

**OUTPATIENT DEPARTMENT (OPD) OPERATIONS
MANAGEMENT DURING COVID AT JASLOK
HOSPITAL AND RESEARCH CENTRE, MUMBAI**

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfilment for the award of the degree of
Master of Business Administration (MBA)
in
Hospital and Health Management

By

Tanzila Bandmaster
(IIHMR-U/01/2019-21/1024)

Under the Supervision and Guidance of

Col. Dr. Mahender Kumar
Professor

2021

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled **Outpatient Department (OPD) Operations Management During Covid at Jaslok Hospital and Research Centre, Mumbai** is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

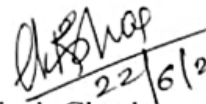


Name of Student: Tanzila Abdul Hafiz Bandmaster

Date: 2/7/2021

CERTIFICATE

This is to certify that TANZILA BANDMASTER in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur has successfully completed her internship at Jaslok Hospital and Research Centre, Mumbai during April 1, 2021 to June 30, 2021.


22/6/2021

Dr Rajesh Chaskar
DGM – Operations
Jaslok Hospital and Research Centre, Mumbai

Place: Jaslok Hospital, Mumbai
Date: 22/6/2021

CERTIFICATE

This is to certify that dissertation titled **Outpatient Department (OPD) Operations Management During Covid at Jaslok Hospital and Research Centre, Mumbai** is a record of the research work undertaken by TANZILA BANDMASTER in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur under my guidance and supervision and her approach to the research study has been sincere, scientific, and analytical.

Col. Dr Mahender Kumar
Professor
IIHMR University, Jaipur

Date: 2/7/2021

Dr Dhirendra Kumar
Dean
IIHMR University, Jaipur

Date: 2/7/2021

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Tanzila Bandmaster

PLACE: Surat

DATE: 2/7/2021

TABLE OF CONTENTS

Sr. No.	Title	Page No.
1	Abstract	10
2	Introduction	12
2.1	Out Patient Department (OPD)	12
2.2	COVID-19	13
2.3	Research Question	15
2.4	Objective of the Study	16
3	Review of Literature	16
4	Methodology	20
4.1	Study Design	20
4.2	Study Type	20
4.3	Study Setting	20
4.4	Study Duration	20
4.5	Study Population & Size	20
4.6	Inclusion Criteria	21
4.7	Exclusion Criteria	21
4.8	Data Analysis	21
5	Results	21
5.1	OPD Numbers	21
5.2	Waiting Time	24
5.3	Consultation Time	25
5.4	Turn Around Time (TAT)	27
5.5	Patient Satisfaction through Feedback Analysis	28
6	Discussions	29
7	Conclusion	31
7.1	Recommendations	32
8	References	34
9	Plagiarism Report	36

LIST OF FIGURES

Sr. No.	Description	Page No.
1	Confirmed COVID-19 cases in India	14
2	COVID-19 confirmed cases, deaths, recovered and active cases in Mumbai	15
3	Daily OPD numbers in April 2019 and 2021	22
4	Daily OPD numbers in May 2019 and 2021	23
5	Daily OPD numbers in June 2019 and 2021	23
6	OPD Waiting Time (in minutes)	24
7	Consultation Time Average	26
8	TAT Average	27

LIST OF TABLES

Sr. No.	Description	Page No.
1	OPD indicators and its formulas	13
2	OPD waiting time (average)	24
3	OPD waiting time (daily)	25
4	Demographic profiles of patients attending the OPD	27
5	Outcomes of the questionnaire on OPD experience	29

Chapter 1: Abstract

Background: The study of the Out-Patient Department (OPD) Operations is done to explore the quality of services provided and overall management of the department during the time of COVID at Jaslok Hospital and Research Centre, Mumbai.

Out-patient Department (OPD) acts as the first point of contact in any hospital and thus is a very important department as the hospital's first impression lies through the experience gained at this place. Most commonly used indicators to study the effectiveness of services provided in OPD are turn-around time (TAT), patient's waiting time, consultation time, and feedback analysis.

The COVID outbreak began in late 2019 in Wuhan, China and was declared a global pandemic by WHO in early 2020. It was caused by a new strain of coronavirus 2019-nCoV. COVID had a great impact on hospitals and healthcare as a whole. It changed the total perception of people for healthcare as the place where people felt safe is the same place they fear to visit for non-emergent cases.

Research Question: What is the impact on OPD operations due to COVID at Jaslok Hospital & Research Centre, Mumbai?

Objectives of this study:

- To study, collect and compile data of indicators like TAT, waiting time, consultation time and patient satisfaction of OPD
- To evaluate and analyse the effectiveness of OPD services in COVID times
- To identify and suggest measures to reduce the TAT, waiting time, and increase the OPD numbers and consultation time keeping in mind the COVID situation

Methods: A descriptive cross-sectional study was undertaken in the Out-patient Department (OPD) of Jaslok Hospital and Research Centre, Mumbai. Simple Random Sampling was done while collecting the data. Records of the patient's and doctor's visiting the OPD was collected for a duration of 3 months starting from April till June 2021 and comparing it with the data from the same 3 months i.e. April, May and June 2019 which was obtained from past records.

Result: The OPD numbers reduced in 2021 as compared to 2019. For the 3 months of 2019, the OPD numbers were 12,849 and for same 3 months of 2021, it was 5532. There was a drop of 56.95% in OPD numbers from 2019 to 2021. Waiting time was 28 minutes

for 2019 and for 2021, it is 32.1 minutes. The average consultation time comes at 7.5 minutes at Jaslok Hospital. The average Turn-Around Time came to 1 hour 20 minutes. 88.26% patients said that they had a good overall OPD experience when asked for the same in a pre-designed questionnaire.

