



**A COMPARATIVE STUDY ON WAITING TIME IN VARIOUS DEPARTMENTS IN MUTHOOT MEDICAL
CENTRE, KERALA**

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ABSTRACT:

Queue is a waiting line or the act of joining a line. It is formed when the number of customers arriving is greater than the number of customers being served during a period of time. This study is essentially focused on the queuing system of healthcare centre operations. It is mainly based on the reducing of waiting time of patients in the departments of Laboratory, Registration and Pharmacy at the Muthoot Medical Centre as these were the three departments that the hospital is facing long waiting times and complaints by the customers due to this issue.

Objective of the study is to identify the reasons for long waiting times at the three selected departments of the hospital and suggest improvements to increase the efficiency for serving patients.

The researcher has found out the causes of delay through observation which are recorded in cause and effect diagram of the departments and through the analysis done in each department. Queuing model was used to know the average waiting time per person in each department. It also helped to identify where the delay occurs in the process.

This study provides suggestions to the hospital management to introduce a token system at the registration, decrease waiting time by increasing the servers, and to keep the patients occupied during the waiting period in-order to significantly reduce the waiting time in the departments of study.

KEY WORDS: Waiting time, Queuing system, Registration, Customers, Patients

STATEMENT OF THE PROBLEM:

There is an increasing concern to improve the quality of administration in the hospitals to meet the rising expectations of the people. Apart from the quality of staff and equipment's the experience and the image carried by patients about the hospital depend on the human aspects like concern, waiting time and understanding shown by the hospital staff. This study is mainly focused on reducing the waiting time of the patients at Muthoot Medical Centre, Kozhencherry, Kerala, the reasons for the same in various departments and recommendations to decrease waiting time.

Thereby, the research questions raised are:

- Waiting times at the registration, pharmacy and laboratory departments
- Average time spent by the patients in each department
- Measures to reduce the delay and waiting time in these departments
- How queuing model can help to reduce the waiting time

OBJECTIVES:

PRIMARY OBJECTIVE:

To identify the reasons for long waiting times at the three selected departments of the hospital and suggest improvements to increase the efficiency of serving patients

SECONDARY OBJECTIVE:

- To identify the average time spent by a patient in the registration, laboratory and pharmacy.
- If the waiting time is high, then to identify the factors responsible for high waiting time in the registration, laboratory and pharmacy.
- To recommend appropriate suggestions to optimize the waiting time.
- To apply queuing model for reducing the delay.

SCOPE OF THE STUDY:

As the research topic would suggest at a glance, the scope of this, is essentially focused on the queuing system of healthcare centre operations. This study is mainly based on the reducing of waiting time of patients in the departments of Laboratory, Registration and Pharmacy at the Muthoot Medical Centre as these are the three departments that the hospital is facing long waiting times and complaints by the customers due to this issue.

LIMITATIONS OF THE STUDY:

- Time constraint: Time was a major constraint to the study, as many of the top managers and functional managers were busy with their own routine.
- Lack of access to confidential data: The top management was reluctant to disclose information related to the internal affairs of the organisation.

- Lack of support of employees: Most of the employees had their assigned tasks to complete for the day. So, sufficient time was not available to be able to interview them in detail.

RESEARCH APPROACH:

The research approach adopted in this study is descriptive method. This includes collection of data using observational checklist from patients arriving at the three departments chosen for study which are Registration, Laboratory and Pharmacy.

COLLECTION OF DATA:

Primary Data: Observation method and Interview method

Secondary Data: Internet, hospital records and other sources

INCLUSION AND EXCLUSION DATA:

Data has been collected only from three departments which were allotted by the hospital guide. The three departments studied are:

- Registration
- Laboratory
- Pharmacy

In-patients and patients admitted under emergency situations have been omitted in the study.

Data has been collected from the three departments from 7:00AM - 3:00PM. This was mainly because patients visit these departments mostly in this time slot. Only outpatients were considered for the study.

SAMPLE SIZE:

The sample size of the study includes patients reporting to the outpatient department of the hospital. 500 samples were taken from laboratory, 1000 from registration and 700 from pharmacy.

METHOD OF DATA ANALYSIS:

Data was collected by using the time study format in each department such as registration, laboratory and pharmacy. In laboratory five tests were taken to study the time taken at the department.

DESCRIPTIVE ANALYSIS:

The hospital has three types of patients coming: Inpatients, Outpatients and patients admitted under emergency. Observations have been made for one and a half month. Each department was studied completely for one week duration from Monday-Saturday. Each patient reporting to the department was studied and noted. From this the patient waiting time and the patient flow was studied to identify peak hours.

FINDINGS:

1. Both females and males visit the hospital, but it is seen that more females are visiting the hospital as 54% are females and 46 % are males.
2. Most of the patients belong to the age group of 45 – 60 years which account for 34% of the total patients, followed by 16-30 years that account for 24% of the total patients.
3. 66% of people are waiting 10 – 20 minutes to see the doctor.
4. 58% of people come by taking appointments, 38 % of people come by taking new file and 4 % people arrive on emergency.
5. The maximum count of people arrives between 9am – 12 pm in the registration counter and the maximum number of people arriving is on Wednesdays.
6. The maximum count of people arriving is between 8 am – 9 am in the lab and the maximum number of people arriving is on Mondays.
7. The maximum count of people is arriving at 12 pm - 1pm in the pharmacy and the maximum number of people is arriving on Wednesdays.
8. At the registration counter most of the people take 2 – 5 minutes and at the pharmacy most of the people take 5 – 10 minutes for serving.
9. Saturday waiting time is longer for short time tests in lab.
10. The peak time when people are more at the registration counter is at 9am – 12 pm, from 11 am- 12 pm at the pharmacy and from 8am – 9 am at the laboratory.
11. The maximum average count of people arrives at the registration at 11am-12pm, 12pm-1pm at the pharmacy and 8am – 9am at the laboratory.
12. Cash payment at registration and pharmacy takes longer time due to non-availability of lower denominations of currency.

