Is Overall Patient Satisfaction Related to Patient Waiting Time Even in Specialised Practices?

Mayur R. Moreker*, Shilpa R. Moreker**, Amitkumar R. Vyas***, Tanuj R. Sharma****, Avani Bhanushali[#], Asmita S. Sakle[##], Paresh Marathe[###], Rashmikant C. Patel[####]

Introduction

Improving the flow of patients in an eye care clinic is about making their journey easier while making the best use of the doctor's time and resources in the eye clinic. It involves eliminating unnecessary steps and processes, giving the doctor more time to focus on patients and on providing good and friendly services.[1] Eye care administrators and managers benefit too: better patient flow reduces waste and makes more efficient use of time and human resources, which in turn reduces costs, attracts more patients, and improves cost recovery.[1] Thinking about what a patient values can help us to optimise patient flow. Generally speaking, patients value everything that provides them with a good outcome: appropriate referral, a correct diagnosis, the right information and advice, the right treatment, and appropriate follow-up and aftercare.[1] They do not value things that seem unnecessary to them, for example: waiting longer than seems reasonable, having to provide the same information more than once, or travelling to the hospital more than once when two visits can be safely combined.[1] It is therefore very helpful to look at eye care service as a whole from time to time and examine everything done: from the moment of first contact with the patients to the time they are finally discharged after a successful examination.[1]

The Patient's Journey in an Eye Care Clinic

It helps to consider the patient's visit to the eye clinic as a journey.[1]

Here are some examples of the different 'stations' along a patient journey through an eye clinic:

- Registration
- Making of medical records
- Visual acuity testing
- Slit lamp examination and Fundus Examination
- Ancillary Testing like Fundus Photography and Visual Field Analysis
- Consultation with the Doctor and Treatment Counselling[1]

Bottle Necks in this Journey

Finding and eliminating bottlenecks is relatively straightforward. The aim is to

*Associate Professor of Ophthalmology & Consultant Eye Surgeon - Ocular Inflammation, Immunology, Uveitis, Cornea, Complicated Cataracts and Neuro-Ophthalmology, Bombay Hospital Institute of Medical Sciences, Mumbai, **Consultant Pathologist and Lab Director, ***Quality Manager - NM Medical Centre, Mumbai, ****Fellow - Cornea, Anterior Segment & Ocular Surface Disorders, Dr. Shroff's Charity Eye Hospital, New Delhi, #Officer on Special Duty, ##Consultant Microbiologist and Head of Microbiology, ###Consultant Pathologist, ####Director - Taparia Institute of Ophthalmology and Professor of Ophthalmology, Bombay Hospital and Medical Research Centre, 12 New Marine Lines, Mumbai-400020.

reduce waiting times and make better use of equipment and the time of clinicians.

Bottlenecks are usually easy to identify: they are the areas with the longest queues.

For example, one often sees long queues in front of the visual acuity testing station, whereas, in another part of the clinic, the screening station is waiting for patients. In this instance, the visual acuity testing station is the bottleneck - it is the part of the clinic where patients are getting stuck.[1] Using an additional person at the visual acuity testing stage would speed up the flow of patients through this area and provide a steady stream of patients at the screening station. Patients will therefore have a quicker journey, and eye care workers' time will be used more efficiently. It is worth noting that this is a process of ongoing improvement: once one bottleneck has been dealt with, it will very soon become clear if another part of the clinic has become congested and will require attention.[1]

What is Turnaround Time?

In general, **turnaround time** means the amount of time taken to fulfill a request.

In computing, turnaround time is the total time taken between the submission of a programme/process/thread/task (Linux) for execution and the return of the complete output to the customer/user. It may vary for various programming languages depending on the developer of the software or the programme. Turnaround time may simply deal with the total time it takes for a programme to provide the required output to the user

after the programme is started. Turnaround time is one of the metrics used to evaluate an operating system's scheduling algorithms. In case of batch systems, turnaround time will include time taken in forming batches, batch execution and printing results. With increasing computerisation of analytical instruments, the distinction between a computing context and a "non-computing" context is becoming semantic. An example of a "non-computing" context of turnaround time is the time a particular analysis in a laboratory, such as a medical laboratory, other commercial laboratories or a public health laboratory takes to result. Laboratories may publish an average turnaround time to inform their clients, e.g. a health care worker ordering the test, after what time a result can be expected. A prolonged turnaround time may give the requester a clue that a specimen was not received, that an analysis met with problems within the lab including that the result was unusual and the test was repeated for quality control.

