

A STUDY ON WAITING TIME IN VARIOUS HOSPITAL DEPARTMENTS AND RECOMMENDATIONS TO DECREASE THE WAITING TIME

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ABSTRACT

The multispecialty hospitals in India's are increasing their quality of service day by day to the patients in order to sustain and satisfy them. The waiting time in hospitals play a vital role in providing quality service in providing medical treatment or diagnosis. Hence this has become a major challenging factor in satisfying the patients. To decreasing the waiting time various procedures and methods are followed. This study is undertaken to study the overall waiting taken by the patients in various hospital departments in OPD. The aim is to measure the waiting time taken in various departments such as transportation, registration, diagnosis, pharmacy and billing in OPD then the recommendations was given to decrease the waiting time. Data was collected by research method through survey questionnaire and analyzed. From this study, the mean waiting time was calculated in OPD for various departments and it gives the result for overall patient satisfaction.

Keywords: OPD, Waiting Time, transportation, registration, diagnosis, pharmacy, billing.

INTRODUCTION:

The outpatient service is the basic and very important service provided by the hospital as it provides services to more number of patients at reasonable cost. 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.

It is generally accepted that when clinics are cancelled or reduced by the hospital, patients with clinical priorities retain priority access. A study of the clinic rules is necessary. This should be coupled with an examination by waiting time for critical and soon to be seen patients. The evaluation of clinic rules should ensure they replicate the main concern mix of the referrals. The greater part of outpatient services use a traditional rigid appointment system, where patients are given appointments on receipt of an appointment letter. This system has many drawbacks. Patients are appointed well in advance so any changes to the clinic schedule or frequency of clinics will affect the appointments of all the patients waiting. Owing to their dedication to provide quality service to patients the health care institution aims to decrease the waiting time in the various OPD and increase patient satisfaction by following various techniques and procedures.

Review of literature

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

addressed an outpatient clinic is known as a private or public healthcare facility which is devoted to diagnosis and treatments of Outpatients.

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.

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 Out-Patient 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.

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.

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.

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. 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.

OBJECTIVE:

This project is based on OPD to understand the causes for the delay in waiting time of patients in various departments and recommendations to reduce it.

- To determine the average time spent by the patients in the OPD.
- To study the causes of delays and suggest interventions.
- To assess the patients satisfaction with the OPD services provided.
- To reduce the waiting time of the patients in the OPD.

SCOPE AND LIMITATIONS OF THE STUDY:

- The primary activity of the hospitals is providing medical, diagnostic and treatment and also specialized accommodation services to the patients. The Secondary activities of the hospitals provide wide variety of outpatient services at patient satisfactory level where the peak time of OPD is calculated and reschedule OPD's work accordingly done in order to reduce peak workload of the healthcare staffs.
- The limitation of project for the period of one month.
- The administration and management activities reported here are based on the direct observation carried out during the internship period.

Methodology:

The study is exploratory in nature. It involved a survey of patients in the Out Patient department of a multi specialty hospital in Chennai. Data was collected by research method through survey questionnaire with fifty OPD patients for a period of one month. The collected data was analyzed using percentage analysis and mean analysis method in spss. A structured questionnaire of 30 multiple choice questions and demographic details were collected and analyzed.

DATA COLLECTION

a. Primary data

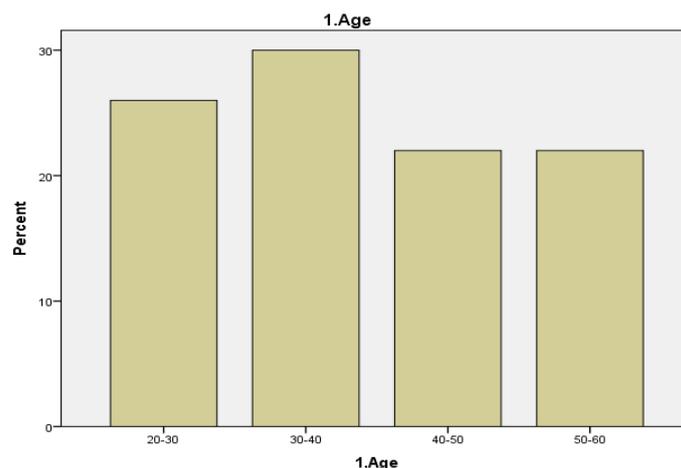
It is the first hand information, which is being collected by the researcher, or assistant is called primary data. In this study, the primary data was collected through structured questionnaire. Questionnaire was employed to collect the primary data from 50 respondents in the multispecialty hospital.

b. Secondary data

Besides the primary data, the secondary data was also collected for the study. Websites and books were referred for this purpose from the library to facilitate proper understating of the study.

DATA ANALYSIS AND INTERPRETATION:

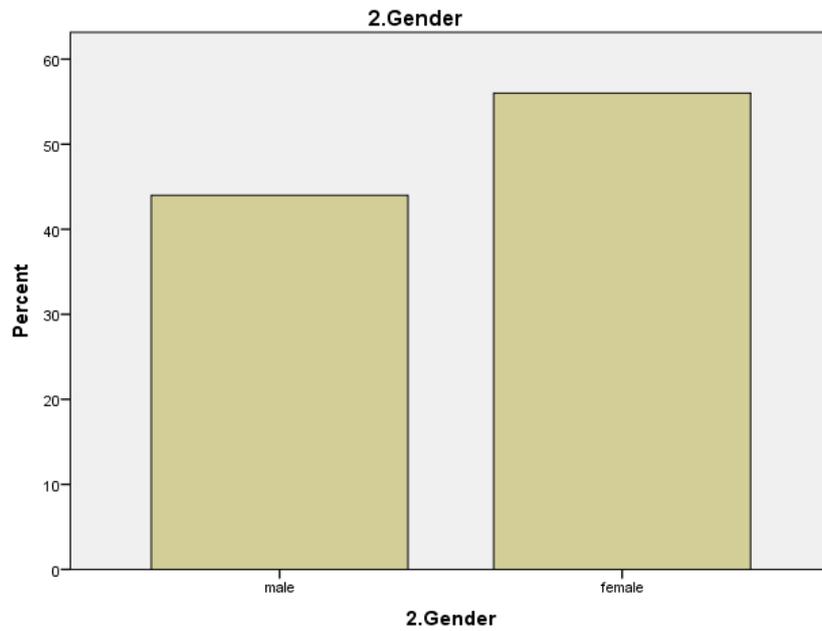
1. AGE OF THE PATIENT:



INFERENCE

The above table shows regarding the age were 26% of the respondents mentioned between 20-40; 30% said between 30-40; 22% said between 40-50 and 22% said between 50-60.

