

A Recommendation on Reducing Waiting Time in The Out - Patient Department at Accord Hospital Mosh

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Abstract: Background: This article addresses the issue of longer patient waiting time in the outpatient department (OPD) of a super specialty hospital. Due to longer waiting times at OPD, patients had to suffer and their treatment was getting delayed. This problem was solved with the Lean Six Sigma (LSS) method. The entire process, from patient registration to drug delivery, is included in the project. In the process, steps that do not create added value are determined and implemented. This process improvement study looked at shortening the patient waiting time between registration and outpatient department at Accord hospital Moshi. The mean waiting time was calculated in OPD for various departments from the survey collected. The patients were dissatisfied with only one bus provided which can be improved by increasing the number of vans. The registration department has the mentioned giving priority to the Appointment patients and hence the Walk - in patients have to wait case registration hence online appointments can be implemented and the number of staffs can be increased by providing proper training about the administration. The patients were satisfied in diagnosis and pharmacy departments with the services provided to them. The delay in billing department is because time taken to get the lab reports which can be reduced by increasing the number of staffs in the laboratory and radiology department. Overall, 62% of the patients were satisfied with the services provided by the hospital. Patients attending each hospital are responsible for spreading the good image of the hospital and therefore satisfaction of patients attending the hospital is equally important for hospital management. Various studies about outpatient service have elicited problems like overcrowding, delay in consultation, proper behavior of the staff etc. The study reveals the average spend by the patients and also expresses their view towards the hospital and hospital's services provided by the hospital and the total consumed on each activity. In this study, it was found patients constitute of all age groups and genders among which most of them were females. Study depicts that average no. of patients coming to OPD each day as walk - in is more in comparison to the appointment patients. Administrative staffs are quite concerned towards the patient's expectation. They serve the suggestion box for patients and make sure to respond to the suggestion satisfactorily. Queuing method is followed for reducing waiting time in OPD. Study depicts that OPD always starts on time and the doctors mostly come on time. Patients also come on scheduled appointment time sometimes getting delayed. Since Reception center being the primary bottleneck of the system, by increasing another server here, the system may be made to work in steady state. The possibility of clubbing function of Reception center with the registration may also be explored since this could cut down one additional node and a total process time of 10 minutes approximately for each patient. However, it was evidently proved through the simulations that having a single refraction chamber with 8 or even 6 technicians, the hospital could reduce waiting time up to 25 percent, as well as better utilization of resources. Advanced simulations using simulators would help the administrators to visually see what happens when we change the resources in the system. In healthcare Queue modeling can be applied in the areas wherever queue is involved such as rationing, scheduling, Bed allocation, laboratory design, and so on. Aim: Patient waiting time for healthcare services is identified by the World Health Organization (WHO) as one of the key measurements of a responsive health system. Patient waiting time is the amount of time for patients seeking care at healthcare units before being attended for consultation and treatment. It is globally agreed that a well - designed healthcare service management system should not have patients to wait long time for appointment and consultation. Lengthy waiting time has long been considered frustrating to patients and thus appears to be a consistent and significant potential cause of patient dissatisfaction. A strong inverse relationship between patient satisfaction and waiting time has been demonstrated by many studies [5–10]. As healthcare solutions become more personalized and consumer driven, the need to provide overall patient satisfaction is becoming more important. The project is to quantify the waiting time and identify the factors associated with waiting time for services offered at the general outpatient department in order to find with evidenced based solutions of solving the problem of long waiting time. Subjects and methods: Data Collection Methods: The data will be collected using both by primary data collection methods as well as secondary sources. Primary Data: Most of the information will be gathered through primary sources. The methods that will be used to collect primary data are: Questionnaire, Interview. Secondary Data: Secondary data will be collected through: Text Books, Magazines, Journals, Websites. Method Used to Present Data: Data Analysis & Interpretation – Classification & tabulation transforms the raw data collected through questionnaire in to useful information by organizing and compiling the bits of data contained in each questionnaire i. e., observation and responses are converted in to understandable and orderly statistics are used to organize and analyze the data: Simple tabulation of data using tally marks. Calculating the percentage of the responses. Formula used = (name of responses / total responses) * 100. Graphical analysis: By means of pie charts bar graphs etc. Number of Respondents: Total samples of 110 respondents will contact who respond to the questionnaires. Sampling Technique: The technique will be used for conducting the study will convenience sampling technique as sample of respondents will be chosen according to convenience. Statistical Tools: The tools used in this study will MS - EXCEL, MS - WORD. MS - EXCEL use to prepare pie charts and graphs. MS - WORD was used to prepare or write the whole project research. A cross - sectional, observational study conducted at Accord Hospital Moshi from 24th April 2023 to 24th May 2023 for the period of 1 month. A total 110 patients enrolled for study purpose include those patients who seeking the treatment from various Outdoor Patients Departments running in this hospital. 15 Patients randomly selected from each of nine OPDs with following inclusion and exclusion criteria. Inclusion criteria: All age and both sex of patients attending various out patients' departments (OPDs). For pediatric patient response was noted from attendant. Exclusion criteria: Those patients seeking emergency Medical Services, those who refuse to participate, Medical Students and Hospital Staff. Population and Sample Design: We have taken a full month data from the system that consists of a mix of all hospital cases for the month. In this study patient's evaluation was started while presenting at hospital dispensary. Each patient was randomly selected with inclusion and exclusion criteria. The purpose of the study was explained to each participant before interviewing. Clinical data from each patient will be recorded to identify the type OPDs. Data was collected in perform, pretested Performa containing patient's demographic details like patient's name, age, sex, address. Other part of the Performa contained which OPD they visited, time spent in searching the OPD, time spent for investigation, waiting time at OPD, time spent at dispensary and inquired whether he/she is satisfied with hospital staff and health care services available in this institute. 15 patients randomly selected from each of nine OPDs. Total 110 patients were

