

**Original Article**

A Study of Determinant of Long Waiting Period in Outpatient Department and Recommendation on reducing waiting time in a Superspecialty Hospital

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Abstract

A study of determinant of long waiting period in outpatient department and recommendation on reducing waiting time in Superspeciality hospital

This is a cross sectional observational study conducted in a tertiary care Superspeciality hospital, during the study both qualitative data like factors responsible for long waiting time in OPD, its impact on patient satisfaction and quantitative data like average waiting time of the patients in outpatient department was studied.

Aim and Objectives

- 1) To find the determinant of long waiting period in OPD
- 2) To determine the patients satisfaction for OPD services
- 3) To give recommendation on reducing waiting time in the out-patient department

Material and Methods: *The systematic sampling technique was carried out by simple random sampling. The first patient visiting the registration counter was taken as starting point and thereafter next patient randomly selected who came for registration to the OPD after the interval of 2 to 3 minutes, was enrolled in the study if he give consent till 100 patients was selected in each day. This data was collect for 5 day (Monday to Friday). The questioner was collected when the patient's complete consultation was done.*

Results: *Form the observation of this study and revive of liturature we can definitely conclude that due to heavy patients inflow in our outpatient department we need to analyse and adopt verious que management methods. Whether it's a time used for registration of patient, routine doctor's appointment, emergency room treatment, laboratory/diagnostic test, procedures, receiving the results of various tests, waiting happens to just about everyone seeking medical care. It's often one of the most frustrating parts about healthcare delivery system. Waiting times for elective care have been considered a serious problem in many health care systems since it acts as a barriers to efficient patient flows and it should be minimum to improve patient satisfaction.*

Conclusions: *From the finding of above studt it was clearly indicate that maximum patients (81.55%) feel need for improvement in outpatient service and the waiting time in outpatient department was most distressing (73.33%) and its reduction was to be done on priority to improve.*

Keywords: *Outpatient department, patients waiting, superspeciality hospital, Que management.*

Introduction

In any hospital the outpatient department being the first point of contact between the patient and the hospital, is the mirror of the hospital, which reflects overall functioning of the hospital. With increasing number of patients visiting multispecialty hospital, OPD services of majority of the hospitals are facing queuing and waiting time problems that was important reason for patient dissatisfaction. Waiting for consultation and getting investigations done in the hospital is one of the main reason behind patient does not want to avail the services of that particular hospital. Provision of quick and efficient services is the need of time.

Most Patients spend substantial amount of time in the clinics waiting for services to be delivered by physicians and other allied health professionals. The actual time spent for consultation was 5 to 10 minutes as compare to large waiting time. The degree to which health consumers are satisfied with the care received is strongly related to the quality of the waiting experience. Healthcare organizations that strive to deliver exceptional services must effectively manage their clinic wait.^[1]

Waiting time refers to the time a patient waits in the outpatient department before being seen by one of the clinic medical staff.^[2] Patient clinic waiting time is an important indicator of quality of services offered by hospitals.^[3] The amount of time a patient waits to be seen is one factor which affects utilization of healthcare services. Patients perceive long waiting times as a barrier to actually obtaining services.^[4] Keeping patients waiting unnecessarily can be a cause of stress for both patient and doctor. Failure to incorporate consumer-driven features into the design of wait experience could lead to patient and provider dissatisfaction.

The Institute of Medicine (IOM) recommends that, at least 90% of patients should be seen within 30 min of their scheduled appointment time.^[5] This is, however, not the case in most developing countries, as several studies have shown that

patients spend 2-4 h in the outpatient departments before seeing the doctor.^[6,7,8] In the developing countries where the health facility are unevenly distributed, number of patients visiting multispecialty hospital was increasing. A source of dissatisfaction with health care reported by patients is having to wait a long period of time in the clinic,^[9] and several studies have documented the negative association between increased waiting time and patient satisfaction with primary care.^[10,11]

The duration of waiting time varies from country to country, and even within country it varies from center to center. Long waiting times have been reported in both developed and developing countries. In the USA, an average waiting time of about 60 min was found in Atlanta,^[12] and an average of 188 min in Michigan.^[13]

