

OUTPATIENT WAITING TIME AND SERVICE QUALITY: A STUDY AT CSI JAYARAJ ANNAPACKIAM MISSION HOSPITAL, TIRUNELVELI

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ABSTRACT

The level of satisfaction of patients in out-patient clinics is largely determined by their waiting period and the quality of services provided. In this regard, the present research focuses on studying the waiting time and service quality at CSI Jayaraj Annapackiam Mission Hospital, Tirunelveli, a mission-based hospital in the state of Tamil Nadu. The study utilizes a survey method using a questionnaire distributed among 51 out-patients in order to gauge their satisfaction with registration, consultation, pharmacy, billing, and staff responsiveness. Descriptive statistics and correlation analysis have been used for analyzing data collected from patients. The results reveal that a majority of patients are generally satisfied with the registration and consultation services offered, but there is still room for improvements in pharmacy and billing departments.

Keywords: Outpatient services, waiting time, service quality, patient satisfaction, hospital management, SERVQUAL.

1. INTRODUCTION

The health care industry holds an important place in the economic system of a nation since it provides preventive, curative, and rehabilitative services to people. In India, the health care industry has seen remarkable growth owing to the increase in population, health consciousness among individuals, prevalence of lifestyle diseases, and the implementation of various government schemes like Ayushman Bharat and National Health Mission. In this context, the hospital acts as the focal point of service delivery involving doctors, nurses, administrative staff, and other support staff.

Out of all departments in the hospital, the OPD department acts as the most visited area for patients. It significantly impacts their perception about the hospital and hence determines their loyalty towards the organization. Some of the factors that influence patient satisfaction in OPD departments include registration process, appointment process, pharmacy service, billing, and behavior of hospital staff.

The variable 'waiting time,' which represents the total time a patient needs to wait before being attended to at a health facility, has always proved to be one of the most effective predictors of patient dissatisfaction in the literature. Extended waiting times cause frustration and lead to a deterioration in the quality of care received by the patients. In contrast, organizations that have minimized any form of delays appear very efficient and patient-focused.

The CSI Jayaraj Annapackiam Mission Hospital is situated in the district of Tirunelveli in Tamil Nadu. It is a mission hospital that seeks to offer compassionate and economical care to all social strata. Despite having a reputation for high-quality services, there has never been a comprehensive study on outpatient waiting times and service quality at the hospital. This research aims to fill the gap by carrying out a quantitative analysis of the perceptions of outpatients.

1.1 Objectives of the Study

Main Objective

- To understand the waiting time and quality of service provided at the CSI Jayaraj Annapackiam Mission Hospital, Tirunelveli.
- Secondary Objectives
- To analyze the waiting time in the process of registration, consulting, pharmacy, and billing.
- To evaluate the effectiveness of staff in rendering services to outpatients.
- To determine patient satisfaction with the service quality provided in the hospital.

- To find out the determinants of patient satisfaction in the OPD.

1.2 Scope of Hospital Services

The hospital provides a wide array of clinical and auxiliary services, which include 24×7 emergency services, NICU and ICU services, fully furnished labour rooms and operation theaters, 24×7 pharmacy and ECG/ECHO services, haematology, biochemistry, microbiology, and histopathology laboratories, besides OPDs for Paediatrics, Obstetrics and Gynaecology, General Surgery, General Medicine, and Orthopaedics.

2. REVIEW OF LITERATURE

There is a vast amount of literature that supports this study. Parasuraman et al. (1988) provided the theoretical framework of SERVQUAL by delineating the five main attributes of service quality: reliability, responsiveness, assurance, empathy, and tangibility. It was evident from their research that the best service quality could lead to customer satisfaction, which has been confirmed several times in the health care sector.

Further researches on health care corroborated these studies. Anderson (2015) found that the excessive waiting period caused patients' dissatisfaction and advised hospitals to adopt better scheduling methods. Kumar (2017) stressed the significance of the connection between the decreased waiting period and increased trust. Rao (2017) pointed out that effective staff coordination was the only variable that could be managed to reduce OPD waiting periods.