Conclusion: An attempt has been made to assess patient experience by examining at important indicators of medical services in a tertiary level organization's OPD, which revealed several issues which have to be addressed in order to improve the hospitals' quality of service even more. Infrastructure and architectural improvements are needed to improve patient comfort, particularly at the entrance and reception. Certain enhancements to the waiting room are also required, such as making it more informational and pleasant. Despite the fact that patients are happy with the clinicians' healthcare services, clinicians must interact with patients efficiently in layman's terms.

Keywords: Service quality, hospitals, Out-patient Department, OPD, turn-around time, waiting time, consultation time, patient satisfaction, COVID-19, India

Chapter 2: Introduction

Where hospitals did not exist, outpatient care was formerly provided by a facility known as a "Dispensary," which was run by the government, local municipalities, and other entities, but lacked the aid of diagnostic facilities. Outpatient services have gradually been an integral part of hospitals since the turn of the century. In many Western countries, general service is covered by private physicians, and there are no outpatient departments in all hospitals. Whereas in India, apart from private physicians, outpatient hospital facilities are the preferred method of receiving medical treatment. Hospital treatment has moved away from being entirely inpatient-oriented and toward being mostly outpatient-oriented.(1)

Out-Patient Department (OPD)

The outpatient department (OPD) is the hospital's initial point of contact with patients. The outpatient department (OPD) is a section of the facility with designated infrastructure, clinical and other employees, and pre-scheduled hours to serve patients who are not registered as inpatients. As OPD acts as the first point of contact, it describes on a large scale the hospital's overall impression.

OPD patients' can be grouped under 3 categories: 1. Emergency Out-patients, 2. Referred Out-patients and 3. General Out-patients.

Emergency Out-patients includes the patients who need to visit the hospital in some urgent and unforeseen circumstances where the visit was not pre-planned and scheduled. Referred Out-patients are patients who are referred to a particular doctor of a particular speciality by another doctor. General Out-patients are those who visit the doctor for a particular illness. They may be pre-scheduled or walk-ins.

Quality Indicators are the Management System Tools that help us know the performance of the organization in terms of quality and even to know the areas where improvements are to be made. So, Quality Indicators are used to monitor and evaluate the processes.(2) Indicators are used in all the departments of the hospital to measure the compliance and even the quality of the services provided in a department. Out-patient Department's indicators includes Waiting Time for the patient for consultation, Turn Around Time (TAT), Consultation Time, patient satisfaction through feedback analysis and others.

"Patience is so valuable I'm willing to wait forever to achieve it. And while I wait, I may as well get busy being short-tempered." This is a quotation from the book "This Book Is Not For Sale" written by Jarod Kintz, an excellent phrase for people who have been waiting a long time to consult a doctor.

A well-structured service for OPD leads to a stronger hospital care, which is reflected by quality indicators. Research suggests that a substantial reduction in the TAT, waiting time could be attained and retained through target measures and adherence to specific guidelines. Hence, the processes undertaken in Out-patient Department should be carried out in adherence to the quality guidelines. This in turn would ascertain the safe and quality services for people with needs, reduction in time duration, achievement of quality goals in organizations, and contribution towards the better healthcare overall.

Sr No	Indicator	Definition	Formula
1	Total OPD numbers	Total number of OPD consultations completed in a day	
2	Waiting Time	Waiting time can be described as the time from the moment the patient enters the queue till he/she is seen by the doctor	$\text{Time seen by doctor} - \text{patient arrival time} / \text{Number of observations}$
3	Turn-Around Time	Turn-around time is the time duration starting from the patient entering the hospital till the time the patient exits	$\text{Patient exit time} - \text{patient arrival time}$
4	Consultation Time	Total time taken for consultation by the doctor	$\text{Total consultation time (Total number of OPD days} * \text{minutes of consultation)} / \text{total OPD visits}$

Table 1: OPD Indicators and its formulas

COVID-19

COVID-19 is an infectious condition created by a novel corona virus strain 2019-nCoV, which was eventually identified SARS-CoV-2 by the International Committee on Virus Taxonomy. The first case was registered in November 2019 in Wuhan, China which then travelled the whole world within few months and by early 2020, the World Health Organization proclaimed COVID-19 to be a worldwide pandemic.(3) By end of January, 2020, India registered the first case of COVID-19 in Kerala. It was presented by a young

lady who returned from Wuhan, China where the outbreak initiated.(4) Eventually, new cases were reported throughout India which were spread mainly by people with travel history or tourists. As a precaution, India's government imposed a 21-day nationwide lockdown in March 2020, restricting people's movement, followed by various strict restrictions across various states depending on the situations persistent in the states including night curfews, lockdowns, restricted movements across states.(5) Since the outbreak began, India has seen 29,183,121 cases and 359,676 coronavirus-related deaths (as on June 10, 2021).(6)

COVID situation has a toll on the healthcare services provided throughout the world. Hospitals everywhere began the fire-fighting and started treatments, courses to prevent the cases of COVID-19 reported and even to reduce and stop the spread of the same to other patients, staff and healthcare workers. Hospitals developed and created isolation facilities for COVID-19 positive patients and tried the best to separate the COVID and non-COVID areas.

As the threat of COVID is seen everywhere across the globe, people are hesitant to visit the hospitals for treatments, general illnesses, elective procedures, surgeries, outpatient visits as they are the hotspot where maximum people with COVID-19 virus are under the same roof for its treatment. Due to this, eventually, the number of out-patients coming to consult the doctors in hospitals have reduced to a great extent. General population are avoiding the elective procedures and even taking self-medication or preferring tele-consultation to avoid visiting the hospital. Hospital OPD numbers have reduced due to the same and thus difference can be seen in various outcomes and quality indicators.