Patient Flow at Taparia Institute of Ophthalmology (TIO):
Patients

Approximately 50 - 60 patients visit the institute on any working day.

Some patients visit the clinic after taking an appointment while the rest are walk-in patients (who come without an appointment) due to variety of reasons. The institute encourages patients to take an appointment before coming to the hospital but has a policy to accommodate the unscheduled ones, as far as possible, during the day. Bulk of the patients,

typically, arrives between 09:00 hrs. and 18:00 hrs.

Appointments

The patient appointment is managed and coordinated by the receptionist and at times independently by the doctors. A patient can take appointment by phone or by physically visiting the institute. The appointment system at the hospital is at present manual. Depending upon the severity of the health problem and the availability of the slots a patient is provided an appointment. The patients are expected to arrive at the scheduled time. The patients with appointment are given priority over the walk-ins; however, the institute tries to accommodate as many walk-ins as possible during the day.

TIO Patient Flow

1. Registration: On arrival, the new patient (along with an attendant) registers at the reception counter. The receptionist confirms the appointment and provides a registration form to collect relevant patient information. The receptionist enters the relevant details in her register. A consultation fee is collected at the reception counter and a photograph is taken for the BH patient Identity Card. Patient forms are sent to the optometrist(s) and the patients are usually called according to numbers at every stage. The patient waits in the TIO waiting area until called for examination by the optometrist.

2. Optometrist: An attendant calls out the name of the patient to the optometrist room for a preliminary eye examination. After recording the history and the chief complaints, the optometrist performs a preliminary eye-sight testing. Once the basic check is carried out, the patient returns to the TIO waiting area for dilation. The optometrist records the results of the eye examination on the patient form. The forms are then sent to the ophthalmologists.

3. Dilation: Dilation is performed by a nurse or an attendant after checking with the ophthalmologist (who may choose to have a look at the patient in an undilated state), in the TIO waiting area, for every new patient, before the patient is sent to the ophthalmologist for consultation. Depending upon the patient condition, the dilation takes approximately 30 minutes. Once the dilation is complete (as confirmed by a nurse or attendant) the patient waits for his/her turn (in the TIO waiting area) to meet the ophthalmologist.

4. Ophthalmologist Consultation: The ophthalmologist reads the patient form, performs a thorough examination of the patient and makes a diagnosis. This engagement is for about 10-20 minutes. Depending upon the severity (of the eye problem) the patient is either recommended a medication or a surgery. The ophthalmologist writes the diagnosis and the management plan of the patient.

The patient then meets the counsellor (receptionist or resident ophthalmologist) who explains arrangements for the procedures (if any) to be performed based on the diagnosis. The counsellor gives the patient his/her medical form. The patient is advised to bring the form along with him/her during every visit.

All follow-up patients may or may not have to go through all the stages described above.

In the normal procedure of the clinic, repeat visit patients have dilation done in the vision room before they are seen by the doctors, while first visit patients see doctors without a preliminary dilation.

Problem Statement

Previous studies have tried to identify the main causes of the prolonged patient waiting time for consultation through analysing the impact of the selected controllable input variables on patient waiting time. This study is initiated with a vision to resolve the patient long waiting time for consultation, and it is the first step towards achieving significant impact on shortening patient waiting time for consultation. The final objective is to help to reduce this overall patient waiting time for consultation. As an initial understanding, we expect this study to lead to a bigger analytical study in the future with more details and a narrow focus.

Ocular Inflammatory Disorders involve

1. Autoimmune Uveitis & Necrotising Scleritis
2. Ocular Surface Disorders and Dry Eyes
3. Chemical Eye Injuries, Stevens Johnson Syndrome
4. Chronic Conjunctivitis, Ocular Cicatricial Pemphigoid
5. Allergic Eye Diseases, Vernal & Atopic Keratoconjunctivitis
6. Complex Eye Infections, Keratitis, Scleritis, Endophthalmitis, Orbital Cellulitis
7. Limbal Stem Cell Deficiency, Stem cell Transplants, Amniotic Membrane Transplants
8. Complicated (Uveitic) Cataract Surgeries
9. Complicated Corneal Transplants, Keratoprosthesis
10. Inflammatory Glaucoma
11. Eye in Rheumatoid Arthritis, Collagen Vascular Disorders, Multiple Sclerosis
12. Tuberculous Eye Disease & Presumed Ocular Tuberculosis
13. Ocular Surface Malignancies