As highlighted by Kumar & Prasad (2020), the lack of structured appointment booking systems contributes to delays. Indeed, the World Health Organization (2020) emphasized that the importance of timely and communicating healthcare provision lies in significantly boosting patients' satisfaction levels. Domestically, Rajan (2021) proved that the implementation of token-based digital queuing systems helps to prevent overcrowding, and the study by Kumar et al. (2021) revealed that efficient work of pharmacists and billing specialists is positively associated with high satisfaction.

The most recent evidence from Tamil Nadu on the topic was provided by Devi & Rani (2022), Stephen (2022), and Kumaravel (2023). All these studies concluded that responsiveness, reliability, and effective communication are the most powerful predictors of patient loyalty in both mission and private facilities. Overall, these findings allow one to conclude that the reduction of waiting times and improvement of service quality should be considered top priorities for hospitals.

3. RESEARCH METHODOLOGY

A descriptive research approach was chosen for the study, an appropriate methodology when describing patients' perceptions and measuring the dispersion of satisfaction scores among various dimensions of service delivery. Primary data were gathered through a well-prepared questionnaire handed out to outpatients in person at CSI Jayaraj Annapackiam Mission Hospital. Secondary data comprised hospital records, peer reviewed journal articles, books, and other institutional documents.

3.1 Sampling Design

A convenience sampling method was used in the study owing to its exploratory nature and lack of time, with 51 respondents taken from patients who visited the OPD during data gathering. Age bracket, education level, and visits to the hospital were some of the demographic factors recorded.

3.2 Instrument Design

The questionnaire included two parts. Part A was related to demographic data collection, while Part B involved twenty statements about opinion which were rated on a four-point Likert scale (SA = 4, A = 3, N = 2, D = 1). The statements referred to four aspects of services including registration, consultation, pharmacy, and billing. There was a group of overall quality of services and staff response as well.

3.3 Analysis Methods

SPSS was used to code, clean, and analyze data. Frequency distribution analysis and percentage analysis were utilized in the interpretation of demographic and opinion data. Pearson correlation matrix was determined for each aspect of services. The significance level of correlations was indicated by * ($p < 0.05$), ** ($p < 0.01$), and *** ($p < 0.001$).

4. ANALYSIS AND INTERPRETATION

4.1 Demographic Profile of Respondents

Table 1: Age Distribution of Respondents

Age Group	Frequency	Percentage (%)
Below 20	1	2.0
21–30	50	98.0
Total	51	100.0

The sample is heavily concentrated in the 21–30 age group (98.0%), reflecting the hospital's outreach to young adult patients in the Tirunelveli catchment area.

Table 2: Educational Qualification of Respondents

Qualification	Frequency	Percentage (%)
UG Graduate	30	58.8
PG Graduate	19	37.3
Other	2	3.9
Total	51	100.0

The majority of respondents (58.8%) hold undergraduate degrees, indicating that the patient base is largely educated and capable of providing nuanced service evaluations.

Table 3: Frequency of Hospital Visits

Visit Frequency	Frequency	Percentage (%)
First Time	9	17.6
Occasional	38	74.5
Regular	4	7.8
Total	51	100.0

It appears that occasional visitors represent the majority (74.5%), indicating that the hospital operates within a wider community which does not depend solely on it for its primary healthcare services.

4.2 Registration Process

Table 4: Patient Opinions on Registration Services

Statement	SA (%)	A (%)	N (%)	D (%)
Registration completed quickly	13.5	42.3	38.5	5.8
Did not wait long for registration	7.7	61.5	30.8	—
Registration counter well managed	25.0	42.3	30.8	1.9

Staff handle registration efficiently	15.4	46.2	34.6	3.8
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From all four items measuring registration, 'Agree' was found to be the most dominant response. The highest positive response was noted for the item about appropriate waiting time at the counter (61.5% of those surveyed 'Agreed'). A significant number of respondents (25.0%) also 'Strongly Agreed' that the counter is appropriately run, signifying satisfaction with the management of this checkpoint.

4.3 Consultation Services

Table 5: Patient Opinions on Consultation Services

Statement	SA (%)	A (%)	N (%)	D (%)
Wait long before meeting doctor	23.1	46.2	26.9	3.8
Consultation started on time	11.5	50.0	38.5	—
Waiting time for consultation acceptable	17.3	50.0	28.8	3.8
Doctors attend without unnecessary delay	17.3	50.0	28.8	3.8

The situation regarding consultation is more complex. Even though 50.0% of the respondents agreed that consultations begin on time and that waiting for consultations is okay, 23.1% strongly agreed that they waited for a long time before they saw the doctor – the highest percentage of strong agreement among all the negative aspects mentioned.