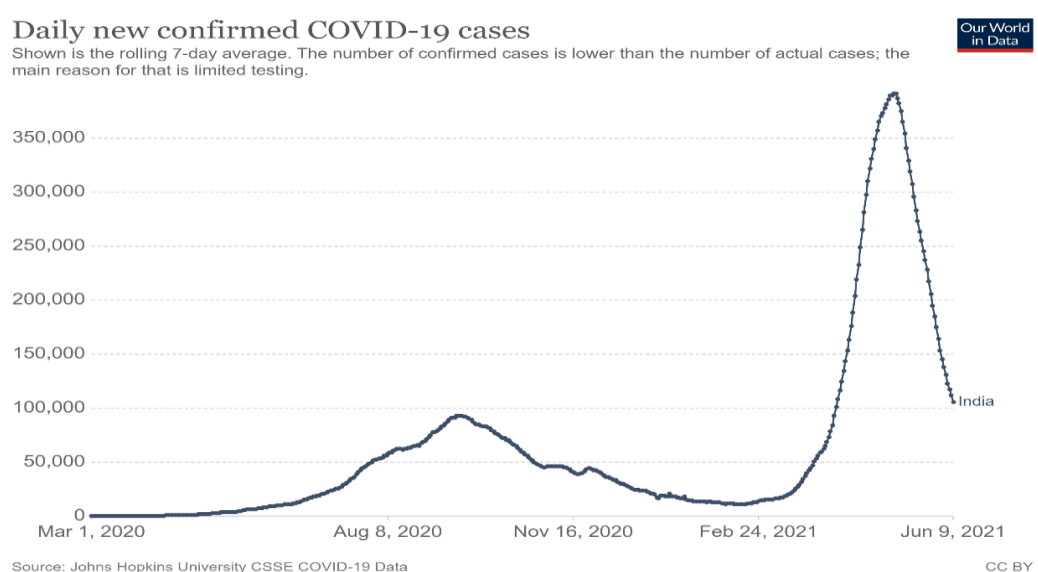


Figure 1: Confirmed COVID-19 cases in India
Source: Johns Hopkins University CSSE COVID-19 Data

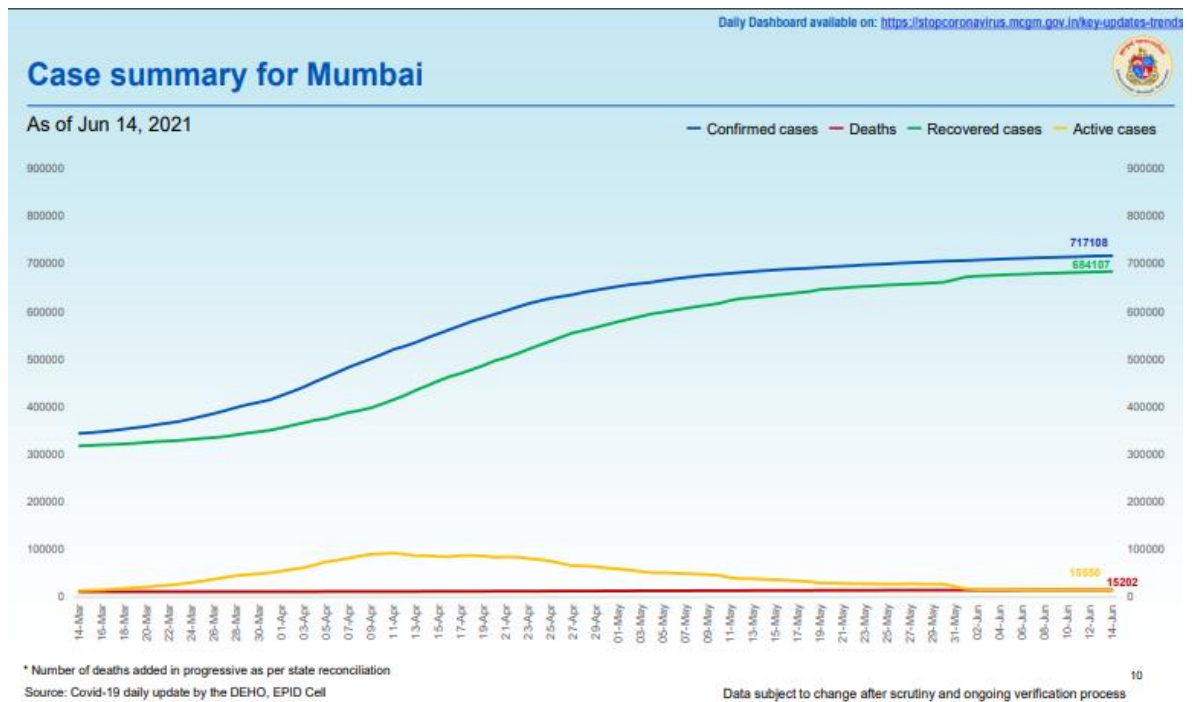


Figure 2: COVID-19 confirmed cases, fatalities, recovered cases, and active cases, Mumbai.(7)

Source: BMC COVID-19 Response War Room Dashboard

During the initial days of Covid-19 in India, healthcare appeared to take unexpected turns for a number of people.(8) One relative in Chandigarh who fractured his left leg, a neighbour in Gujarat who is a chronic diabetic patient, and another friend who met with an accident and injured his thigh and needed urgent care and surgery. All the trauma patients with comorbidities were forced to visit many locations while in pain before being sent home as health facilities were preparing for Covid-19; however, with the aid of his daughter, the aged diabetic patient was able to stockpile his medicines. The idea of creating a piece developed, as several of us discussed about the people we knew and the difficulties they were facing getting healthcare and the dread of becoming ill.

The COVID situation has taken a toll on all human beings. Persons all around have lost someone dear due to this pandemic. For the general illnesses, people are not willing to visit the Out-patient Departments and if they do in any case, they do not get the complete care and treatment as doctors are busy with COVID-19 cases and hence, if this service when given to them at the comfort of their home, it will be a huge blessing for one and all.

Research Question: What is the impact on OPD operations due to COVID at Jaslok Hospital & Research Centre, Mumbai?