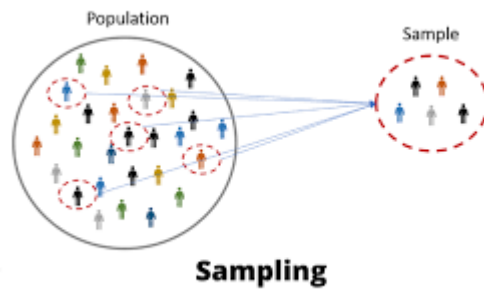
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interviewed. Data was entered and analyzed with the help of MS Excel - 2008 and an appropriate statistical test was applied when needed. The research design of this project is Descriptive which is a type of research that focuses on providing an accurate description of the variables in the problem model. The primary data are those which are collected as fresh and for the first time and thus happen to be original in character. For this study data is collected through observation method. The secondary data are those which are collected by and readily available from other sources like journals, reports, website, newspaper, magazine, books, etc. **Results:** The study entitled - "A RECOMMENDATION ON REDUCING WAITING TIME IN THE OUT - PATIENT DEPARTMENT AT ACCORD HOSPITAL MOSHI" was under taken with main objectives to demine 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 150 bedded multi - specialty hospital at Moshi. 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. Analysis of data was done through tables and graphs showing the number of respondents and their respective percentage and percentage bar diagrams were used for the interpretation of the results. The result shows that average no. of patients coming to OPD each day as walk in (100 - 150) is more in comparisons to the appointment patients (20 - 30) approx. The study shows that the waiting time spent by the patients in reception for registration is much less in case of maximum no. of patients compared to lesser no. of patients whose waiting time exceeds more than 30 min. This represents the efficiency of the registration process in the OPD. Study depicts that the average waiting time spent in OPD for consultation is around 30 min and time taken during consultation is 20 - 30min which states that OPD of the hospital functions satisfactorily. It is found that the time consumed during investigation viz, radiology is more maximum no. of patients is dissatisfied with the functions of the Radiology department. Patients had to wait for long to collect the reports. Study revealed that billing and cash payment consumes 25 - 30 min which itself serves as dissatisfaction for the patients. Collection of reports consumes least time i. e., 10 - 15min. The study shows that maximum no. of patients are satisfied with the punctuality of the staffs in attending to their needs. Administrative staffs are quite concerned towards the patients' expectation. They serve the suggestion box for patients and make sure to respond to the suggestion satisfactorily. Queuing method is followed for reducing waiting time in OPD. Study depicts that OPD always starts on time and the doctors mostly comes on time Patients also come on scheduled appointment time sometime getting delayed. Preference for consultation is always given to the appointment patients and records of the arrival, departure and waiting time of patients is maintained. Identify the result on the basis of observational study and counting the real time at OPD and data analysis done by total no. of minutes divided by total no. of patients observation than calculate the OPD waiting time and consultation time. OPD Waiting Time: Total no. of Minutes: 1103 Minutes. Total no. of patients: 100. Consultation Time: Total no. of Minutes: 1189 Minutes. Total no. of patients: 100. **Calculation:** Average OPD Waiting time: $1103/100= 11.03$ minutes. Average Consultation time: $1189/100 = 11.89$ minutes. **Suggestion and Recommendations:** Patient satisfaction assessment should be conducted regularly. In OPDs, complaint and suggestion box should be kept, so that patients can freely put their complaints and suggestions. Number of counters and staffs in pharmacy must be increased to avoid long waiting time for the patients. Number of staffs should be increased in the depts., with large no. of patients. Number of registration counters should be increased because during the peak hours it may result in the negative image of the hospital in the mind of the patients. The waiting area should be more spacious. Hospital should give separate outpatient feedback form. Regarding the design of the OPD, the registration counter and enquiry desk should be open and near to the entrance of OPD and emergency dep., all the diagnostic dept. should be near to the consultancy rooms. Divide the whole OPD into two sections, one for the Surgical OPDs and another for the other OPDs along with separate nurse stations. It helps patients to find their way more easily without any confusion. Hospital authorities should appoint more qualified and senior staff in OPD. Parking of vehicles should be free of cost for the patients and their attenders. A help desk facility should be provided nearby the registration counter for the patient's convenience in finding OPDs. Sign board directing various OPDs and other departments should be in local language, located at properly visible sites or create some color - coding method for easy access of OPDs. Allocating junior doctors in OPDs with senior Doctors're - planned the doctor's schedule for the day. Instead of visiting the ward first in the morning, doctor visits the ward once the crowd in the OPD is reduced. Allocating junior doctors in OPDs with senior doctors where there is a huge crowd. Allocating junior doctors in OPDs with senior doctors where the doctors require more time for consulting. **Conclusions:** This process improvement study looked at shortening the patient waiting time between registration and outpatient department at Accord hospital Moshi. The mean waiting time was calculated in OPD for various departments from the survey collected. The patients were dissatisfied with only one bus provided which can be improved by increasing the number of vans. The registration department has the mentioned giving priority to the Appointment patients and hence the Walk - in patients have to wait case registration hence online appointments can be implemented and the number of staffs can be increased by providing proper training about the administration. The patients were satisfied in diagnosis and pharmacy departments with the services provided to them. The delay in billing department is because time taken to get the lab reports which can be reduced by increasing the number of staffs in the laboratory and radiology department. Overall, 62% of the patients were satisfied with the services provided by the hospital. Patients attending each hospital are responsible for spreading the good image of the hospital and therefore satisfaction of patients attending the hospital is equally important for hospital management. Various studies about outpatient service have elicited problems like overcrowding, delay in consultation, proper behavior of the staff etc. The study reveals the average spend by the patients and also expresses their view towards the hospital and hospital's services provided by the hospital and the total consumed on each activity. 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Keywords: General outpatient department, Patients, Waiting time.