These patients and so also patients with neurology disorders require treatment other than that which other general eye check-up patients require. Ocular Inflammatory disorders are chronic, relapsing, occasionally sight-threatening afflictions. Psychological aspects exist in them not only at the time of announcement of the chronic nature of the disorder but also in the course of management of the disease; many patients being apprehensive and emotionally unstable. The possible permanent impact of these disorders on vision and quality of life are a source of anxiety to the patients and their family. Knowledge of the psychological conflicts in the management of ocular inflammatory disorders and addressing them appropriately help clinicians ensure good patient-clinician relationship for long term compliance to treatment.

Ocular Inflammation Patients are different from other patients because

1. They need a detailed history taking and review of systems at every visit.
2. They need a review of investigations at every visit.
3. They require a detailed eye examination including dilatation at

each visit.

4. They require multiple ancillary tests like fundus photography at each visit.

5. Since these diseases are wrought with potential complications of disease process and also of treatment, a meticulous documentation is required to safeguard the specialist against medico-legal hassles.

Current Study

Study Design

Prospective Consecutive Non-Interventional Case Series

Study Period

1 week

Study Site

Taparia Institute of Ophthalmology, 4th Floor, New Wing, Bombay Hospital

Study Population

All patients (New and Follow up) visiting TIO for eye check up

Sample Size: 56 patients

With the help of the support staff in TIO the above study was carried out in TIO.

The time of check in was determined from the registration slip with the patient.

The time of check out was noted by the ophthalmologist.

The "Turn around Time" (TAT) was the difference between the two times.

Study Results

A total of 56 patients visited Taparia Institute of Ophthalmology to consult the Ocular Inflammation Specialist in the study period. Of these 56 patients, 24 patients were general check-up patients. The remaining 32 patients were specialty Ocular Inflammation and Neuro-ophthalmology patients. The 24 general check-up patients had an average "Turn around Time" of 79 minutes with a minimum 20 minutes and a maximum of 177 minutes. The 32 Ocular Inflammation and Neuro-Ophthalmology patients had an average "Turn around Time" of 83 minutes with a minimum 30 minutes and a maximum of 190 minutes.

Master Chart Analysis for General Check up Patients

	Check-In	Check-Out	Type	Type	Diagnosis	Time
1	11:23 AM	1:50 PM	Walk-in	New	Cataract	147
2	1:00 PM	2:00 PM	Appt	New	Cataract	60
3	1:53 PM	4:50 PM	Appt	New	General	177
4	2:50 PM	3:50 PM	Walk-in	New	General	60
5	12:00 PM	2:00 PM	Appt	New	Cataract	120
6	2:30 PM	3:45 PM	Appt	FU	Glaucoma	75
7	2:22 PM	2:55 PM	Walk-in	New	General	93
8	2:30 PM	4:30 PM	Walk-in	New	General	120
9	3:00 PM	3:20 PM	Appt	New	General	20
10	4:30 PM	5:30 PM	Appt	New	General	60
11	5:20 PM	6:15 PM	Walk-in	New	General	55
12	1:05 PM	2:05 PM	Appt	FU	Glaucoma	60
13	2:00 PM	3:35 PM	Appt	New	General	95
14	2:10 PM	3:15 PM	Appt	New	General	65
15	12:00 PM	2:40 PM	Appt	New	Cataract	160
16	12:45 PM	2:50 PM	Walk-in	New	General	115
17	3:50 PM	4:30 PM	Walk-in	New	General	40
18	5:40 PM	6:30 PM	Walk-in	New	General	50
19	2:10 PM	2:40 PM	Walk-in	New	General	30
20	4:20 PM	5:00 PM	Walk-in	New	General	40
21	4:35 PM	5:40 PM	Walk-in	New	General	70
22	4:40 PM	5:50 PM	Walk-in	New	General	70
23	5:40 PM	6:15 PM	Walk-in	New	General	35
24	3:40 PM	5:10 PM	Walk-in	FU	General	90
			Total patients	24		
			Total time	1907 minutes		
			Average TAT	79 minutes		