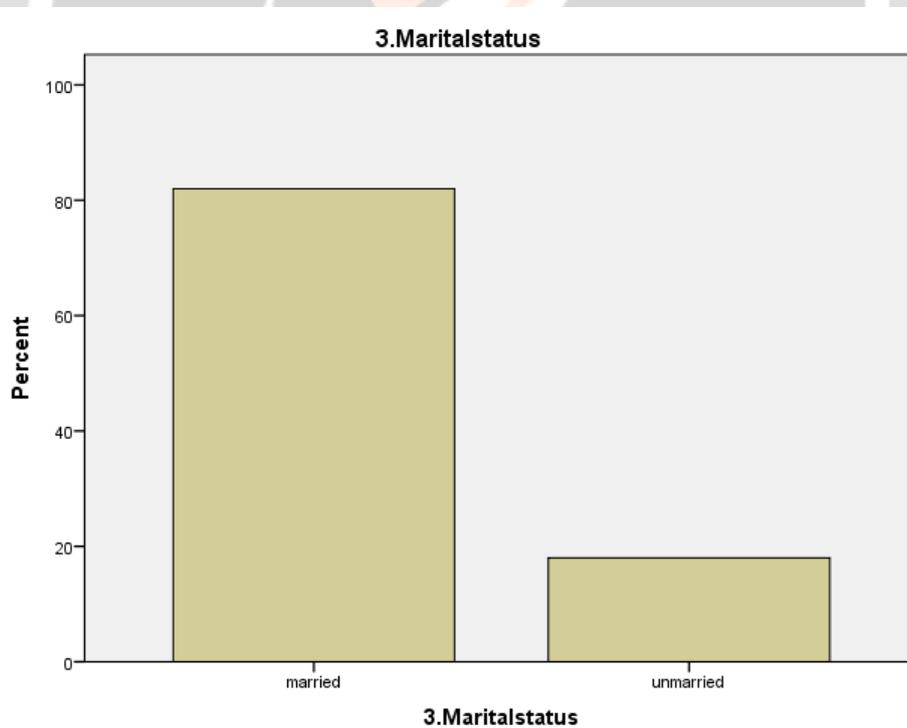
2. GENDER OF THE PATIENT:



INFERENCE

The above chart regarding gender was 44% of the respondents are male and 56% are female.

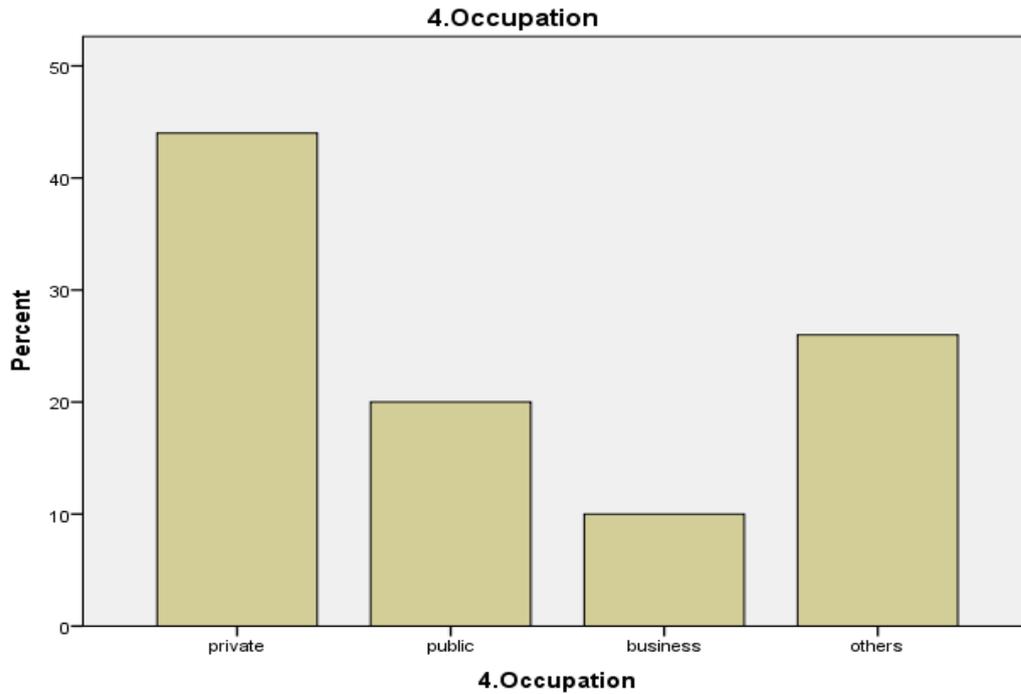
3. MARITAL STATUS OF THE PATIENT



INFERENCE

The above chart shows regarding marital status were 82% respondents said married and 18% said unmarried.