1. Introduction

An outpatient is another hugely important area for the majority of patient pathways. It is usually the step in the patient's pathway where the majority of different pathways intersect, diagnostic tests are reviewed and the decision to treat (or request additional testing) is made. The outpatient department of a hospital provides diagnosis and care for patients that do not need to stay overnight. The departments are also sometimes called outpatient clinics, but are distinct from clinics independent of hospitals, almost all of which are designed mostly or exclusively for outpatient care and may also be called outpatient clinics. Accord hospital has been experiencing high patient traffic especially during peak hours. Patients are coming to the hospital through appointments and walk - ins, where the majority of the foot traffic is through walk - ins. This is increasing the waiting time for patients between the registration and the Dr. consultation where so many patients are waiting in the lobby of the hospital until they are called to see the Physician is considered as the window to hospital services and a patient 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 consumer. It is also well established that 8 - 10% of OPD patients need hospitalization. The waiting time in various departments is an important function which has to be considered for the fulfillment of the patients. Usually, it is observed that patients at the hospital OPD's have to wait for an excessively long time before they can get medical cure or advice by specialized healthcare personnel. Long waiting time in hospital causes dissatisfaction among patients. In a relatively managed healthcare environment, long waiting time of patients in an OPD badly affects the hospital ability to attract new amplified business. It is difficult to sell services if individuals are dissatisfied with the delayed process and increased waiting time. There are many indicators of quality assurance in hospitals. In outpatient departments one of the significant indicators of excellence assurance for patients is "wait time. " Hence it is unfavorable for a hospital on the whole to have long OPD waiting time. Waiting time refers to the time a patient waits in the clinic before being seen by one of the clinic medical staff. Patient clinic waiting time is an important indicator of quality of services offered by hospitals. 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. Keeping patients waiting unnecessarily can be a cause of stress for both patient and doctor.

Waiting time is a tangible aspect of practice that patients will use to judge health personnel, even more than their knowledge and skill. 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. It is often one of the most frustrating parts about health care delivery system. So, it is an important to improve the waiting time of the out - door patients. Measurement of patient satisfaction has become common place in many healthcare settings due to its impact on quality of care. It has been known for some time that satisfied patients are more compliant with treatment, remaining with a physician, and maintain appointments. "Patient's satisfaction is a measure of the extent to which a patient is content with the health care which they received from their health care provide". Patient satisfaction is one of the important goals of any health system, but it is difficult to measure the satisfaction and gauge responsiveness of health systems as not only the clinical but also the non - clinical outcomes of care do influence the customer satisfaction. Patient's perceptions and satisfaction about health care systems seem to have been largely ignored by health care managers in developing countries. Mismatch between patient expectation and the service received is related to decreased satisfaction. Therefore, assessing patient perspectives gives them a voice, which can make public health services more responsive to people's needs and expectations. In the recent past, studies on patient satisfaction gained popularity and usefulness as it provides the chance to health care providers and managers to improve the services in the public health facilities. Patients' feedback is necessary to identify problems that need to be resolved in improving the information systematically, to improve care delivery and services, this type of feedback triggers a real interest that can lead to a change in their culture and in their perception of patients.

