients waited more than one hour to see the doctor after registration. Only 19.3% saw a doctor in less than 15 minutes. 70% of patients reported they were not informed of any delays in their appointment time. While 56.6% were satisfied/very satisfied, a notable portion (16.6%) expressed dissatisfaction with the waiting time. 62% rated staff behavior as "Good" and 30.7% as "Excellent". 92.6% were Satisfied or Very satisfied with the doctor's consultation. 89.3% stating they would recommend the facility to others. Cardiology department has the highest dissatisfaction rate, with 30.0% of patients dissatisfied with the waiting time. Medicine department performed the best, with 93.3% of patients satisfied with the wait.

Statistical Analysis

Association between age and Overall satisfaction

	Overall satisfaction with the OPD experience		
Age	Satisfied	Dissatisfied	Total
< 60	103 (97.20%)	3 (2.80%)	106 (100.00%)
> 60	40 (90.90%)	4 (9.10%)	44 (100.00%)
Total	143 (95.30%)	7 (4.70%)	150 (100.00%)

P= 0.195(Fisher's exact test)

The study found no statistically significant association ($P > 0.05$) between Overall Satisfaction and age

Association between Gender and Overall satisfaction

	Overall satisfaction with the OPD experience		
Gender	Satisfied	Dissatisfied	Total
Female	86 (95.60%)	4 (4.40%)	90 (100.00%)
Male	57 (95.00%)	3 (5.00%)	60 (100.00%)
Total	143 (95.30%)	7 (4.70%)	150 (100.00%)

P= 0.99(Fisher's exact test)

The study found no statistically significant association ($P > 0.05$) between Overall Satisfaction and gender.

Association between Department Visited and Overall Satisfaction

Department visited	Overall satisfaction with the OPD experience		Total
	Satisfied	Dissatisfied	
Cardiology	26 (86.70%)	4 (13.30%)	30 (100.00%)
Medicine	30 (100.00%)	0 (0.00%)	30 (100.00%)
OBG	30 (100.00%)	0 (0.00%)	30 (100.00%)
Orthopedics	27 (90.00%)	3 (10.00%)	30 (100.00%)
Surgery	30 (100.00%)	0 (0.00%)	30 (100.00%)
Total	143 (95.30%)	7 (4.70%)	150 (100.00%)

$P = 0.013$ (Fisher's exact test)

Overall Satisfaction was significantly associated ($P < 0.05$) with departments. Some departments have significantly long waiting time than others.

Association between Prior Appointment and Overall Satisfaction

Prior appointment	Overall satisfaction with the OPD experience		Total
	Satisfied	Dissatisfied	
Yes	99 (94.30%)	6 (5.70%)	105 100.00%
No	44 (97.80%)	1 (2.20%)	45 100.00%
Total	143 (95.30%)	7 (4.70%)	150 100.00%

$P = 0.675$ (Fisher's exact test)

The study found no statistically significant association ($P > 0.05$) between Overall Satisfaction and having a prior appointment

Association between Ease of booking and Overall Satisfaction

Ease of booking	Overall satisfaction with the OPD experience		Total
	Satisfied	Dissatisfied	
Easy	141 (95.30%)	7 (4.70%)	148 (100.00%)
Difficult	2 (100.00%)	0 (0.00%)	2 (100.00%)
Total	143 (95.30%)	7 (4.70%)	150 (100.00%)

$P = 0.99$ (Fisher's exact test)

The study found no statistically significant association ($P > 0.05$) between Overall Satisfaction and ease of booking.

Association between Waiting time to get an OP ticket and Overall satisfaction.

Waiting time to get an OP ticket	Overall satisfaction with the OPD experience		Total
	Satisfied	Dissatisfied	
< 10 minutes	110 (95.70%)	5 (4.30%)	115 (100.00%)

>10 minutes	33 (94.30%)	2 (5.70%)	35 (100.00%)
Total	143 (95.30%)	7 (4.70%)	150 (100.00%)

P= 0.665(Fisher's exact test)

The study found no statistically significant association ($P > 0.05$) between Overall Satisfaction and waiting time for OP ticket.

Association between Waiting time to see Doctor and Overall satisfaction.