Objectives of this study:

- To study, collect and compile data of indicators like TAT, waiting time, consultation time and patient satisfaction of OPD
- To evaluate and analyse the effectiveness of OPD services in COVID times
- To identify and suggest measures to reduce the TAT, waiting time, and increase the OPD numbers and consultation time keeping in mind the COVID situation

This study is done to identify and analyse the OPD indicators' data and to know where does the hospital's OPD stand in terms of the various indicators used. As the daily working of the hospital has been tampered due to the COVID-19, it seemed important to understand where the OPD stands in comparison to non-COVID year i.e. 2019 in this study. The daily OPD numbers reduced drastically and changes were seen in the indicators hence the study was done to evaluate the position of OPD during COVID as compared to non-COVID.

Chapter 3: Review of Literature

Sr No	Author (year)	Study Location	Sample Size	Sampling Technique	Salient Features
1	Christophe Jaffrelot, Vihang Jumle (2020)	India	-	-	With more than 69,264 hospitals in India providing close to 20 million beds including both public and private infrastructure, 62% of whole India's health infrastructure is accounted by private hospitals.(9)
2	B M Sakharkar, second edition (2009)	-	-	-	About 600 out-patients are treated for each in-patient bed in a year, which accounts to approximately 120 crore patients are provided service on out-patient basis in a year in hospitals.(1)

3	Akshay Nair, Rashmin Gandhi, Sundaram Natarajan (2020)	Across India	1260	Online Survey	Although emergencies such as injuries and other conditions that qualified for emergent treatment based on the clinician's judgement remained the most common procedures conducted in the Covid situation, it was important to note that non-emergent cases in the OPD were fully shut down during the full lockdown that was held at the start.(3)
4	Rasmah S. Al-Harajin, Ahmed G. Elzubair Sara A. Al-Subaie, (2017)	Saudi Arabia	406	Cross sectional study	Six core goals for health care were outlined in a study by the Institute of Medicine (IOM): (a) safety, (b) efficiency, (c) patient-centric, (d) equal, (e) timeliness, and (f) effectiveness. Timeliness is the least studied and understood of these goals.(10)
5	Ravikant Patel, Hinaben R Patel (2016)	Valsad, Gujarat	135	Cross sectional observational study	Patient contentment, accessibility to treatment, health results, confidence, trust, desire to revisit, and hospital income are all affected by waiting times in hospital outpatient department. The time spent waiting in various Out Patient Departments (OPDs) and various investigations were reviewed. The

					accessibility of various hospital departments, as well as patient satisfaction with hospital procedures, hospital personnel behaviour, and treatment costs, were all investigated.(11)
6	Vaishali. K, Dr. S. N. Soundara Rajan (2017)	Chennai	50	Exploratory study	Employees must be away from the office for extended periods of time due to greater OPD wait times and it eventually effected the work life and personal life of the patient.(12)
7	Binita Goswami, Bhawna Singh, Ranjna Chawla, V. K. Gupta, V. Mallika (2009)	Delhi	-	-	The most consistent conclusion regarding the consultation time was despite significant variations in consultation time, certain features of clinicians' behaviour remained intact.(13)
8	Greg Irving, Ana Luisa Neves, Hajira Dambha- Miller, Ai Oishi, Hiroko Tagashira, Anistasiya Verho, John Holden	67 countries across the world	179 studies from 111 publicat ions coverin g 28 570 712	Systematic review	The WHO and the International Network for the Rational Utilize of Medications (INRUD) use average consultation length as a quality measure to promote the safe and cost-effective use of drugs throughout the world.(14)

			consultations		
9	Ahmad BA, Khairatul K, Farnaza A (2017)	Gombak, Malaysia	756	Universal sampling method	There is a negative relation between patient satisfaction and waiting time, according to numerous researches. As it is a measure of organisation's performance, it has become a key source of worry for hospital administrators and authorities. The key aspects that determine patient and consumer satisfaction are waiting time and consultation time.(15)
10	Subhashchandra Daga, Achla Daga (2013)	Maharashtra	2204	Case control study	Shorter consultation times are a significant problem in healthcare; approximately half of the global population seems to have a consultation time of less than 5 minutes which continues to decrease(16)
11	S M Campbell, M Hann, J Hacker, C Burns, D Oliver, A Thapar, N Mead, D Gelb Safran, M O Roland (2001)	60 practices in England	12000	Observational study	Unless the focus is primarily on the identification and care of gross illness, little can be accomplished in less than 5 minutes.(17)

12	Shyamkumar Sriram*, Rakchanok Noochpoung (2018)	Nellore, India	830	-	Waiting time in clinics and hospitals is a significant issue that contributes to patient discontent and pain. This problem appears to exist all around the globe.(18)
13	Surg Lt Cdr Athar Mohd, Brig Abhijit Chakravarty (2013)	India	120	-	Patient satisfaction is a multifaceted term and a subjective phenomenon related to perceived requirements, expectations, and treatment experience.(19)
14	Raman Sharma, Meenakshi Sharma, R.K. Sharma (2009)	Chandigarh India	1278	Cross sectional study	From the release of the 1983 NHS Management Inquiry and its demand for the collection of user experience, consumer satisfaction with healthcare has received significant acceptance as a measure of quality.(20)
15	Nandita Mehrotra (2016)	Bangalore, India	260	Survey	It is necessary to understand the patient flow within the facility and the different elements that influence it in order to analyse the patient turnaround time in the outpatient department. Patient turnaround time can be shortened by increasing the efficiency of medical and non-medical processes performed during patients' hospital appointments.(21)

Chapter 4: Methodology

Study Design: Descriptive cross-sectional study was conducted to identify and analyse the Out-Patient Department (OPD) indicators.

Study Type: Quantitative study

Study Setting: The study was conducted in the Out-Patient Department (OPD) of Jaslok Hospital and Research Centre, Mumbai.