A well - managed, neat, and clean hospital with necessary information boards and proper directions generally provide good image. Successful and efficient management of OPD can also lighten the burden on the patient wards.⁶ As patient's satisfaction is an important component of the health care industry in this competitive modern era. The functions of the O. P. D. services are preventive, diagnostic, curative, and rehabilitative. The out - patient department is a very important wing of the hospital, which is visited by a large section of the community. The outpatient department will usually be on the ground floor of the hospital with car - parking facilities nearby. Wheelchairs and stretchers are available for non - ambulatory patients. Patients will register at a reception desk and there is seating for them while they wait for their appointments. Each doctor will have a consulting room and

there may be smaller waiting areas near these. Pediatric clinics are often held in areas separated from the adult clinics. Close at hand will be X - ray facilities, laboratories, the medical record office and a pharmacy. In the main waiting area there are a range of facilities for the patients and their families including toilets, public telephones, coffee shop or snack bar, water dispenser, gift shop, florist and quiet room So present study was conducted to know the difficulties face by patients while searching the various OPDs/departments, waiting time at OPDs, various investigation departments, patient's satisfaction and to get feedback about service provided at Accord hospital Moshi.

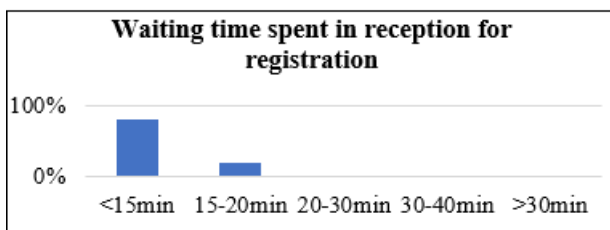
2. Data analysis and interpretation:

Keeping this point in view and to fulfill the evaluation variants of which may form the basis for objectives of the studies an attempt has been made to segment the various respondents on the basis of some aspects collected from them through questionnaire. There are depicted through tables and graphs. The copy of questionnaire administered is enclosed and the sample size was 10 respondents and 100 OPD patient data collected from the hospital records are enclosed at the end of this project. All the calculations and numerical interpretations are for 100%

Q.1) Waiting time spent in reception for registration.

Table 1.1: Distribution of Patient view on Waiting Time spent in reception for registration

Criteria	Frequency	Percentage
<15min	08	80%
15 - 20min	02	20%
20 - 30min	00	00%
30 - 40min	00	00%
>40min	00	00%

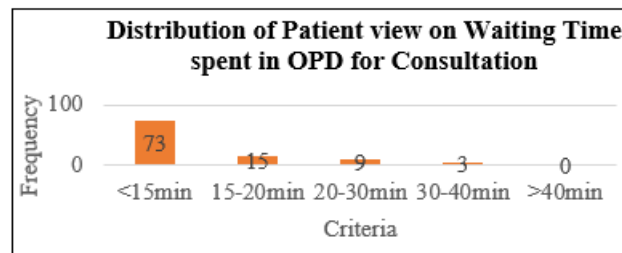


Graph 1.1: Distribution of Patient view on Waiting Time spent in reception for registration It is evident from the above table that the maximum time spent by the patients in the reception for registration. Out of 10 patients, 80% patients had to wait for less than 15 min, 20% waited for 15 - 20 min, at the reception for registration.

Q.2) Waiting time for consultation.

Table 1.2: Distribution of Patient view on Waiting Time spent in OPD for Consultation

Criteria	Frequency	Percentage
<15min	80	73
15 - 20min	17	15
20 - 30min	10	9
30 - 40min	3	3
>40min	0	00



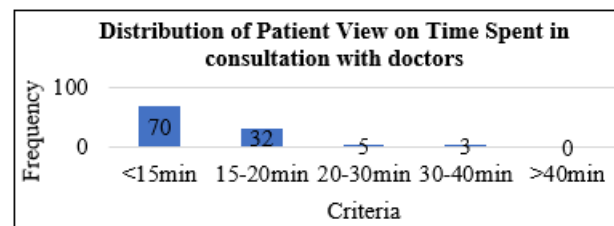
Graph 1.2: Distribution of Patient view on Waiting Time spent OPD for consultation.

It is evident from the above table that the maximum waiting time spent by the patients in the OPD for consultation with doctors. It shows that out of 110 patients, highest is 73% patients had to wait for <15mins and lowest % patient waited for less than 30 - 40 min. While 15% patient waited for 15 - 20 min.9% patient waited for 20 - 30 min and no patient waited for more than 40 min in the OPD for consultation.

Q3) Time spent for consultation.

Table 1.3: Distribution of Patient View on Time Spent in consultation with doctors

Criteria	Frequency	Percentage
<15min	70	63
15 - 20min	32	29
20 - 30min	5	5
30 - 40min	3	3
>40min	00	00



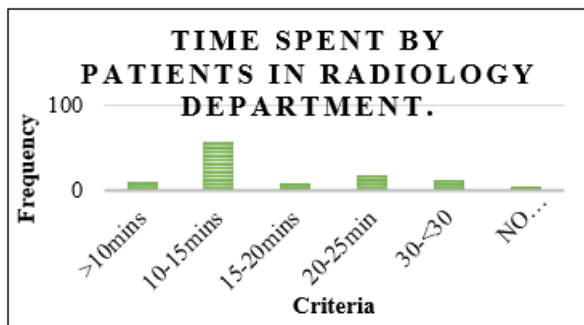
Graph 1.3: Distribution of Patient View on Time Spent in consultation with doctors

As per shown in the above graph the maximum time spent by the patient in the OPD for consultation with doctors. It show that out of 110 patients, according to 63% patients' doctors take less than 15 min for consultation, 29% patients says 15 - 20mins, 5% patients sys it takes 20 - 30 min and from the rest 3% patients, doctors take 30 - 40 mins for consultation, and no patient mentioned about doctor taking more than 40 mins for the consultation.