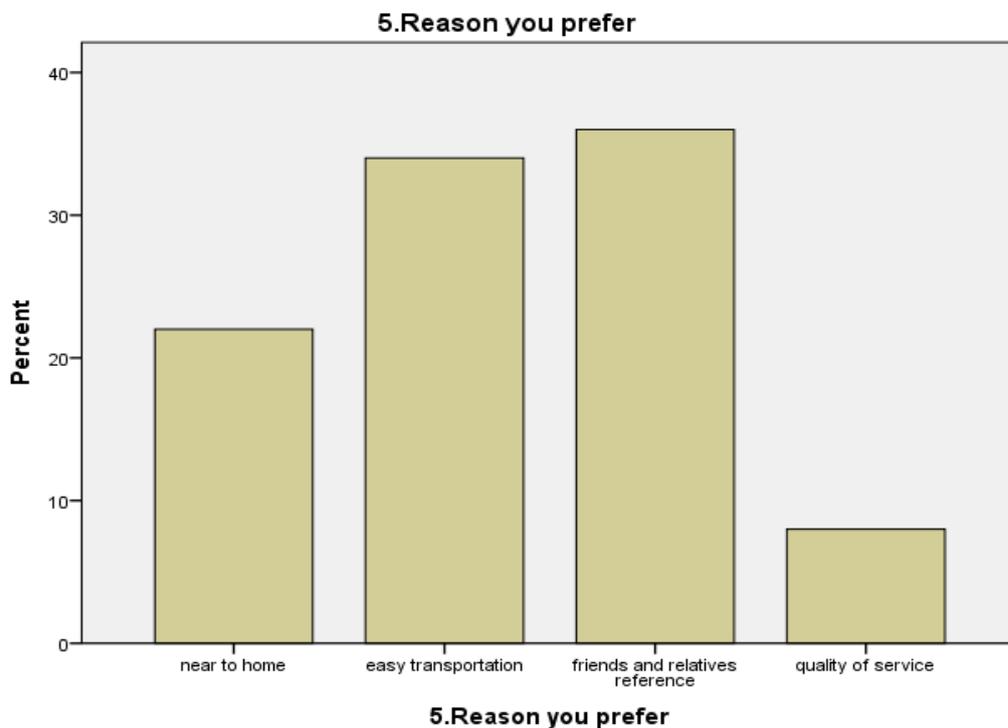
4. OCCUPATION OF THE PATIENT



INFERENCE

The above chart shows regarding the occupation were 44% respondents mentioned as private organization, 20% said as public organization, 10% said doing business and 26% said in other fields.

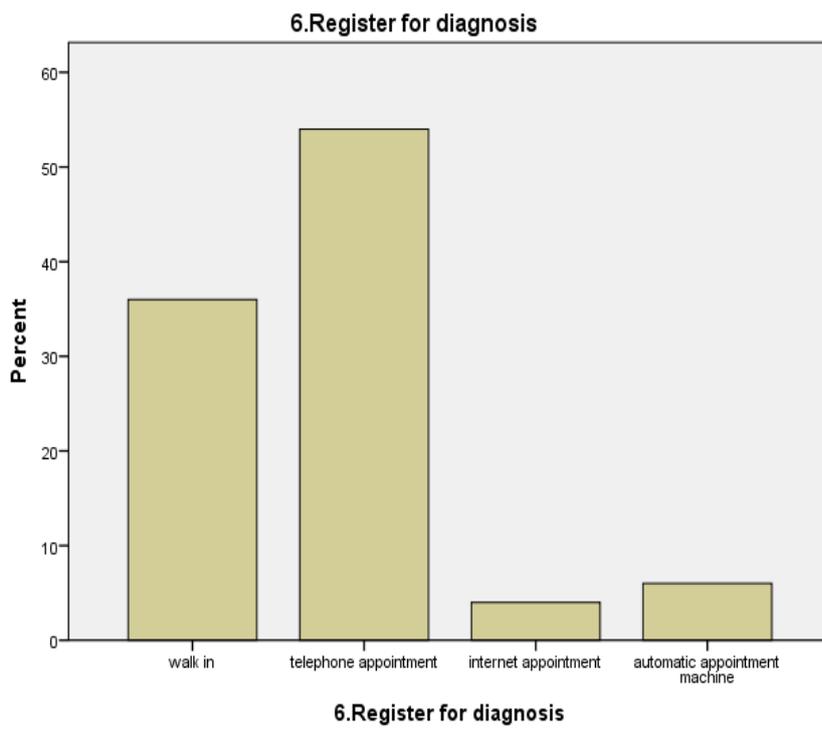
5. REASON FOR PREFERRING HOSPITAL



INFERENCE

The above chart shows regarding the reason for preferring the hospital were 22% respondents mentioned as near to home; 34% said as easy transportation; 36% said by friends and relatives reference, 8% said for quality of service.

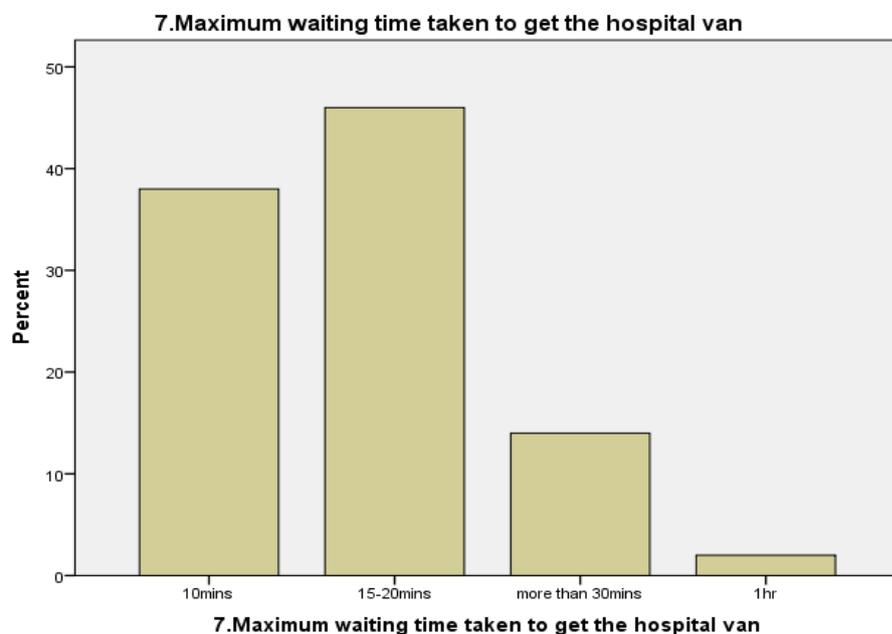
6. SOURCE OF REGISTER FOR DIAGNOSIS



INFERENCE

The above chart shows regarding the source of registration for diagnosis were 36% of the respondents register for diagnosis through walk in; 34% said through telephone appointment; 4% said through internet appointment; and 6% said through automatic appointment machine.