Jaslok Hospital is a 365 bedded private, tertiary, multi-speciality, NABH accredited hospital which was established in late 1960's. Out of total 365 beds, 75 are ICU beds. The hospital has around 265 consultants with 140 completely trained and enthusiastic resident doctors. Around 35 well established specialties are available at Jaslok Hospital, with more on the way. The departments are outfitted with cutting-edge technology and staffed by highly qualified and motivated personnel, many of whom are currently involved in training programmes. Jaslok is currently a full-fledged educational institution, offering postgraduate courses and a nursing school with 22 specialisations approved by the National Board of Examination. Department of Anaesthesiology, Imaging & Interventional Radiology department including Conventional Radiology, CT scan, MRI section, and Mammography are among the well-developed specialties and services provided at Jaslok Hospital & Research Centre. Jaslok Hospital attracts patients not only from Mumbai but also from all other parts of Maharashtra, other states and even from abroad.

Hospital's mission is to build Jaslok Hospital as India's most prestigious medical facility and offering the patient treatment of the best standard; fostering and achieving medical and research expertise; and donating to mankind regardless of caste, ethnicity, or religious affiliation.

Hospital's vision is to offer state-of-the-art medical treatment with care, compassion and respect and eventually to become the choice for patients, clinicians and other staff.(22)

Study Duration: Duration of 3 months starting from 1st April 2021 to 30th June 2021

Study Population and size: Records of the patient's and doctor's visiting the OPD was taken by simple random sampling. Previous year's data i.e. the data of April, May and June 2019 was collected from the records.

For TAT and consultation time, around 152 samples were selected. Following the consultation with the doctor, the respondents, i.e. patients or their attendants, were provided a pre-designed structured questionnaire as exit interviews. For the patient satisfaction survey, around 250 samples were randomly selected out of which 196 samples filled the questionnaire.

For waiting time, 866 patient sample were taken for a period of 3 months for 2021.

Inclusion criteria: Data was taken for April, May and June 2019 and 2021 for making comparison of OPD services and indicators before and during COVID-19.

Exclusion criteria: Data for the year 2020 was excluded as due to the initial period of COVID-19 the hospital OPD was not functional.

Data Analysis: Analysis of the data was done using Microsoft Office Excel 2013 software.

Chapter 5: Results

The study on the Out-Patient Department (OPD) of Jaslok Hospital was conducted during April, May and June 2021. Overall operations management observation was done and various indicators like total OPD numbers, waiting time, turn-around time, consultation time, and patient satisfaction analysis through feedback was observed and noted. A comparison was done with the same indicators during April, May and June 2019 to get an idea of how the things were before COVID-19 and what impact the pandemic and lockdown had on overall operations management and on the indicators in 2021.