Q4) Time spent for investigation

Table 1.4: Distribution of Patient view on time spent in Investigation. (Radiology)

Criteria	Frequency	Percentage
>10mins	10	9%
10 - 15mins	57	52%
15 - 20mins	8	7%
20 - 25min	17	15%
30 - <30	13	12%
NO Investigation done	5	5%



Graph 1.4: Distribution of Patient view on time spent in Investigation.1.4.

A: Time spent by patients in Radiology department.

Criteria	Frequency	Percentage
10min	5	50%
10 - 15min	2	20%
15 - 20min	3	30%
20 - 25min	0	00%

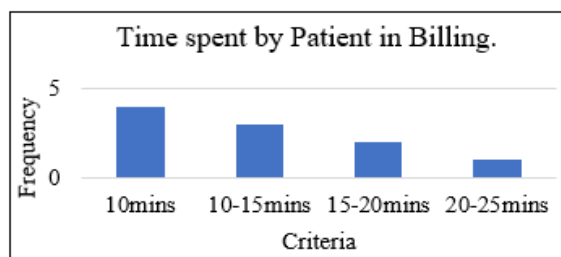
As per shown in the above graphs the average time spent by the patients in investigation (Radiology,).

For investigation in Radiology out of 110 patients, according to 52% patients; time taken is 10 - 15min. According to 9% patients, less than 10 min of time is taken.7% patients had to wait for 15 - 20 min while for the other 12% patients it took more than 30 min and for 15% patients; it took 20 - 25 min. while 5% patients did not go through radiologic investigation.

Q.5) How much time did you spend for completion of each of the following activity?

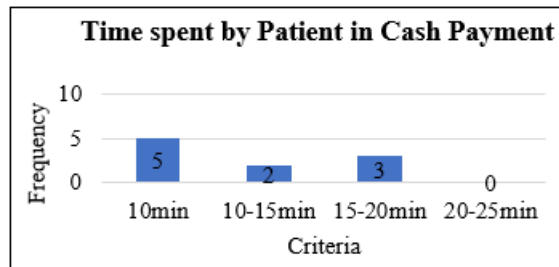
Table 1.5: Distribution of Patient View on Time Spent in Billing, Cash Payment and collection of reports.

Criteria	Frequency	Percentage
10min	4	40%
10 - 15min	3	30%
15 - 20min	2	20%
20 - 25min	1	10%



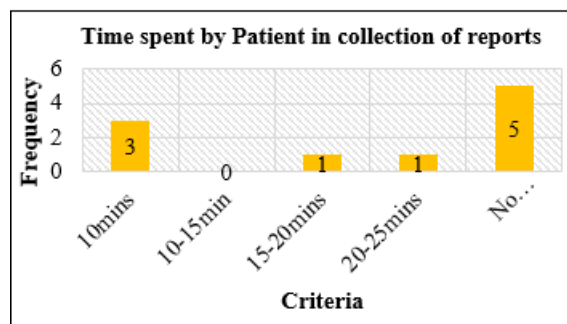
Graph 1.5: Distribution of Patient View on Time Spent in Billing, Cash Payment and collection of reports.1.5. A: Time spent by Patient in Billing

Q.6) Time spent by Patient in Cash Payment.



Q7) Time spent by patient in collection of reports:

Criteria	Frequency	Percentage
10min	3	30%
10 - 15min	0	10%
15 - 20min	1	10%
20 - 25min	1	10%
NO Investigation done	5	50%



As per shown in the above graph the average time spent by patient in billing, cash payment and collection of reports. For Billing, out of 10 patients, the highest 40% patients, waited for 10 min and least 10% waited for 20 - 25minmin. The second highest is 30% patients, which had to wait for 10 - 25min, 20% patients waited for 15 - 20 min. For Cash Payment, out of 10 patients, the highest 29% patients, waited for 20 - 25 min and least 9% waited for 10min. The second highest is 27% patients, which had to wait for 15 - 20min, 22% patients waited for 10 - 15min and 13% patients waited for more than 30 min. For Collection of reports, out of 10 patients, the highest 50% patients, did not go for radiological investigation, and least 0% waited for 10 - 15min. The second highest is 30% patients, which had to wait for 10min, 10% patients waited for 15 - 20min and 13% patients waited for more than 20 - 25 min.

Q7) Availability of suggestion / feedback box.