13. Peak time:

Department	Time	Day
Laboratory	8am – 9am	Monday
Pharmacy	10am – 12pm	Wednesday
Registration	9am – 12pm	Wednesday

14. Patient satisfaction is dominated by factors like doctors and staff and waiting time of processes.
15. The system sometimes get hanged in the registration and also while billing in pharmacy and laboratory.

16. The fax machine which is in pharmacy sometimes does not work properly due to which the prescription of the patients does not reach the pharmacy, the patients will not be called for paying of bill, and medicines will not be given on time.
17. In pharmacy more delays occur due to less staff and non-experienced staff.
18. In pharmacy one of the reasons for the delay is that while collecting medicine they attend the calls.
19. In laboratory too much crowd is seen with the trainees.
20. In laboratory incidents such as mishandling of medicinal packs and delay in reports to be readied were noticed.
21. In pharmacy it is seen that some of the medicines are out of stock mainly due to some patients buying in bulk quantity. Due to this many patients buy medicine outside the hospital.
22. Some patients need to wait so long as doctors are busy in surgery section.
23. Fish bone diagram of registration department shows the root causes of delay as filling of new file of patient, long queue, non-availability of lower denominations of currency, system and printer problems.
24. From calculations we see that the average waiting time of the patient in the registration is 3.96 minutes. Based on the minimum standards of the hospital the waiting time at the registration should be 3 minutes. Therefore, the waiting time of the registration is unsatisfactory.
25. Fish bone diagram of laboratory department shows the root causes of delay as mishandling of medicinal packs, more number of students in the lab, the process being carried out by the trainees etc.
26. Fish bone diagram of pharmacy department shows the root causes of delay as less number of staff employed for collection of medicine, some medicine out of stock, the same staff employed for verifying and dispatching of medicine and attending of calls in-between collection.

SUGGESTIONS:

1. Most of the patients spend 10 – 20 minutes with the doctor. In order to reduce the delay more doctors can be employed in the same departments.
2. More counters of service must be opened during peak times and peak days for each department
3. In registration department, maximum patients arrive at 9 am – 12 pm so, more counters should be opened to reduce the delay

4. In laboratory, most of the people arrive at 8am – 9am. In order to avoid the delay more staff should be employed for taking the samples.
5. In pharmacy, most of the people arrive at 12 pm – 1pm, so to avoid the delay in collection of medicine more staff should be employed. Also other staff for verifying and dispatching must be employed.
6. The staff members who are employed in the billing of registration and pharmacy should have enough lower denominations of currency. When the changes of the currency notes are not available there should be staff to go to finance department and collect enough changes of currency.
7. In every department there should be experienced staff with the new staff.
8. Training should be given to the staff to avoid the undue delay.
9. The computer systems which has got problem should be given for repairing.
10. The fax machine should be maintained properly.
11. In pharmacy more staff should be employed for collection, verifying, dispatching and for attending the calls.
12. In laboratory, trainees should be available during busy time and the process should be done by the experienced staff.
13. In laboratory the staff should be careful about handling of the blood samples, machines etc.
14. In pharmacy the staff should inform the person concerned about the fast moving medicines and should maintain the stock. The staff should maintain the daily records such as expiry of the medicine, fast moving medicine, medicine which is out of stock and inform the person concerned.
15. As some doctors have surgery duty on particular days, the patients who have taken appointment on that day in advance should be informed about the matter and when they can meet the doctor.
16. Employees should be given proper job orientation at the time of joining.
17. The inter-departmental as well as intra-departmental communication should be effective, informative and systematic.
18. Training programmes should be conducted for the staff as they will know how to treat the patients without any delay.
19. Standard time should be known for every process so that employees seek to maintain the time.

20. Periodic time study in every department should be conducted as to know if any delay occurs in the process.
21. Electronic cash payment has to be introduced in the hospital.
22. A highly conducive and proactive work culture shall be developed.
23. The idle time of registration is 28.08 minutes, laboratory is 66.6 minutes and pharmacy is 27 minutes. Therefore, the departments must reduce the undue delay by following the systematic process.

CONCLUSION:

The study conducted among the registration department, laboratory department and pharmacy department at Muthoot Hospital on the subject topic, helped to identify the areas where the delay occurs and where the patients are waiting more.

Queuing model has been used to know the average waiting time per person. It also helped to identify where the delay occurs in the process. This study provides suggestions to the hospital management to introduce a token system at the registration, to decrease waiting time by increasing the servers, and to keep the patients occupied during the waiting period in-order to significantly reduce the waiting time in the departments of study.

From the study it can be concluded that the hospital lack in providing the staff with ideas to reduce the delay in the process. The management should take necessary steps to avoid unnecessary delay in the process and to serve the patients without undue waiting time, so that the staff can do their work effectively and can achieve customer satisfaction in their serving services.

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