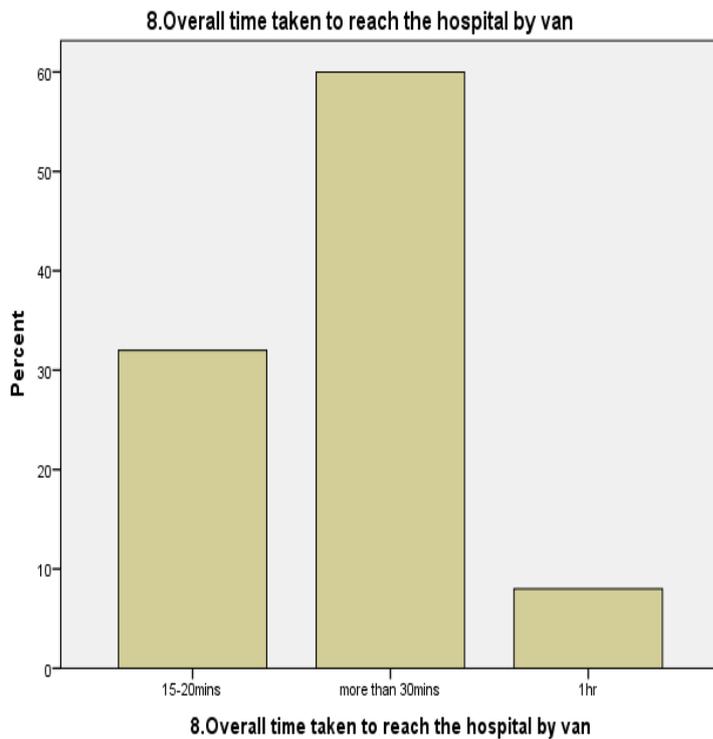
7. MAXIMUM WAITING TIME TAKEN TO GET THE HOSPITAL VAN



INFERENCE

- The above chart shows regarding maximum waiting time taken to get the hospital van were 38% of the respondents mentioned 10mins is the maximum waiting time; 46% said 15-20mins; 14% said more than 30mins and 2% said it took 1hour waiting time taken to get the hospital van.

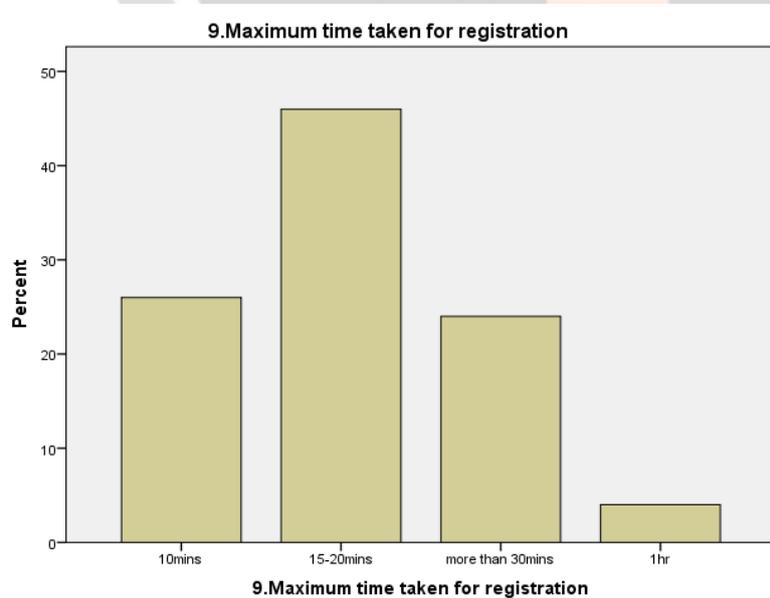
8. OVERALL TIME TAKEN TO REACH THE HOSPITAL BY VAN



INFERENCE

- The above chart shows regarding overall time taken to reach the hospital by van were 32% of the respondents mentioned 15-20mins; 60% said more than 30mins and 8% said it took 1hour waiting time taken to reach the hospital by van.
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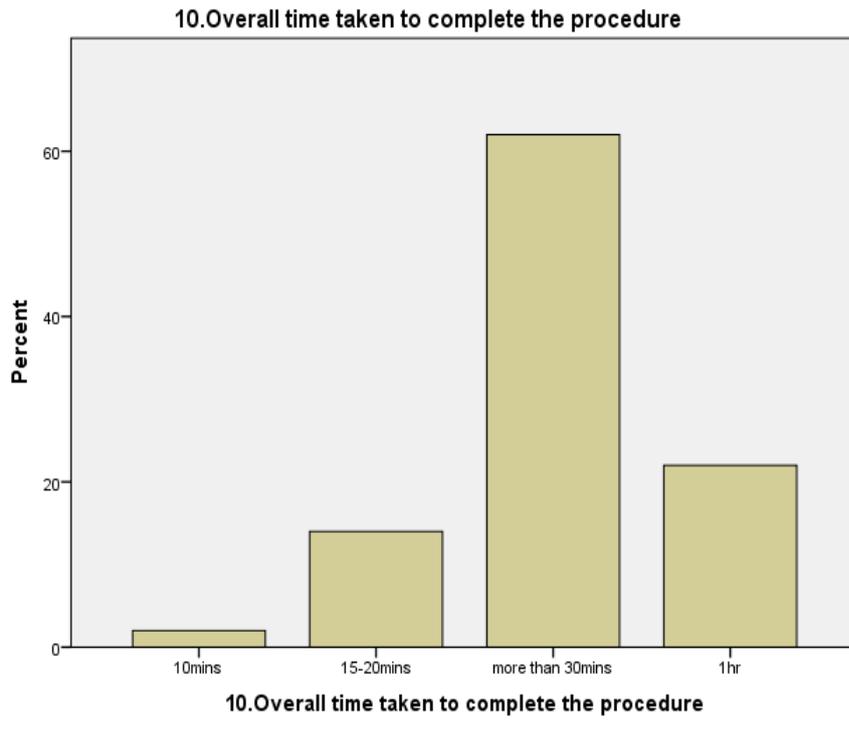
9. MAXIMUM TIME TAKEN FOR REGISTRATION