Administrator of Accord hospital Moshi Mr. Vijaykumar responded in the questionnaire that the responses to the suggestions/feedback of patients and visitors are satisfactory.

Q8) Punctuality of staffs in attending to Patients' needs.

Administrator of Accord hospital Moshi Mr. Vijaykumar responded in the questionnaire that the punctuality of staffs in attending to Patients' needs is average.

Q9) Coordination among the various departments of the OPD

Administrator of Accord hospital Moshi Mr. Vijaykumar responded in the questionnaire that the co - ordination amongst the various departments of the OPD needs some improvement.

Q10) Do you provide any training for the front office staff in the OPD.

Administrator of Accord hospital Moshi Mr. Vijaykumar responded in the questionnaire that a training is provided to the front office staff in the OPD.

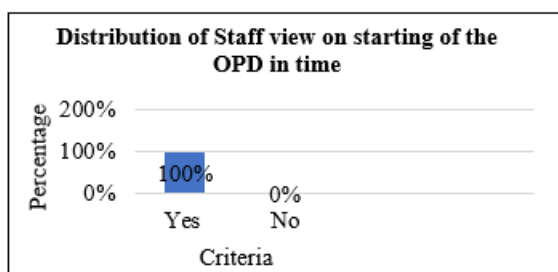
Q11) Are the following techniques/methods followed for reducing the waiting time in OPD?

Administrator of Accord hospital Moshi Mr. Vijaykumar responded in the questionnaire that the technique followed by the hospital to reduce the waiting time in OPD is the Appointment and scheduling system.

Q12) Does the OPD start on time?

Table 1.12: Distribution of Staff view on starting of the OPD in time.

Criteria	Frequency	Percentage
Yes	7	100%
No	0	00%



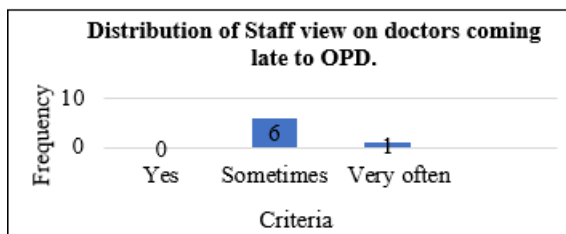
Graph 1.12: Distribution of Staff view on starting of the OPD in time.

Table 1.12 and graph 1.12 shows the distribution of Staff view on starting of the OPD in time. Out of 7 (100%) staff, all 7 (100%) of them responded that OPD starts on time.

Q13) Do the doctors come late?

Table 1.15: Distribution of Staff view on doctors coming late to OPD.

Criteria	Frequency	Percentage
Yes	0	00%
No	6	86%
Sometimes	1	14%



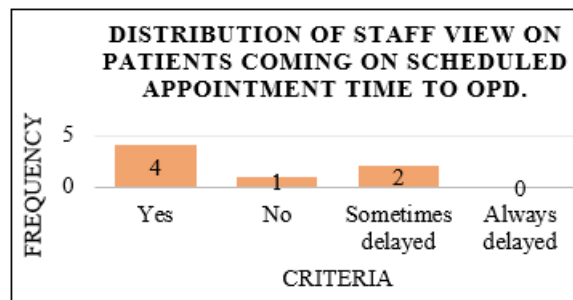
Graph 1.13: Distribution of Staff view on doctors coming late to OPD.

As per shown in the above graph the distribution of the staff views on doctors coming late to OPD. Out of 7 (100%) staff, 6 (86%) of them says that sometimes the doctors do come late, and 1 (14%) of staff responded that doctors come late very often.

Q16. Do the patients come on scheduled appointment time?

Table 1.16: Distribution of Staff view on Patients Coming on Scheduled appointment Time to OPD.

Criteria	Frequency	Percentage
Yes	4	57%
No	1	14%
Sometimes delayed	2	29%
Always delayed	0	00%



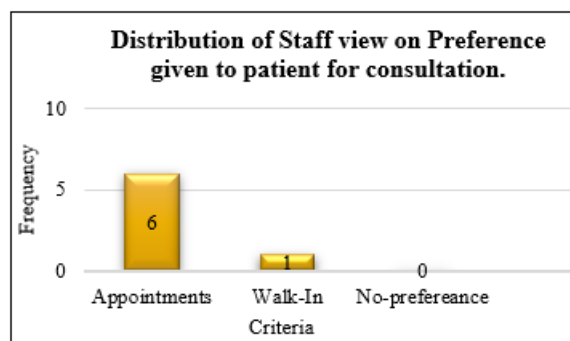
Graph 1.13: Distribution of Staff view on Patients Coming on Scheduled appointment Time to OPD.

Shown in the above graph and table the distribution of the staff views on patients coming on scheduled appointment time to OPD. Out of 7 (100%) staff, 4 (57%) of them says patients do come on scheduled time. 2 (29%) responded that sometimes the patients get delayed and the rest 1 (14%) says that patient do not come on scheduled appointment time.

Q14) Who is given the preferences for consultation/investigation?

Table 1.14: Distribution of Staff view on Preference given to patient for consultation.