4.4 Pharmacy Services

Table 6: Patient Opinions on Pharmacy Services

Statement	SA (%)	A (%)	N (%)	D (%)
Medicines provided quickly	19.2	30.8	32.7	17.3
Did not experience long waiting	9.6	44.2	38.5	7.7
Pharmacy staff work efficiently	13.5	48.1	30.8	7.7
Pharmacy queue well managed	19.2	40.4	30.8	9.6

For the pharmacy department, it is evident that there is the greatest degree of variability. Fast dispensation of medicines had the greatest percentage of the neutral response (32.7%), and also a relatively high percentage of disagreement (17.3%), which is the highest among all service indicators examined. It indicates that the problem lies with fast dispensation of medicines more than with any other service indicator.

4.5 Billing Process

Table 7: Patient Opinions on Billing Services

Statement	SA (%)	A (%)	N (%)	D (%)
Billing process is fast	25.0	26.9	34.6	13.5
Did not face delay during payment	7.7	40.4	36.5	15.4
Billing staff are efficient	9.6	28.8	48.1	13.5

Billing counter well organized	15.4	26.9	48.1	9.6
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In the Billing category, the highest percentage of indifference is found at 48.1%, wherein the subjects do not give their opinions regarding the efficiency of the staff and the organization of the counter. This indifferent reaction could be because patients were unsure of the procedures regarding billing rather than being unsatisfied with it.

4.6 Overall Service Quality

Table 8: Overall Patient Satisfaction Indicators

Statement	SA (%)	A (%)	N (%)	D (%)
Satisfied with service quality	17.3	38.5	32.7	11.5
Hospital provides reliable & efficient service	15.4	51.9	28.8	3.8
Staff responsive to patient needs	15.4	36.5	40.4	7.7
Hospital provides caring environment	—	—	—	—

The most significant result is the 51.9% agreement rating by respondents on the quality and efficiency of services provided by the hospital – the highest amongst all other ratings obtained in the study. On overall satisfaction, respondents agreed at a rate of 38.5%, while a total of 17.3% strongly agreed. On the staff's promptness in responding to patients, there was a majority of neutral answers (40.4%).

4.7 Correlation Analysis

To determine the degree of association between various service quality factors, Pearson correlations matrices were determined for each service domain separately as follows.

Table 9: Correlation Matrix — Registration Domain

Variable	Q1	Q2	Q3	Q4
Registration completed quickly (Q1)	1.000	.537***	-.026	.382**
Did not wait long for registration (Q2)	.537***	1.000	.416**	.516***
Registration counter well managed (Q3)	-.026	.416**	1.000	.308*
Staff handle registration efficiently (Q4)	.382**	.516***	.308*	1.000

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

A positive relationship with a coefficient of .537 and p-value less than .001 was established between the registration speed perceived by the respondents and the absence of long waits, thus, proving that the two metrics reflect the same phenomenon. The efficiency of the employees was found to be positively correlated with both waiting time metrics.

Table 10: Correlation Matrix — Consultation Domain

Variable	Q5	Q6	Q7	Q8
Wait long before meeting doctor (Q5)	1.000	.639***	-.036	.216

Consultation started on time (Q6)	.639***	1.000	.399**	.553***
Waiting time for consultation acceptable (Q7)	-.036	.399**	1.000	.535***
Doctors attend without unnecessary delay (Q8)	.216	.553***	.535***	1.000

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The very high correlation between wait before seeing the doctor and consultation start time ($r = .639$, $p < .001$) indicates that patients' perception about the punctuality depends mainly on the availability of the doctor, and not the appointment time itself. The negative but non-significant relationship between wait long and acceptable waiting time seems to indicate that these represent two distinct constructs.