OPD Numbers

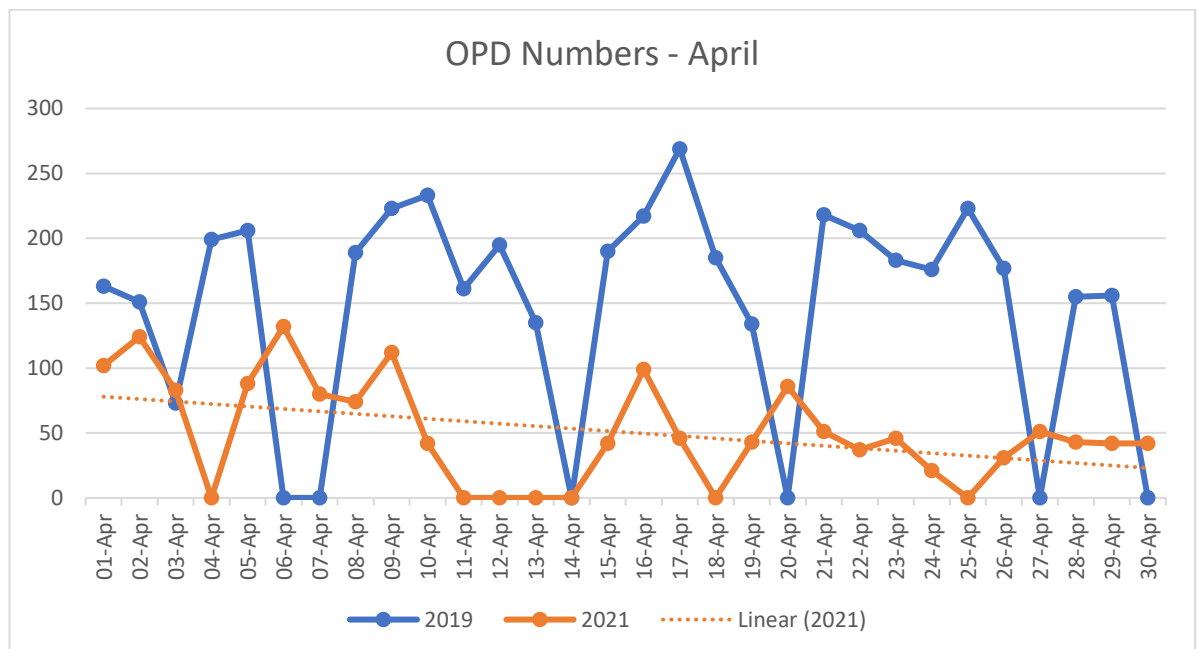


Figure 3: Daily OPD Numbers of April 2019 and 2021

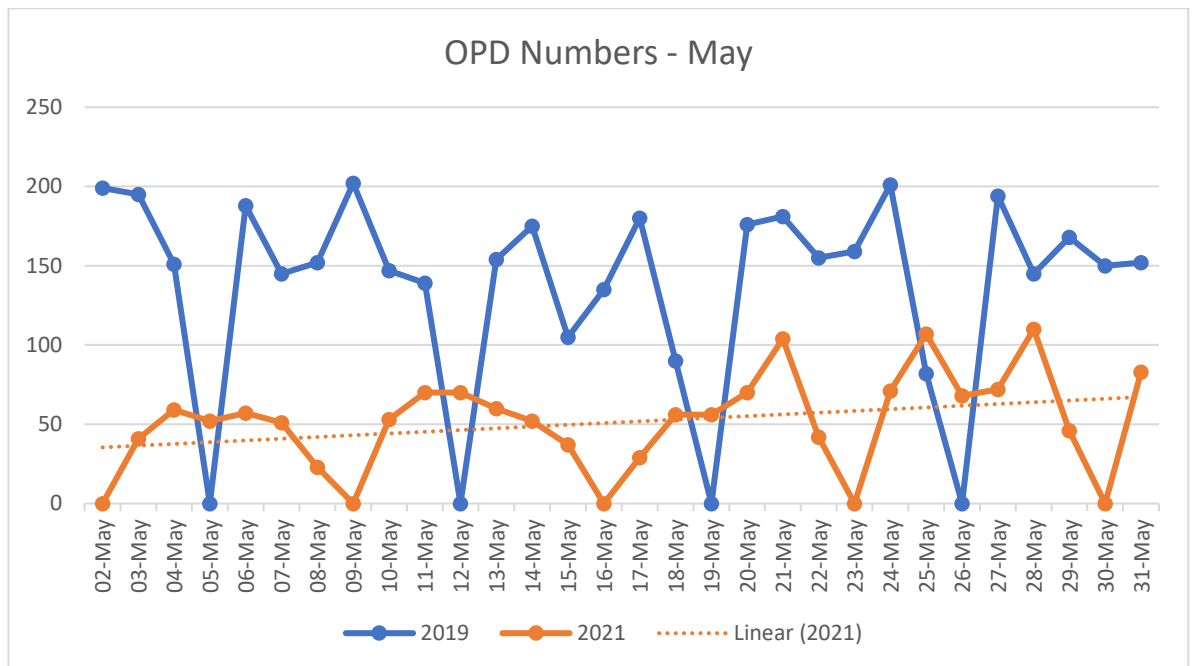


Figure 4: Daily OPD Numbers of May 2019 and 2021

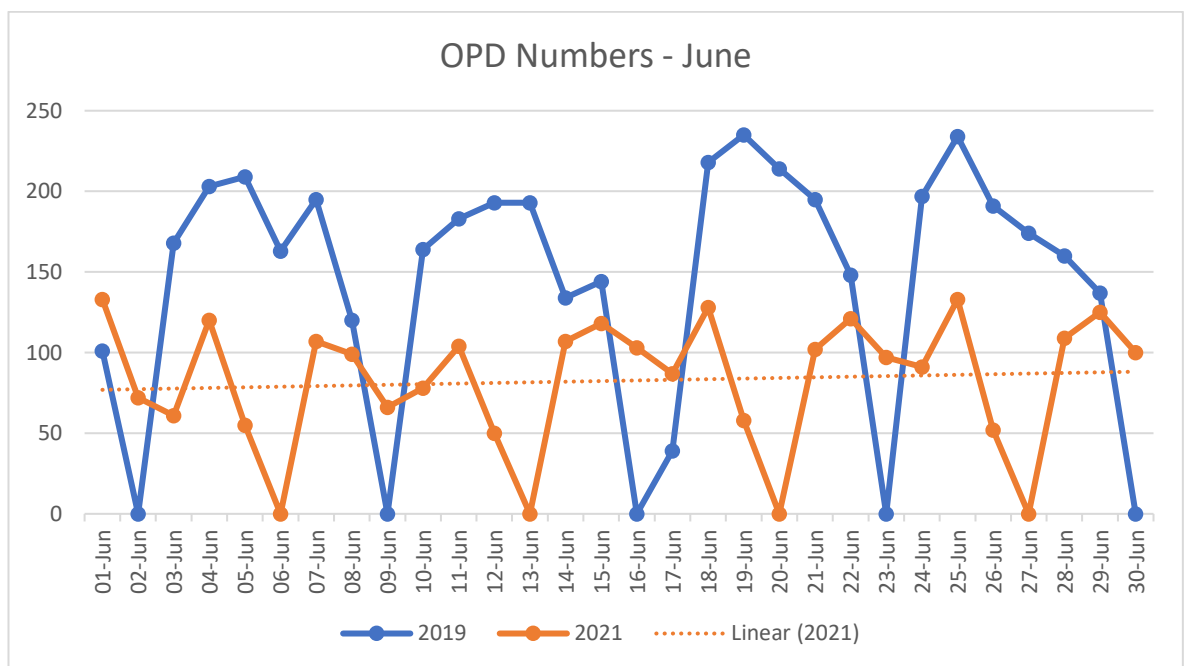


Figure 5: Daily OPD Numbers of June 2019 and 2021

As seen above, there is a change in the OPD numbers for April, May and June 2021 due to COVID-19 lockdown. It can be seen in these graphs of OPD numbers that in comparison to 2019, the OPD numbers have reduced a lot in 2021. In April 2019, the OPD number was 4417 and in April 2021, it was 1517. For May 2019, OPD number was 4120 and for May 2021 it was 1539. For June 2019, OPD number was at 4312 and for

June 2021, it was 2476. It was seen a drop of 56.95% for OPD numbers of the Hospital during COVID-19 in 2021 as compared to year 2019 (pre-Covid).

OPD Waiting Time

Waiting time was calculated by noting the arrival time of the patient at the counter and the time at which the doctor's consultation was done. Formula was applied and the average waiting time per day and for the month was calculated. It was noted that the average waiting time for the month of April 2019 was 26.2 minutes and for April 2021 was 29.1 minutes. For May 2019, it was 29.5 minutes and for May 2021, it was 36.4 minutes. Waiting time was 28.3 minutes for June 2019 and 30.8 minutes for June 2021. Taking the average for 2019, waiting time stands at 28 minutes and for 2021, it is 32.1 minutes.