	Overall satisfaction with the OPD experience		
Waiting time to see doctor	Satisfied	Dissatisfied	Total
< 30 minutes	69 (98.60%)	1 (1.40%)	70 (100.00%)
>30 minutes	74 (92.50%)	6 (7.50%)	80 (100.00%)
Total	143 (95.30%)	7 (4.70%)	150 (100.00%)

P= 0.122(Fisher's exact test)

The study found no statistically significant association ($P > 0.05$) between Overall Satisfaction and Waiting time to see doctor.

Association Between Informed of any delays in your appointment time and overall satisfaction.

	Overall satisfaction with the OPD experience		
Informed of any delays in your appointment time	Satisfied	Dissatisfied	Total
Yes	43 (95.62%)	2 (4.40%)	45 100.00%
Yes	100 (95.20%)	5 (4.80%)	105 100.00%
Total	143 95.30%	7 4.70%	150 100.00%

P= 0.99(Fisher's exact test)

The study found no statistically significant association ($P > 0.05$) between Overall Satisfaction and being informed of delays.

Association between Satisfied with waiting time and Overall satisfaction

	Overall satisfaction with the OPD experience		
Satisfied with waiting time	Satisfied	Dissatisfied	Total
Satisfied	124 (99.20%)	1 (0.80%)	125 (100.00%)
Dissatisfied	19 (76.00%)	6 (24.00%)	25 (100.00%)
Total	143 (95.30%)	7 (4.70%)	150 (100.00%)

P= <0.001(Fisher's exact test)

Overall Satisfaction was significantly associated ($P < 0.05$) with satisfaction with waiting time. Patients who were dissatisfied with the waiting time were significantly more dissatisfied overall.

Association between Satisfied with staff behavior and Overall satisfaction.

	Overall satisfaction with the OPD experience		
Satisfied with staff behavior	Satisfied	Dissatisfied	Total
Excellent	141 (96.60%)	5 (3.40%)	146 (100.00%)
Poor	2 (50.00%)	2 (50.00%)	4 (100.00%)
Total	143 (95.30%)	7 (4.70%)	150 (100.00%)

$P = 0.011$ (Fisher's exact test)

Overall Satisfaction was significantly associated ($P < 0.05$) with staff behavior. Poor staff behavior was strongly linked to dissatisfaction.

Association between Satisfied with doctor and Overall satisfaction

	Overall satisfaction with the OPD experience		
Satisfied with doctor	Satisfied	Dissatisfied	Total
Satisfied	143 (96.00%)	6 (4.00%)	149 (100.00%)
Dissatisfied	0 (0.00%)	1 (100.00%)	1 (100.00%)
Total	143 (95.30%)	7 (4.70%)	150 (100.00%)

$P = 0.047$ (Fisher's exact test)

Satisfaction with doctor was significantly associated ($P < 0.05$) with overall satisfaction. Satisfaction with the clinical consultation is linked to overall experience.

DISCUSSION

A critical finding of this study is that objective waiting time was not significantly associated with overall satisfaction ($P=0.122$), whereas satisfaction with waiting time (subjective perception) was highly significant ($P<0.001$). A study by Hui Zhang et al shows patient satisfaction with waiting time was not directly affected by actual waiting time, but by subjective waiting times. Patients do not judge the quality of service by the clock alone. If the environment is comfortable or they feel their turn is being handled fairly, they tolerate the objective delay. Research by *Anderson et al.* and *Bleustein et al.* suggests that "time spent with the physician" is a stronger predictor of satisfaction than "time spent in the waiting room." [7]. The study observed extremely high satisfaction rates for staff behavior (92.7%) and doctor consultation (92.6%). This explains your high overall satisfaction rate of 80.0%.

CONCLUSION

The study concludes that while the facility excels in clinical quality and staff behavior, which drive high overall patient satisfaction and recommendation rates, it faces significant

challenges in waiting time management, particularly in the Cardiology and Orthopedics departments. Patients are generally satisfied with the people (doctors and staff) but dissatisfied with the process (waiting). To improve the service, the administration should focus on reducing the bottleneck at the doctor consultation stage and improving communication regarding delays, specifically in the identified high-load departments.

LIMITATIONS

The study captures a snapshot in time. It does not account for seasonal variations in patient load which could drastically alter waiting times.

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Conflicts of Interest: There are no conflicts of interest

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