In Nigeria, an average waiting time of about 173 min was found in Benin,^[9] while in University College Hospital Ibadan, a mean waiting time of 1 h 13 min was observed.^[14]

Background of Study

The study was conducted in the Superspeciality hospital, a tertiary care centre in central India. The patients coming in this Hospital consist from the patient referred from the Government Medical College and Hospital and the patient coming from nearly 500 kilometer of radius from surrounding 5 states in addition to local patients. Being the only hospital providing the Superspeciality services in government sector, a lot of patients visit hospital every day. As hospital provide high quality services at affordable price and with help of government's various initiatives major procedure are performed at low cost.

As this hospital has several Superspeciality departments handling the patients in outpatient department is really a challenging job. Daily nearly 2000 patients visit the outpatient department. As the OPD had a limited space which cannot be increase in immediate future and due to large patient visiting the OPD there was

long waiting which result in both patients and Doctors dissatisfaction and increase stress.

Prerequisite of the clinic management was, that according to the requirements of the ISO 9001: 2000 certified quality management system of clinic^[15,16,22,23,24] the appointment scheduling of the outpatients' department should be improved with respect to efficiency and service quality. So, the duty of the established interdisciplinary task force was the systematic analysis of deficits in our appointment scheduling practice by means of quality management measures. Inefficient procedures had to be analyzed and improvements to be developed. Aim was to simplify scheduling of patient appointments, to assign patients more purposefully to specialty consulting hours, and to allow for more consultation time for patients and referring doctors the like. Then these remedial measures had to be integrated into daily clinical routine. Finally the practicability of these procedures had to be investigated.

Aims and Objective

- 1) To find the determinant of long waiting period in OPD
- 2) To determine the patients satisfaction for OPD services
- 3) To give recommendation on reducing waiting time in the out-patient department

Material and Methods

This is a cross sectional observational study conducted in a tertiary care Multi specialty hospital after the ethical comity permission for conduction of this study. During the study both qualitative data like factors responsible for long waiting time in OPD, its impact on patient satisfaction and quantitative data like average waiting time of the patients in OPD, percent distribution of satisfaction score given by the patients has been collected. The data has been collected through face to face interview with the help of semi- structured questionnaire and to estimate the average waiting time daily reporting of in-time and out-time of patients coming in the

has been measured. Data regarding the number of patient visiting Outpatient department every day, their number in different department and other statistical information are collected from the medical record section of the Hospital. The study area is Superspeciality Hospital Out Patient Department. This study was carried out between in February 2017 at the OPD of Multispecialty Hospital in central India. The teaching hospital is one of the tertiary health institutions in the state and acts as a referral for patients in the central India.

The hospital OPD timing is from 9.00am to 3.00 pm, from Monday to Saturday and OPD was close on Sunday. OPD registration counter open at 8.30 am and the registration close at 2.00 pm. Due to gradual increase in the number of patient visiting the outpatient department there was a long waiting period for patient for consultation with Doctor, for investigations and further treatment resulting in to conflict between the hospital staff and patients resulting dissatisfaction among the patients, Doctor and hospital staff. This study was conducted to find the determinant of long waiting period in OPD and recommendation on reducing waiting time in the out-patient department in a Superspeciality hospital

The study was descriptive cross-sectional in design involving all patients seen at the OPD. Structured questionnaire and waiting time assessment card were used to elicit information on socio-demographic characteristics of patients, time spent before registration, time spent in the waiting area, and time spent with a doctor, Time spend for investigation and time required for final consultation , total duration from hospital entry to exit of hospital is noted. Trained health personnel assisted respondents who could not read or write in completing the questionnaire.

The questionnaire was given at entry of OPD of the hospital. Patients presenting to the OPD and who gave their consent to participate in the study were selected (inclusion criteria) while critically ill patients were excluded from the study.