INFERENCE

- The above chart shows regarding maximum time taken for registration were 66% of the respondents mentioned 10mins; 20% said 15-20mins; 12% said 30mins and 2% said it took 1hour waiting time to complete the procedure.

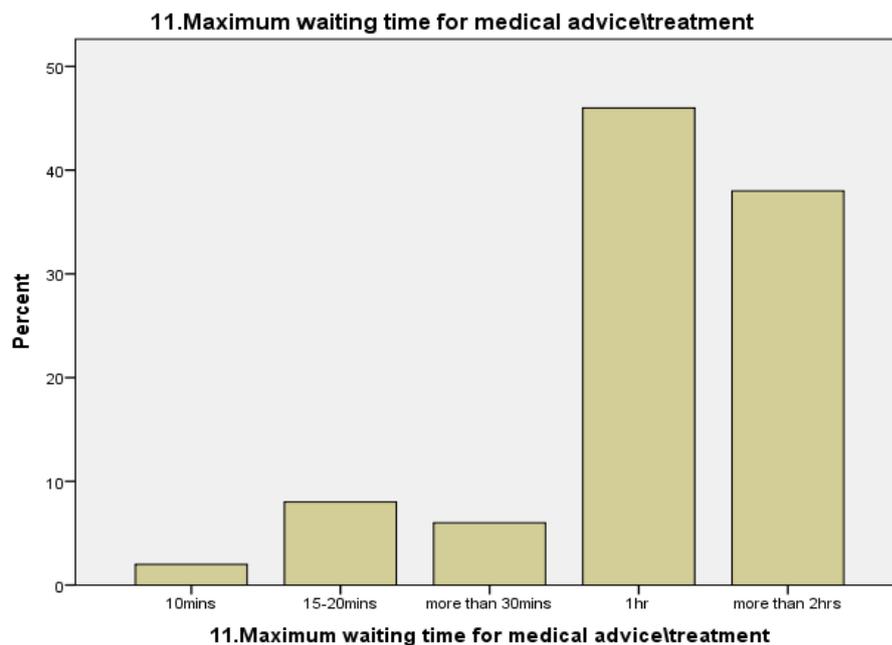
10. OVERALL TIME TAKEN TO COMPLETE THE PROCEDURE



INFERENCE

The above chart shows regarding overall time taken to complete the procedure were 26% of the respondents mentioned 10mins; 46% said 15-20mins; 24% said more than 30mins; and 4% said it took 1hour waiting time taken for registration

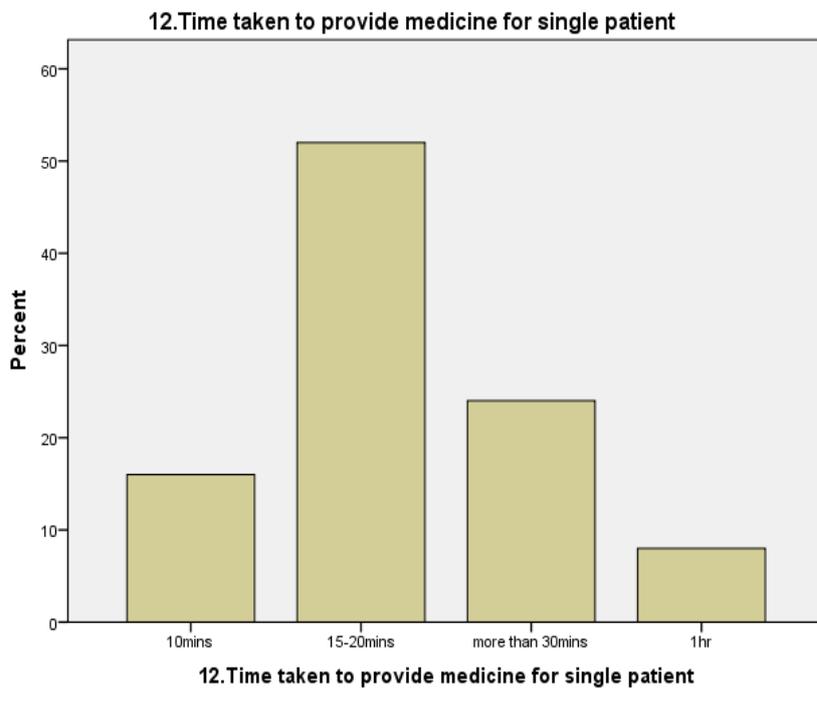
11. MAXIMUM WAITING TIME FOR MEDICAL ADVICE\TREATMENT



INFERENCE

- The above chart shows regarding maximum waiting time for medical advice\treatment were 2% of the respondents mentioned 10mins; 8% said 15-20mins; 6% said more than 30mins; 46% said 1hour; and 38% said it took more than 2hours waiting time for medical advice\treatment