	2019	2021
April	26.2	29.1
May	29.5	36.4
June	28.3	30.8
Average (in minutes)	28	32.1

Table 2: OPD Waiting Time (average)

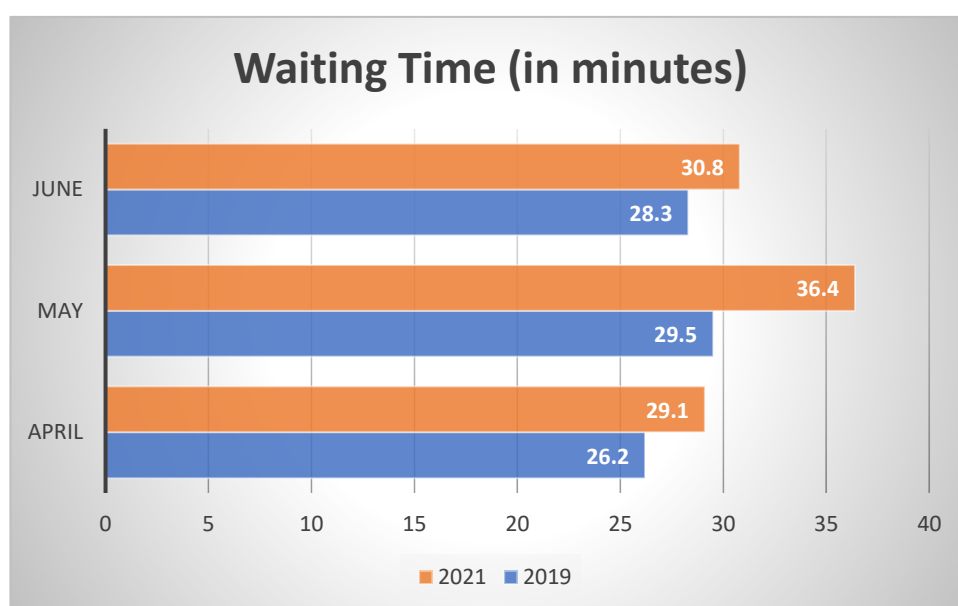


Figure 6: OPD Waiting Time (in minutes)

Date	2019			2021		
	April	May	June	April	May	June
1	26.6		9.4	34.2		59.6
2	38.1	26.7		36.6		39.5
3	40.4	53.6	19.0	10.0	18.5	25.0
4	54.5	11.5	37.0		40.4	79.4
5	42.5		16.9	36.5	56.0	27.5
6	16.5	20.0	21.7	50.4	38.8	
7		50.3	47.4	28.9	39.0	21.0
8	20.7	12.8	15.5	10.7	8.3	33.1
9	11.4	30.9		30.6		21.0
10	38.6	33.6	30.6	24.4	20.0	21.7
11	24.7	10.6	46.2		65.9	43.8
12	41.5		30.9	25.7	21.3	12.1
13	9.1	23.6	20.0		52.5	
14		29.6	57.0		28.5	23.2
15	15.0	18.2	10.4	40.0	28.3	48.8
16	19.1	23.8		24.0		34.6
17	20.4	39.7	16.8	15.6	19.4	18.2
18	26.3	8.0	54.1		41.7	22.5
19	35.8		26.3	23.9	41.8	7.5
20	7.9	34.7	17.0	52.7	28.6	
21		47.4	39.2	16.0	51.4	15.4
22	15.0	29.1	9.4	31.9	21.4	43.8
23	28.9	20.0		25.6		41.8
24	16.3	45.0	13.9	22.5	28.3	23.3
25	23.2	11.2	37.8		62.9	49.6
26	32.0		19.7	15.0	44.6	7.9
27	7.5	26.7	24.1	35.0	25.3	
28		45.3	42.5	32.5	54.4	23.2
29	22.1	20.0	8.8	32.2	24.0	59.8
30	36.6	19.0		17.5		10.4
31		42.8			32.5	
AVG (IN MINUTES)	26.2	29.5	28.3	29.1	36.4	30.8

Table 3: OPD Waiting Time (Daily)

Consultation Time

Consultation time is the time that the patient spends with the doctor/consultant for reviewing a patient's medical history, examination of the patient and making recommendation for care and treatment.

After studying the consultation time through manually calculating it at the Jaslok Hospital's OPD for around 152 patients, it was found that the average consultation time comes at 7.5 minutes. It was calculated by applying the formula where subtracting the time when the patient is seen by the doctor from the time he/she exits the consultation room.

Out of total 152 patient's data studied for consultation time, 58 patients had consultation time of 5 or less than 5 minutes, 56 patients had consultation of 6 to 10 minutes, 24 patients had consultation time of 11 to 15 minutes, 11 patients had consultation time of 16 to 20 minutes and 3 patients had consultation time of more than 21 minutes.

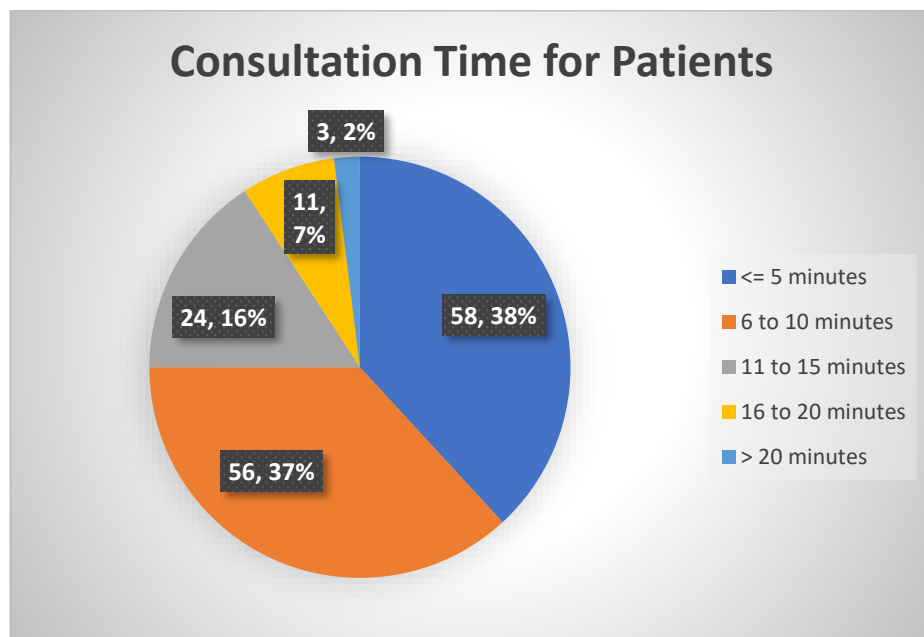


Figure 7: Consultation Time average

Turn Around Time (TAT)