The systematic sampling technique was carried out by simple random sampling. The first patient visiting the registration counter was taken as starting point and thereafter next patient randomly selected who came for registration to the OPD after the interval of 2 to 3 minutes, was enrolled in the study if he give consent till 100 patients was selected in each day. This data was collect for 5 day (Monday to Friday) . The questioner was collected when the patient's complete consultation was done. Out of total 500 patient selected for study 50 patient left hospital without consultation and hence not included in further analysis, so the sample size became 450. The statistical data was obtained from medical record section of hospital regarding total number of OPD registration and their demographic characteristics.

Questionnaire for OPD Patients :-

- 1) Did it is the 1st visit or revisit for OPD
- 2) Time of arrival in OPD
- 3) Time taken from arrival to OPD registration
- 4) How do you feel is the reception staff?
- 5) How much time it take from registration to first consultation?
- 6) At what time you were asked to report at the counter and when did you reach the OPD reception?
- 7) Did any staff brief you regarding the workflow in OPD
- 8) How long you have been waiting in OPD?
- 9) Did any information regarding waiting time in OPD was given to you, at the time of appointment?
- 10) How much time it took for you to interact with doctor after your arrival?
- 11) What is your perception on waiting time in the hospital?
- 12) What is your perception on waiting time for getting investigation done.
- 13) How much time it take from arrival to final consultation.
- 14) What would you suggest to reduce waiting time in OPD

- 15) Any other suggestions for improvement Outpatient services.

Research Methodology

The data generated were entered and analyzed using statistical package for social sciences version 17.0 (Chicago, IL, USA) and Microsoft Excel 2007. Quantitative and qualitative statistical variables were cross tabulated; Chi-square test was used The level of statistical significance was set at 95% confidence interval.

Observations and Results

The table no 1 shows the number of patients arriving in OPD of various departments on different weekday. It was observed that on Monday and Tuesday more patient visit the outpatient department as compare to weekend like Saturday. On an average all department have large number OPD patients. The Table 2 shows the demographic data of patients, out of total 450 patient interview 56.88% are male and 43.11% female. Nearly 72.44 % patients were above 40 yrs of age and 44.44% was more the 60 yrs age. From table No 3, it was observe that nearly 60.88% of patients coming in outpatient department are coming from out of the city from nearby location. Some patients come from adjacent state and travelled more than 500 km for treatment at outpatient department. Table No 4 shows that more than 58.66% of patients are revisiting the hospital. It shows that patients had faith in services provided in outpatient department. From table no, 5 we observe that 79.64 % of patients spend more than 3 hours in outpatient department from entry into hospital to final consultation and maximum time spend for registration and waiting for consultation. Whereas actual consultation time was negligible compare to total waiting time. According to table no 6 maximum patients(81.55% feel need for improvement in outpatient service.. When it was asked on which part of service must be improve the it was found that the waiting time in outpatient department was most distressing(73.33%) and its reduction was to be done on priority.

Table no 1: Average numbers of patients visiting OPD of various departments on weekday

SN	Department	Mon	Tue	Wed	Thurs	Fri	Satur
1	Neurosurgery	288	209	188	155	165	150
2	Neurology	256	235	176	155	145	169
3	Cardiology	180	204	179	207	188	176
4	CVTS	235	205	197	206	199	165
5	Nephrology	145	124	165	150	160	140
6	Urology	256	254	198	168	188	195
7	Gastro	205	187	167	210	166	189
	Total	1565	1418	1270	1251	1211	1184

Table 2: Demographic data of Patients

Age	Male (%)	Female (%)	Total
below 20 Yrs	27(4.5%)	15(3.33%)	42(9.33%)
21 to 40 yrs	46(10.22%)	36(8.00%)	82(18.22%)
40 to 60 yrs	81(18.00%)	45(10.00%)	126(28.00%)
above 60 yrs	102(22.66%)	98(21.77%)	200(44.44%)
Total	256(56.88%)	194(43.11%)	450(100.00%)

Table No 3:- Source of Patients

Location of Patients	Number of Patients
LOCAL	176(39.11%)
OUT STATION	274(60.88%)

Table No 4: -Number of patients visiting 1st time

Type of patients	Number of patients
New Registration	186(41.33%)
Old registration	264(58.66%)
Total	450(100.00%)