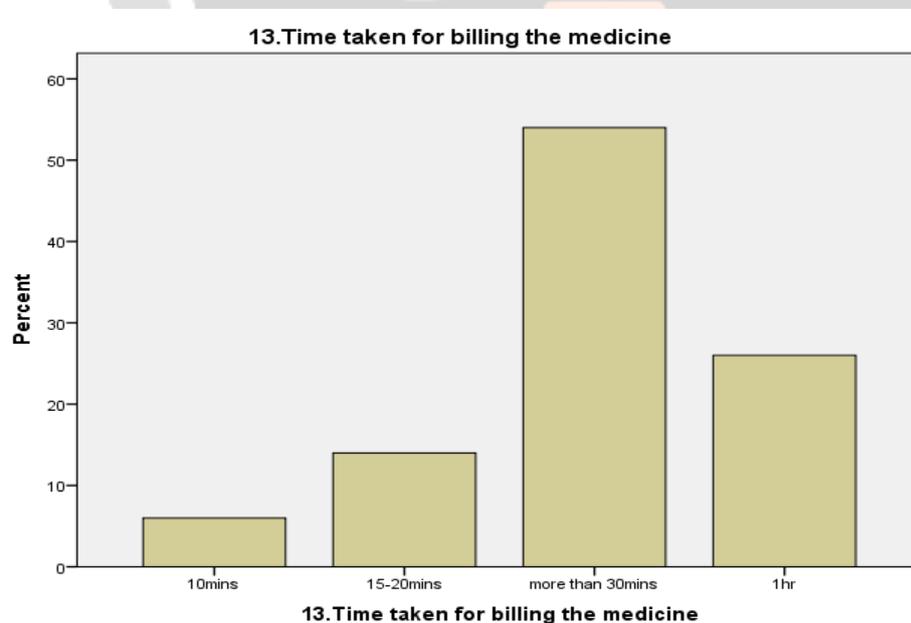
12. TIME TAKEN TO PROVIDE MEDICINE FOR SINGLE PATIENT



INFERENCE

- The above chart shows regarding time taken for to provide medicine for single patient were 16% respondents mentioned 10mins; 52% said 15-20mins; 24% said more than 30mins; and 8% said it took 1hour waiting time taken to provide medicine for single patient.

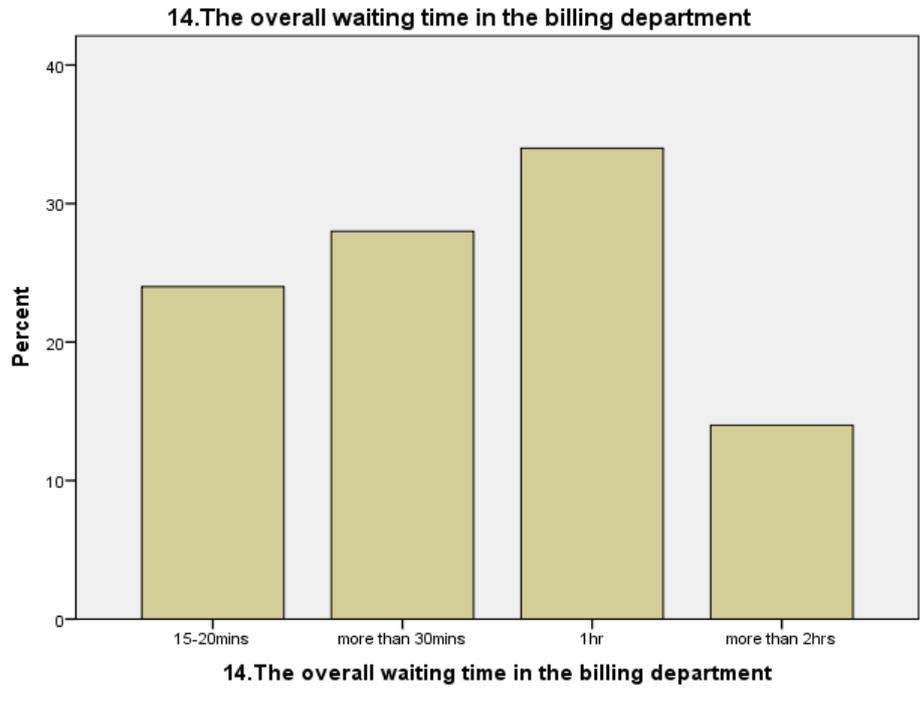
13. TIME TAKEN FOR BILLING THE MEDICINE



INFERENCE

The above chart shows regarding time taken for billing the medicine were 6% of the respondents mentioned 10mins is the time taken for billing the medicine; 14% said 15-20mins; 54% said more than 30mins; and 26% said it took 1hour waiting time taken for billing the medicine.

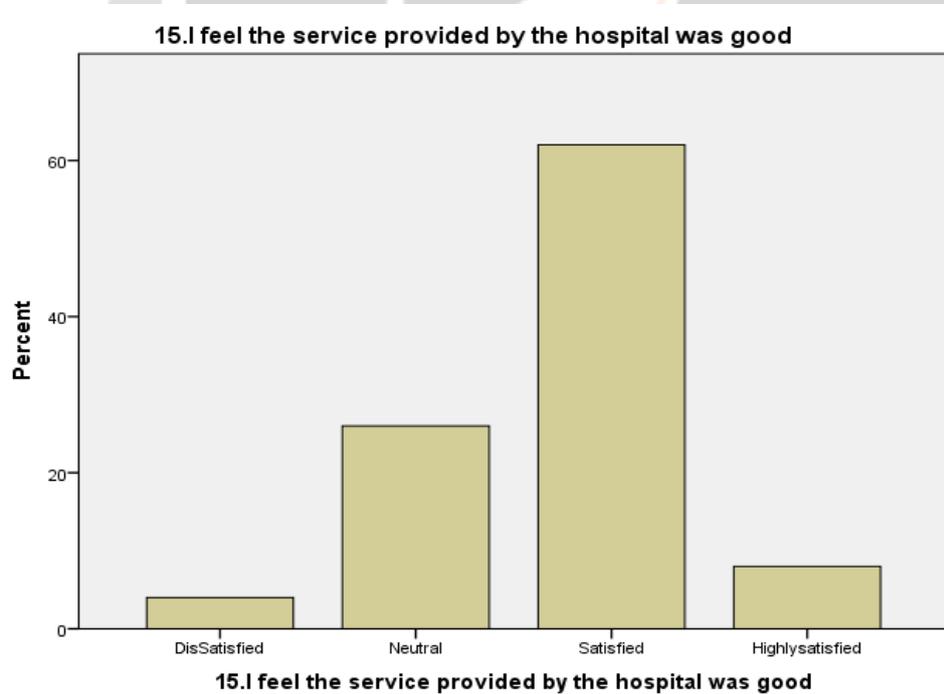
14. OVERALL WAITING TIME IN THE BILLING DEPARTMENT