Master Chart Analysis for Specialty Inflammation Patients

	Check-In	Check-Out	Type	Type	Diagnosis	Uveitis Type	Time
1	1:50 PM	3:30 PM	Appt	FU	Scleritis	Autoimmune	110
2	2:40 PM	4:30PM	Walk-in	FU	Intermediate Uveitis	Koch's	100
3	3:00 PM	4:30 PM	Appt	FU	Posterior Uveitis	VKH	90
4	4:05 PM	6:15 PM	Walk-in	New	Neuro-Ophthalmology		130
5	4:40 PM	6:00 PM	Appt	FU	Posterior Uveitis	Choroiditis	100

6	12:12 PM	2:28 PM	Appt	New	Intermediate Uveitis	Autoimmune	136
7	2:30 PM	3:30 PM	Walk-in	New	Neuro-Ophthalmology		60
8	4:00 PM	4:55 PM	Appt	FU	Intermediate Uveitis	Autoimmune	55
9	5:00 PM	6:00 PM	Walk-in	New	Neuro-Ophthalmology		60
10	12:00 PM	1:45 PM	Appt	FU	Intermediate Uveitis	Histiocytosis	105
11	2:00 PM	3:00 PM	Appt	FU	Scleritis	Autoimmune	60
12	2:05 PM	4:00 PM	Appt	FU	Intermediate Uveitis	Koch's	115
13	5:20 PM	6:10 PM	Walk-in	New	Neuro-Ophthalmology		50
14	5:15 PM	6:30 PM	Appt	FU	Episcleritis	Autoimmune	75
15	12:00 PM	12:35 PM	Appt	FU	Anterior Uveitis	Autoimmune	35
16	12:00 PM	1:25 PM	Appt	FU	Anterior Uveitis	Fuch's	71
17	12:50 PM	2:15 PM	Appt	FU	Posterior Uveitis	Autoimmune	85
18	1:10 PM	1:35 PM	Appt	FU	Episcleritis	Autoimmune	35
19	12:00 PM	2:35 PM	Appt	New	Posterior Uveitis	VKH	155
20	1:00 PM	1:30 PM	Appt	FU	Ocular Surface	SJS	30
21	12:42 PM	2:50 PM	Walk-in	New	Neuro-Ophthalmology		112
22	1:15 PM	3:10 PM	Appt	FU	Intermediate Uveitis	Autoimmune	115
23	1:20 PM	4:30 PM	Appt	FU	Posterior Uveitis	VKH	190
24	2:00 PM	3:10 PM	Appt	FU	Scleritis	Autoimmune	70
25	2:53 PM	5:00 PM	Walk-in	New	Neuro-Ophthalmology		113
26	1:23 PM	2:30 PM	Appt	New	Intermediate Uveitis	Koch's	53
27	3:45 PM	4:25 PM	Appt	FU	Intermediate Uveitis	Koch's	40
28	12:45 PM	2:15 PM	Walk-in	New	Neuro-Ophthalmology		90
29	1:30 PM	2:45 PM	Appt	New	Anterior Uveitis	Sarcoidosis	75
30	2:25 PM	3:30 PM	Appt	FU	Posterior Uveitis	Choroiditis	65
31	3:00 PM	4:05 PM	Walk-in	FU	Posterior Uveitis	Ocular Behcher's	65
32	4:25 PM	5:00 PM	Appt	FU	Orbital Inflammation	Tyrotoxicosis	35
					Total Patients	32	
					Total Time	2680 minutes	
					Average TAT	83 minutes	

Review of Literature on Waiting Time and Patient Satisfaction

Patient satisfaction is an outcome that can be measured in the ambulatory medical care setting. Overall patient satisfaction has been associated with patients' perceptions of wait times.

Waiting time and its association to patient satisfaction

In a previous study,[2] wait time was associated with patient satisfaction, regardless of financial status. There was a clear association between time spent waiting and overall patient satisfaction-dissatisfaction, with a linear relationship between these two variables. By fitting a linear regression line through the data points, the change in overall satisfaction by minute spent waiting was found to be one unit of overall satisfaction (on a scale of 1-7) for each 17-minute change in wait time, with a predicted overall satisfaction score of 7 (completely satisfied) for a wait time of 29.9 minutes. This study found that satisfaction with the time spent waiting was the driver most strongly correlated with overall satis-faction in the outpatient eye clinic. Other drivers including the level of knowledge of the doctor, as well as with the amount of time spent with doctor, was also correlated with overall satisfaction. These findings suggest that clinics with highly variable and high wait times could most effectively increase overall patient satisfaction by employing methods to increase patient satisfaction with wait time. The fact that satisfaction with time spent with the physician is also strongly associated with overall satisfaction suggests that strategies employed to decrease clinic wait times should not do so at the expense of face-to face time with the patient.