Table 5: Waiting times for various procedure in Outpatient department

component of the OPD Visit	< 1hrs	1 - 2hrs	2-3 hrs	> 3hrs
Time from Arrival to registration	176(39.64%)	88(18.02%)	20(4.5%)	16(3.62%)
Time to consultation	196(44.14%)	170(38.29%)	76(17.12%)	18(4.07%)
Time for investigation/Pharmacy	82(18.22%)	180(40.99%)	220(48.88%)	64(14.22%)
Total Duration time to Departure	0(0.00%)	12(2.70%)	134(30.18%)	352(79.64%)
Total	450(100%)	450(100%)	450(100%)	450(100%)

Table No: - 6 Patients response to service of Outpatient Department

Response	No of patients
Good	14(3.11%)
Satisfactory	32(7.11%)
Average	37(8.22%)
Need Improvement	367(81.55%)
Total	450(100.00%)

Table No 7 Thing to improve Outpatient Department services

Topic	No of Responder
In Clinical Managements	0(0.00%)
Increase registration counter	57(12.66%)
Increase consulting chamber	63(14.00%)
reducing waiting time in OPD	330(73.33%)
Total	450(100.00%)

Discussion

This study was undertaken with main objectives to determine the flow of patient and average time spent in the OPD, to identify the factors those are responsible for high waiting time and to recommend appropriate suggestions to optimize the waiting in OPD.

The study is conducted in a 350 bedded Superspeciality hospital in central India. This esteemed institute is well known for its multitude of services. The hospital is equipped withal modern technologies and rendering excellent services at an affordable cost resulting in large number of patient coming to outpatient department not only from city but from distance of nearly 500 km. Analysis of data was done through tables and graphs showing the number of respondents and their respective percentage and percentage bar diagrams and pie diagram were used for the interpretation of the results.

In this descriptive, cross-sectional study, study sample taken from the patients visiting outpatient department of Multispecialty hospital. Structured questionnaire and waiting time assessment card were used to elicit information on socio-demographic characteristics of patients, time spent before registration, time spent in the waiting area, and time spent with a doctor, Time spend for investigation and time required for final consultation, total duration from hospital entry to exit of hospital is noted. Trained health personnel assisted respondents who could not read or write in completing the questionnaire.

The questionnaire was given at entry of OPD of the hospital. Patients presenting to the OPD and who gave their consent to participate in the study were selected (inclusion criteria) while critically ill patients were excluded from the study. Approval to carry out the study was also obtained from the ethical committee of the teaching hospital.

The systematic sampling technique was carried out by simple random sampling. The first patients visiting the registration counter was the starting point and there thereafter, one patient randomly

selected that came for registration to the OPD at the interval of 2 to 3 minutes, was enrolled in the study if he give consent was enroll till 100 patients was selected in each day. This data was collect for 5 day. Out of total 500 patients selected for study 50 patient left hospital without consultation and hence not included in further analysis, so the sample size became 450. The statistical data was obtained from medical record section of hospital regarding total number of OPD registration and their demographic characteristics. The data generated were entered and analyzed using SPSS version 17.0 and Microsoft Excel 2007. Quantitative and qualitative statistical variables were cross tabulated; Chi-square test was used to compare proportions, whereas the Student *t*-test was used to compare means. The level of statistical significance was set at 95% confidence interval.

The table number 1 shows that, all department have large number of OPD patients. It can be observe from the table that 1200 to 1600 patients visit the seven department of hospital. On average 200 to 250 patient visits daily to each department. To systematically manage such large patients population hospital must equipped with modern queue management system. The table number 2 show 72.44 % patients were above 40 yrs of age and 44.44% were more the 60 yrs age. As older patients visiting the outpatient department they need the treatment on the priority. Table number 3 shows that nearly 60.88% of patients coming in outpatient department are coming from out of the city limit from nearby location. Some patients come from adjacent state and travelled more than 500 km for treatment at outpatient department. The patient coming from distant location are expect that all procedure like consultation , investigation, pharmacy and appointment for admission if needed should be completed in one visit only otherwise they may not have place stay in city and may not afford it and force to stay in hospital corridor in night creating security concern for hospital administration. These patients hardship can be reduce by effective time

management and reducing the waiting time. Table number 4 shows that than more than 58.66% of patients are revisiting the hospital. It shows that patients had faith in services provided by outpatient department. As is evident from the table no 5 , 79.64% of the patients had to wait for more than 3 hours for a various procedure in OPD and 30.18% of patients waiting anywhere between 2 hours to three hours. No of patients visiting the outpatient could have their consultation within one hour. This clearly indicates that majority of patients had a long waiting time. The response from patients questioner reflects their expectation to see doctor within 60 minutes of Registration.