INFERENCE

The above chart shows regarding overall waiting time in the billing department were 38% of the respondents mentioned 15-20mins; 20% said more than 30mins; 24% said 1hour; and 4% said it took more than 2hours waiting time in the billing department.

15. OVERALL SERVICE PROVIDED BY THE HOSPITAL:



INFERENCE

The above chart shows regarding overall service provided by the hospital were 4% of the respondents are dissatisfied; 26% said neither satisfied nor dissatisfied; 62% are satisfied; and 8% are Highly Satisfied with the service provided by the hospital

ANALYSIS OF MEAN:

TABLE 16: MEAN ANALYSIS OF SATISFACTION LEVEL ON WAITING TIME FOR TRANSPORTATION:

S.NO	Dimensions on satisfaction level on waiting time for registration	Mean	Std. Deviation
1.	Frequent transportation facility hospital	3.6800	.76772
2.	I feel comfortable for waiting to reach hospital by van	3.6000	.80812
3.	Satisfied with van facility provided by the hospital	3.6000	.85714
4.	Maximum time taken to fill the patients by hospital van	1.9400	.68243
5.	Maximum waiting time taken to get the hospital van	1.8000	.75593
6.	Overall time taken to reach the hospital by van	2.7600	.59109

INTERPRETATION:

From the table 16: it is found from the mean analysis that the patients were satisfied in frequency and transportation facility provided by the hospital but they were mostly dissatisfied in time taken to get and fill the hospital van. Hence it states that patients were dissatisfied with the overall time taken to reach hospital by van with the mean waiting time as 2.76

TABLE 17: MEAN ANALYSIS OF SATISFACTION LEVEL ON WAITING TIME FOR REGISTRATION:

S.NO	Dimensions on satisfaction level on waiting time for registration	Mean	Std. Deviation
1.	Getting appointment in the hospital is fast	3.8000	.57143
2.	I am satisfied with the automatic token machine facility	3.7200	.78350
3.	Maximum time taken for registration	2.0600	.81841
4.	Maximum time taken for calling the token	1.4800	.61412
5.	Maximum time taken for counseling the new patient	1.5000	.78895
6.	Overall time taken to complete the procedure	3.0400	.66884

INTERPRETATION:

From the table 17: it is found from the mean analysis that the patients were satisfied in getting appointment fast and automatic token machine facility but they were mostly dissatisfied in time taken for registration, calling the token and counseling the new patient. Hence it states that patients were neither satisfied nor dissatisfied in overall time taken to complete the registration procedure with the mean waiting time as 3.04.

TABLE 18: MEAN ANALYSIS OF SATISFACTION LEVEL ON WAITING TIME FOR DIAGNOSIS:

S.NO	Dimensions on satisfaction level on waiting time for diagnosis	Mean	Std. Deviation
1.	I am satisfied with the environment and space for waiting room	3.9600	.60474
2.	I am satisfied with the arrival time of the doctor	3.7800	.81541
3.	Time taken by the nursing staff to the general health screening	1.6000	.63888
4.	The time taken by the doctor to consult single patient	2.8800	.93982
5.	Maximum waiting time for medical advice\ treatment	4.1000	.97416

INTERPRETATION:

From the table 18: it is found from the mean analysis that the patients were satisfied about the hospital environment and the arrival time of the doctor but they were mostly dissatisfied in time taken by nurse staff for general health screening and time taken to consult the single patient. Hence it states that patients were satisfied in overall time taken to complete the diagnosis with the mean waiting time as 4.1.

TABLE 19: MEAN ANALYSIS OF SATISFACTION LEVEL ON WAITING TIME FOR PHARMACY:

S.NO	Dimensions on satisfaction level on waiting time for Pharmacy	Mean	Std. Deviation
1.	I feel the service provided by the hospital was good	3.7400	.66425
2.	Time taken to the arrival of nurse for injection	1.5800	.60911
3.	Time taken by the physician to give medical advice prescribed	2.1200	.59385
4.	Time taken to provide medicine for single patient	2.2400	.82214
5.	Time taken to consult doctor in case of non-availability medicine	1.7600	.55549
6.	Time taken for billing the medicine	3.0000	.80812

INTERPRETATION:

From the table 19: it is found from the mean analysis that the patients were satisfied in service provided by the hospital but they were mostly dissatisfied in time taken for providing medicine for single patient and non availability of prescribed medicine. Hence it states that patients were neither satisfied nor dissatisfied in overall time taken for billing with the mean waiting time as 3.00.