Criteria	Frequency	Percentage
Appointments	6	86%
Walk - In	1	14%
No - preference	0	00%



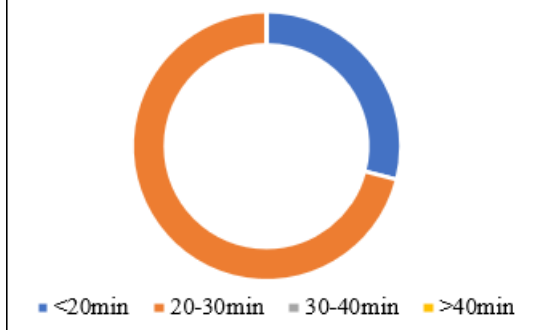
Graph 1.14: Distribution of Staff view on Preference given to patient for consultation.

As per shown in the above graph the Distribution of Staff view on Preference given to patient for consultation. Out of 7 (100%) staffs, 86% of them says that Appointments are given the preferences for consultation.

Q15) In case of heavy patient flow in any department, do you limit the no. of patients in each OPD?

Table 1.15: Average waiting time for walk - in patients.

Criteria	Frequency	Percentage
<20min	2	29%
20 - 30min	5	71%
30 - 40min	0	00
>40min	0	00

Average waiting time for walk-in patients.

As per shown in the above graph the distribution of staff views on average time for the walk - in patients. Out of 7 (100%) staffs, 71% of them says that average waiting time for the walk - in patients is 20 - 30 min, 29% says waiting time is less than 20 min, no staff mentioned waiting time more than 30 mins

Managerial implication:

By reducing the waiting time of patients in outpatient patient department. The patient satisfaction will be improved. The patient's inflow will be increased. The hospital revenue will be increased. The image of the hospital in the community will be improved. The Quality of healthcare services will be improved. Further the study can be extended with larger population and the above quality tools can be used to improve the various processes in different areas in the hospital to enhance patient satisfaction.

Acknowledgement

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3. Further Study Recommendations

This study was conducted within a very tight timeframe; which imposed a restriction of only studying the time between Registration and Patient out time after the consultation and investigation. Further studies could be done on the patient's waiting time between In - patient department and Pharmacy logs for similar type of facilities. In addition, a further study could be completed on the impact of such changes to the process on the profit of the facility or the customer Satisfaction of the patients. It was notices that patients sometime have to wait for the doctors to get the consultation done. This could cause patients to leave without consultation or getting the investigations done due to a long wait time. This is an issue that will not only impact customer satisfaction, but

also will have a negative effect on the financial bottom line of the hospital.

References

- [1] MA Bashith (2008) assessed that the patient satisfaction regarding the services provided in outpatient department in terms of clinical care, availability of services, waiting time, and cost. He further says patient satisfaction is an important parameter for assessing the quality of patient care services and there is a need to assess the health care systems regarding the patient satisfaction whenever possible. According to a report from the Fraser institution (Feb 2012), waiting time for certain elective procedures in Canada were the longest in 19 years. The institute's annual survey asked physicians in 10 provinces about the length of time patients wait to receive treatment once a GP has made a referral. Provincial and federal government's health - care spending increases and reforms have focused on reducing wait times.
- [2] Dr. Jawaher SK (2012), Outpatient department is a shop window of any hospital. The difficulty that some of the patient faced in the outpatient department was waiting time but still they are satisfied with the hospital if the overall services rendered to them is Good. So waiting time is one of the indicators that can directly or indirectly affect the satisfaction level of the patients but if all other services rendered to them are good then it has a very negligible effect on it.
- [3] When I searched for literature regarding the patient waiting time shortening and its relationship to the Patient Satisfaction, I was not able to find many publications about it. The reason may be that private healthcare Organizations information such as this research could be communicating private information about the facility. However, I was able to find the following articles and reports about this area.
- [4] In 2010, Press Ganey, in the survey keeping me waiting, identified the effect of waiting time on the customer satisfaction. This report shows that as the waiting time grows longer, the patient satisfaction drops. In this study the highest waiting time category at 10 minutes or more, which is significantly less than the 40 minutes we are experiencing at AL Sharq Hospital. However, the study also listed recommendations that help in the customer satisfaction rating while patients are waiting.
- [5] 3. Karen Barrow's article The Doctor Can See You Now. Really, Right Now. Listed the 20 minutes of wait time as the maximum time the patient will wait before they go and check with the reception/registration about the reason they are waiting time is long. It also identified the threshold of the maximum time the patient is willing to wait before they leave the clinic as a maximum of 40 minutes.
- [6] 4. Lindsey Dunn, Improving Hospital Operational Efficiency Must Include Patient Flow Improvements. This article listed recommendation on the steps to hospital operation improvement and it included that the patient flow is a main area that hospitals should be looking at for improvement in their operation
- [7] According to ZHU Zhecheng; HENG Bee (2002) this paper "Reducing Consultation Waiting Time And

Overtime In Outpatient Clinic: Challenges And Solutions”: is focused on the factors causing long patient waiting time/clinic overtime in Outpatient clinics and how to lessen them using discrete event simulation. A discrete Simulation model is constructed to demonstrate how to improve the clinic act by justifying the detected factors. Simulation and execution results show that significant development is achieved if the factors are well Vol - 3 Issue - 6 2017 IJARIE - ISSN (O) - 2395 - 4396 6859 www.ijarie.com 38 addressed an outpatient clinic is known as a private or public healthcare facility which is devoted to diagnosis and treatments of Outpatients.