In a study conducted by Irshad Rahim⁽¹⁷⁾ in the hospitals of Dhaka Bangladesh in the year 2007, total waiting time for each outpatient from the registration process to the entry of the examination room was estimated to be 66 minutes. He stated at the end that this duration of time is very high and the managers of the hospital should undertake appropriate measures to reduce it.

It was found that routine lab test and ECG/CT / MRI/USG/2DEcho results are critical information for a medical consultation. Patients were waiting for either the lab test or both lab test and other investigation. The table number 6 clearly indicate that maximum patients (81.55%) feel need for improvement in outpatient service. When it was asked on which part of service must be improve the it was found that the waiting time in outpatient department was most distressing(73.33%) and its reduction was to be done on priority.

Prof. Dinesh T.A⁽¹⁸⁾ et al studied the method of reducing waiting time in outpatient services of large university teaching hospital using a six sigma approach. This papar presents the results of a project of improving the quality of services provided in an outpatient department of an university hospital in India. The project was conducted on the basis of the six sigma methodology and aimed to reduce waiting times in outpatient cardiology office. Significant reduction in waiting time was achieved in the outpatient services of the Cardiology department

by using the six sigma approach. In addition to the overall reduction in waiting time for cardiac medical consultation significant reduction in waiting time for getting the lab results was also achieved. As an off shoot of the study nine registration counters were started, registration forms were modified, additional staff were appointed to handle the telephones in the Cardiology OPD and they were also taught basic telephone etiquette, dedicated biochemistry analyzer was provided for the cardiology department and an alert system was put in place for patients waiting for more than one hour.

Rafat mohebbifar, Edris hasanpoor et⁽¹⁹⁾ al studied, outpatient waiting time in health services and teaching hospitals in Iran by applying same models, they recommended that for reducing the waiting time hospital must use advance facility like electronic appointment systems via internet, six sigma models and queuing theory.

Form the above finding and revive of liturature we can definitely conclude that due to heavy patients inflow in our outpatient department we need to analyse and adopt variouse que management methods. Whether it's a time used for registration of patient, routine doctor's appointment, emergency room treatment, laboratory/diagnostic test, procedures, receiving the results of various tests, waiting happens to just about everyone seeking medical care. It's often one of the most frustrating parts about healthcare delivery system. Waiting times for elective care have been considered a serious problem in many health care systems since it acts as a barriers to efficient patient flows. OPDs is considered as the window to hospital services and a patient's impression of the hospital begins at the OPD. This impression often influences the patient's sensitivity to the hospital and therefore it is essential to ensure that OPD services provide an excellent experience for customers. For improvement in the in services of outpatient department we can follow six sigma approaches which consist of following 5 step approaches.

From above discussion, reduction in the waiting time in outpatient department is to be done priority basis have following recommendations:-

- 1) Introduce the queue management system in outpatient department in form of Token system and computerize patient guiding system.
- 2) Reorganization of the outpatient department allotting different days of OPD for different department so that only two to three department have outpatient clinical at any working day. This will result in allotting more consultation space for department.
- 3) Opening more registration counter and consultation chamber in outpatient department.
- 4) Making provision to accommodate the emergency and critical patient on priority, but at same time it does not affect routine patients.
- 5) Introduction of hospital information system and integration of investigation report with consultation computer system.
- 6) Regular review and analysis of data.

Conclusion

From the finding of above study it was clearly indicate that maximum patients (81.55%) feel need for improvement in outpatient service and the waiting time in outpatient department was most distressing (73.33%) and its reduction was to be done on priority to improve .

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