Does Cost of Care Change the above association?

The cost of care was not found to change the association between wait time and patient satisfaction.[2] Patients who received free care were just as dissatisfied with high wait times as those without any financial assistance. While the out-of-pocket cost to patients not receiving free care varies a great deal, lower levels of satisfaction with the amount paid for the visit in the group not receiving free care indicates that the difference in out-of-pocket costs between the two groups is significant. Patient satisfaction is higher in patients who experience less wait times, even in an outpatient eye clinic, with a high percentage of patients receiving free care and is strongly associated with actual clinic wait times, and that to maximise overall satisfaction, actual wait times should be less than approximately 30 minutes. The numeric relationship between wait time and patient satisfaction can be used to predict patient satisfaction, which can be helpful with clinic scheduling. This previous study provides evidence that the actual time patients spend waiting to be seen can strongly influence patient satisfaction scores.[2]

Patient Arrival and its impact on Patient Waiting time

The most significant finding from another study[3] is that, if patients arrive according to their appointment time punctually, the patient waiting time for consultation can be reduced significantly, by about 30%. It indicates that patients' irregular arrival is the main cause of the congestion of the system and patients' long waiting time. Thus, in order to obtain smooth patient arrivals, it is recommended that scheduling patient appointments avoiding the crowded arrivals during peak hours be done. Another important finding is that if the re-entry to consultation caused by dilation can be avoided, the patient waiting time can be reduced to a level equivalent to the effect of smoothing patient arrivals.

Role of pupillary dilatation in eye clinics on Patient Waiting time

An eye doctor requires the patient to have pupillary dilation for a better examination. Thus, the patient will be required to leave the consultation room and have dilation done at the waiting area before seeing the doctor again when the eyes are fully dilated. Generally, it will take about 30 minutes for the dilation to take effect. In this case, the patient waiting time will be long because the patient has to queue twice to see the doctor, i.e. re-entry characteristics. A triage process may be setup to determine whether a first visit patient needs to do dilation before consultation.[3]

Comparison OF TAT OF TIO with other eye clinics[4]

A comparison of "Turn around Time" of the Ocular Inflammation Specialty at Taparia Institute of Ophthalmology, Bombay Hospital with that of the Cambridge University Hospital 4 (1/2 hour - over 4 hours) shows the "Turn around Time" is not only comparable but also at times better.

Take Home Message

The current study shows that the "Turn around Time" of a specialised Ocular

Inflammation practice based in Taparia Institute of Ophthalmology which is a part of Bombay Hospital and Medical Research Centre, an apex tertiary care in south of Mumbai in Western India is 83 minutes with a minimum of 30 minutes and a maximum of 190 minutes, depending on the complexity of the diseases tackled. ***This is not only comparable but better than international standards.*** Perhaps the most important aspect of this study is that, knowledge of the minimum / maximum / average "Turn around Time" lets a more realistic expectation about the waiting time be set in the mind of the patient at the time of scheduling an appointment with the doctor.

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Total joint arthroplasty in younger patients: heading for trouble?

Total hip arthroplasty (THA) and total knee arthroplasty (TKA) are safe and effective surgical procedures for advanced degenerative osteoarthritis.

The lifetime risk of revision (LTRR) for patients over 70 years of age, most of the arthroplasty patient population, is low.

Revision performed within 5 years after surgery are associated with higher re-revision risks, and orthopaedic surgeons have very little data on the outcome of revision THA and TKA in young patients.

The current trend to implant total hip and knee implants in ever younger patients, driven by the fact that the short-term outcomes in the first few years after surgery are mostly acceptable, could lead to many patients ceasing to be revisable, and these patients might become a large burden to society in terms of cost and disability. Both patients and surgeons need to be aware of this possibility, and postponing this kind of surgery, despite the realistic limitations of patients with osteoarthritis, should be considered more frequently.

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