- [8] According to C A Stone, J H Palmer, P J Saxby, and V S Devaraj (2000) this paper “The Impact of Engagement Processes on the First - appointment Attendance Rate at a Regional Outpatient Psychological Trauma Service”: States that Outpatient non - attendance is a ordinary source of incompetence in a health service, wasting time and resources and potentially lengthening waiting lists. This study, signifying how risk factor analysis can identify a group of patients who are unlikely to attend again after one missed appointment, may be a useful model for the reduction of outpatient non - attendance in other specialties.
- [9] According to Fenghueih Huarng, Mong Hou Lee, “Using Simulation in Out-Patient Queues: A Case Study, International Journal of Health Care Quality Assurance” (1996): this paper overwork and overcrowding in some periods was an important issue for the out - patient department of a local hospital in Chia - Yi in Taiwan. The hospital administrators wanted to administer the patient flow effectively. This describes a study which focused on the utilization of doctors and staff in the out - patient department, the time spent in the hospital by an outpatient, and the duration of the out - patient queue. This explains how a computer simulation model was developed to learn how changes in the appointment method, staffing policies and service units would influence the observed bottleneck. The study entitled - “A Recommendation On Reducing Waiting Time In The OutPatient Department In Taiba Hospital” was under taken with main objectives to demine the flow of patient and average time spent in the OPD, to identify the factors those are accountable for high waiting time and to recommend appropriate suggestions to optimize the waiting time in OPD.
- [10] According to Ravikant Patel, Hinaben R. Patel International Journal of Community Medicine and Public Health in Valsad, Gujarat, India, the paper “A study on waiting time and out - patient satisfaction at Gujarat medical education research society hospital” aims to study the waiting time at various Out Patient Department (OPDs) and various investigation; then to study the accessibility of various department of hospital and also to study the patient happiness on hospital procedure, conduct of hospital staff and treatment cost. The study about those factors concludes that many patients face the difficulties in finding the location of various departments.
- [11] According to Mohebbifar R, Hasanpoor E, Mohseni M, Sokhanvar M, Khosravizadeh O, Mousavi Isfahani H. This paper “Outpatient Waiting Time in Health Services and Teaching Hospitals: a Case Study in Iran” states that one of the most essential indexes of the health care quality is patient’s satisfaction and it takes place only when there is a procedure based on management. This study is the systematic analyzing of the outpatient waiting time. This descriptive cross sectional study conducted. Utilizing the models including the one before admission, electronic visit systems via internet, a process model, six sigma model, queuing theory model and FIFO model, are the components of the interference that reduces the outpatient waiting time.
- [12] According to V. Gijoa and Jiju Antony Published online 17 July 2013 in Wiley Online Library the paper “Patient Waiting Time In Outpatient Department Using Lean Six Sigma Methodology” addresses the issue of longer patient waiting time in the outpatient department (OPD) of a super specialty hospital attached to a manufacturing company in India. Due to longer waiting times at OPD, employees need to be away from the workplace for a longer period. This problem was addressed through the Lean Six Sigma (LSS) methodology.
- [13] According to Prof. Dinesh T. A, MHA, Ph. D. Prof. Dr. Sanjeev Singh, DCH, and M. Phil. Prem Nair, MBBS, MD Remya T R, MHA Amrita Institute of Medical Sciences and Research Centre (2013), Amrita Vishwa Vidyapeetham (Amrita University), Cochin, Kerala, this paper “Waiting Time In Outpatient Services Of Large University Teaching Hospital - A Six Sigma Approach, Management In Health”, presents the consequences 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.
- [14] According to Toussaint (2015), hospitals cannot improve without better management systems. In Toussaint’s perspective, management is a significant part of today’s cost and quality crisis in health care. This is the reason why suitable hospital needs and appropriate medical management must be present to deliver applicable healthcare facilities.
- [15] According to Agnes (2011) there must be a planned approached towards work. And thus, the activities within the hospital must be well planned and organized. In line with this, the researchers found out that the level of accuracy in handling hospital information must be done accordingly and accurately. Conclusively, the errors are not completely eliminated, but they are reduced. Hospital Management System is powerful, flexible, and easy to use and is designed and developed to deliver real conceivable benefits to hospitals. Prasanth and Sailaja (2014) stated that hospital management system is to computerize the front office management which deals with collection of patient information, diagnosis details, and even the billing details. The researchers have found out that the computerization of hospital management system has become a necessity and has become the new standard. By implementing this technology adoption, the researchers also found out that the need of easy access

to patient information and history are significantly increasing.