TABLE 20: MEAN ANALYSIS OF SATISFACTION LEVEL ON WAITING TIME FOR BILLING:

S.NO	Dimensions on satisfaction level on waiting time for Billing	Mean	Std. Deviation
1.	I am satisfied with the service provided in billing procedure	3.7800	.54548
2.	Time taken to give all the documents for billing	2.6600	1.11776
3.	Time taken to wait for calling the token	1.5000	.73540
4.	Maximum time taken by the billing personnel to do the work	4.3800	.60238
5.	The overall waiting time in the billing department	3.3800	1.00793

INTERPRETATION:

From the table 20: it is found from the mean analysis that the patients were satisfied in service provided in billing procedure but they were mostly dissatisfied in time taken for collecting the documents and time taken for calling the token. Hence it states that patients were neither satisfied nor dissatisfied in overall time taken in billing department with the mean waiting time as 3.38.

FINDINGS

- The study regarding maximum waiting time taken to get the hospital van reveals that 38% of the respondents mentioned 10mins is the maximum waiting time; 46% said 15-20mins; 14% said more than 30mins and 2% said it took 1hour waiting time taken to get the hospital van.
- The study regarding overall time taken to reach the hospital by van reveals that 32% of the respondents mentioned 15-20mins; 60% said more than 30mins and 8% said it took 1hour waiting time taken to reach the hospital by van.
- The study regarding maximum time taken for registration reveals that 66% of the respondents mentioned 10mins; 20% said 15-20mins; 12% said 30mins and 2% said it took 1hour waiting time to complete the procedure.
- The study regarding overall time taken to complete the procedure reveals that 26% of the respondents mentioned 10mins; 46% said 15-20mins; 24% said more than 30mins; and 4% said it took 1hour waiting time taken for registration.
- The study regarding maximum waiting time for medical advice\ treatment reveals that 2% of the respondents mentioned 10mins; 8% said 15-20mins; 6% said more than 30mins; 46% said 1hour; and 38% said it took more than 2hours waiting time for medical advice\ treatment
- The study regarding time taken for to provide medicine for single patient reveals that 16% respondents mentioned 10mins; 52% said 15-20mins; 24% said more than 30mins; and 8% said it took 1hour waiting time taken to provide medicine for single patient.
- The study regarding time taken for billing the medicine reveals that 6% of the respondents mentioned 10mins is the time taken for billing the medicine; 14% said 15-20mins; 54% said more than 30mins; and 26% said it took 1hour waiting time taken for billing the medicine.
- The study regarding overall waiting time in the billing department reveals that 38% of the respondents mentioned 15-20mins; 20% said more than 30mins; 24% said 1hour; and 4% said it took more than 2hours waiting time in the billing department.
- The study regarding overall service provided by the hospital reveals that 4% of the respondents are dissatisfied; 26% said neither satisfied nor dissatisfied; 62% are satisfied; and 8% are Highly Satisfied with the service provided by the hospital.

RECOMENDATIONS:

- The patients were dissatisfied with the transportation facility since it has only one van. This can be improved by increasing the no of hospital vans.
- The patients were getting delayed in consulting the doctor due to the confusion in the patients with prior appointments through telephones and patients coming by walk-ins.
- The refreshments can be provided to the patients during the waiting time for consulting the doctor in order to manage the waiting time and make them satisfy.
- The confusion in referring the relevant doctors to the patient regarding their diagnosis is the major issue in delaying in which the staffs must be given proper training.
- The awareness among patients must be created regarding the internet appointment system where the timings of the doctor can be known to them in prior.
- The number of nursing staff can be increased in the general health screening department, Pharmacy, collection of documents reports for billing.
- The billing counters can be increased in order to reduce the queue.

CONCLUSION:

The mean waiting time was calculated in OPD for various departments from the survey collected. Regarding the transportation the patients were dissatisfied with only one bus provided which can be improved by increasing the number of vans. The registration department has the confusion 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.

BIBLIOGRAPHY:

- Zhu Zhecheng (2002). Health Services & Outcomes Research, Singapore Heng Bee Hoon Health Services & Outcomes - Research Reducing Consultation Waiting Time and Overtime in Outpatient Clinic: Challenges and Solutions, Chapter 11,
- C A Stone, J H Palmer, P J Saxby, and V S Devaraj (2000). The Impact of Engagement Processes on the First-appointment Attendance Rate at a Regional Outpatient Psychological Trauma Service.
- Ravikant Patel, Hinaben R. Patel (March 2017) International Journal of Community Medicine and Public Health, Valsad, Gujarat, India - A Study On Waiting Time And Out-Patient Satisfaction At Gujarat Medical Education Research Society Hospital Vol 4, Issue 3, Page 857
- Dr (Brig) Anil Pandit, Er Lalit Varma Dr.Amruta. (August 2016) P.Health Science E-ISSN No : 2454-9916 - Impact of OPD Waiting Time On Patient Satisfaction, Volume : 2, Issue : 8.
- Prof. Dinesh T.A, MHA, Ph.D. Prof. Dr. Sanjeev Singh, DCH, M.Phil. Prem Nair, MBBS, MD Remya T R, (2013). MHA Amrita Institute of Medical Sciences and Research Centre, Amrita Vishwa Vidyapeetham (Amrita University), Cochin, Kerala - Reducing Waiting Time in Outpatient Services of Large University Teaching Hospital - A Six Sigma Approach, Management, vol 17.
- V. Gijoa*†and Jiju Antony (17 July 2013). Published online in Wiley Online Library - Reducing Patient Waiting Time in Outpatient Department Using Lean Six Sigma Methodology.
- Mohebbifar R, Hasanpoor E, Mohseni M, Sokhanvar M, Khosravizadeh O, Mousavi Isfahani H.(Nov 10 2013) Glob J Health Sci.- Outpatient Waiting Time In Health Services And Teaching Hospitals: a case study in Iran, 6(1):172-80
- Fenghueih Huarng, Mong Hou Lee, (1996), Using Simulation In Out Patient Queues: A Case Study, International Journal of Health Care Quality Assurance, Vol. 9 Issue: 6, pp.21-25,

WIBLIOGRAPHY:

- <http://www.google.co.in>
- <http://www.google scholar.co.in>
- <http://Wikipedia.co.in>