Table 11: Correlation Matrix — Pharmacy Domain

Variable	Q9	Q10	Q11	Q12
Medicines provided quickly (Q9)	1.000	.781***	.480***	.553***
Did not experience long waiting (Q10)	.781***	1.000	.482***	.504***
Pharmacy staff work efficiently (Q11)	.480***	.482***	1.000	.533***
Pharmacy queue well managed (Q12)	.553***	.504***	.533***	1.000

Note: *** $p < 0.001$

The pharmacy area shows the most consistent and strongly correlated relationships, where all inter-correlations were significant at $p < .001$. The almost perfect correlation between medicine dispensing rate and total pharmacy wait time ($r = .781$) further emphasizes that dispensing rate is the key factor to increase pharmacy satisfaction.

Table 12: Correlation Matrix — Billing Domain

Variable	Q13	Q14	Q15	Q16
Billing process is fast (Q13)	1.000	.795***	.477***	.380**
Did not face delay during payment (Q14)	.795***	1.000	.574***	.475***
Billing staff are efficient (Q15)	.477***	.574***	1.000	.545***
Billing counter well organized (Q16)	.380**	.475***	.545***	1.000

Note: ** $p < 0.01$; *** $p < 0.001$

Speed of the billing process and payment delays are the variables that correlate very highly among themselves in this field ($r = .795$, $p < .001$), and this implies that perceived speed becomes almost synonymous with payment experience. Organizational factors such as counter organization and staff effectiveness are also correlated, albeit much less than the above, with the main function being supportive in nature.

Key Findings

The following findings were revealed in the descriptive and correlational data analyses:

- The research was carried out among 51 outpatient participants, of which 98.0% were aged between 21 to 30 years.
- University Graduates made up 58.8% of the participants, whereas Postgraduate graduates made up 37.3% of the total number, showing a very high level of education among the study population.
- Visitors who visited the hospital occasionally were the largest category of visitors, making up 74.5% of all the visitors.
- Registration services had positive feedbacks, with 61.5% of participants reporting that they did not have to wait for long during the process, and 42.3% reporting that it was done quickly.
- Consultation services received high approval ratings on timeliness and acceptability, but 23.1% strongly agreed that the waiting time before consultation is relatively long.
- Pharmacy medicine dispensation was the most contested variable, with 32.7% of participants being neutral and 17.3% disagreeing.
- Efficiency of billing services and counter organization also had high neutrality levels (48.1%).
- The service aspect with the highest percentage of agreements (51.9%) was hospital reliability and efficiency.
- The correlation analysis proved that there are strong inter-relations within each domain of services

Suggestions and Recommendations

From the analysis presented above, the following recommendations are made to hospital management:

- Adopt a well-defined system of appointment scheduling and token-based queuing process in the OPD in order to minimize consultation waiting period.
- Hire more pharmacists to attend to patients who come to receive medicines during peak hours (09:00 am – 12:00 pm).
- Introduce a simpler billing platform such as a bedside billing terminal or incorporate mobile payments system to eliminate the 15.4% dissatisfaction recorded in this aspect.
- Establish prominent signboards with information in different languages and create a help desk for guiding patients through the OPD registration process.
- Organize staff training programs on regular basis, especially on communication skills, handling of patients and empathy for pharmacy and billing staff.
- Create a feedback mechanism by using digital terminals and SMS messages to collect data on the quality of services provided in order to identify deficiencies in service provision promptly.
- Develop waiting room facilities like air conditioners, adequate seating arrangements and display of average consultation period to ease the effect of waiting period.

4. CONCLUSION

This study presents a comprehensive, data-based evaluation of the outpatient waiting times and services provided at the CSI Jayaraj Annapackiam Mission Hospital in Tirunelveli. It becomes evident that the hospital has developed a highly satisfactory service base in terms of registration efficacy and overall reliability, but there is room for improvements in the area of pharmacists' efficiency in dispensing medicine and billing transparency.

As the results of the correlation analysis show, patient satisfaction is not influenced by any of the individual factors. All service domains are connected in a complex system of interrelated indicators, where the improvement of one aspect leads to additional changes to related ones. In this context, decreasing pharmacy dispensing waiting times should be expected to produce the most significant positive influence since of all aspects, this one has shown the highest correlation with patient satisfaction.

In view of the hospital's mission of providing accessible, compassionate and ethical healthcare services, the identified opportunities can serve as a basis for further enhancements of the institution's operations. Taking into account the importance of implementing digital queuing management systems, staff training programs, and other necessary improvements to the communication process, the hospital is likely to achieve even higher levels of

5. REFERENCES

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