TAT is the time duration of a process right from its start till its completion. Some 152 patient's data was randomly collected to understand the total TAT from the time they enter the OPD till the time they leave. Taking patient's details randomly, the average TAT came to 1 hour 20 minutes. This duration includes all the processes right from entering the hospital, screening of the patients, registration process, billing process, waiting time, consultation time, usage of other services like pharmacy, laboratory, radiology and till leaving the hospital.

Out of 152 patients, 70 patients had a TAT of 1 hour or less, 51 patients had TAT between 1 and 2 hours, 16 patients had TAT of 2 to 3 hours, 7 patients had 3 to 4 hours, 5 patients had TAT between 4 to 5 hours and 3 patients had TAT of more than 5 hours.

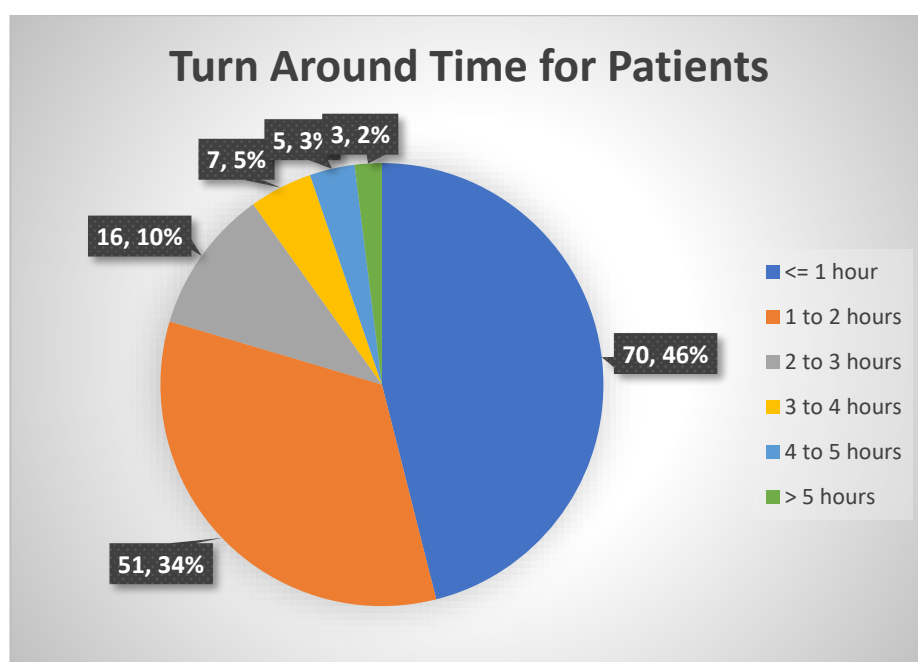


Figure 8: TAT average

Patient Satisfaction through Feedback Analysis

A questionnaire was made and patients were asked to fill that form that had questions related to the general condition of the OPD (infrastructure wise), administrative procedures, receptionist's attitude and behaviour, waiting time, consultation time, doctor's attitude and behaviour, consultation, revisit to the hospital and recommendation to others to use the hospital. (As the questionnaire was made and shared, it was done only for present duration i.e. April, May, June 2021 and not for 2019)

Variable	n	%
Gender		
Male	112	57.2%
Female	84	42.8%
Age (in years)		
<30	45	22.9%
31 – 60	89	45.4%
>60	62	31.6%
Visit		
First	152	77.5%
Follow-up	44	22.5%

Table 4: Demographic profile of patients attending the OPD

This questionnaire was shared with around 250 patients during the period of 3 months – April, May, June 2021. Out of 250, 196 responses were obtained from the patients and their relatives.

Out of 196 respondents, 57.2% were males and 42.8% were females. Age wise, 22.9% patients' age was 30 or below 30 years, 45.4% patients were in the age group of 31 to 60 years and 31.6% patients were above 60 years. 77.5% patients came for the first time at the hospital whereas 22.5% were follow up cases.

It was observed that one hundred and fifty-two (78%) found the ambiance of the hospital good. For n=196, 77% patients agreed that they were able to easily locate the OPD through clear visible signages. Around 77% patients found registration process to be smooth and easy and rest 23% said that it was satisfactory and it needed improvement. For billing process, almost one hundred and sixty-four patients (84%) felt that it was easy and good. One hundred and seventy-five people (89%) appreciated the responsiveness, pleasantness and behaviour of the reception staff. As seen above that the waiting time average stands at 30.05 minutes. 57.7% patients said that this waiting time is acceptable whereas 42.3% patients found it unacceptable and that this should be reduced. Talking about the doctor's consultation, one hundred and eighty-one patients (92.3%) felt that the doctor's attitude, behaviour, care and treatment given is excellent and one hundred and forty-four patients (73.5%) said that the consultation time given per patient is sufficient and adequate. For the pharmacy service experience, as one hundred and fifty-two people availed it (n=152), one hundred and thirty-seven patients (90.13%) found it to be good and rest fifteen felt that it was satisfactory and it needed improvement. One hundred and fifty-four persons (n=154) used investigative services such as radiology and laboratory, and one hundred and forty-four patients (93.5%) thought it was acceptable, while the remaining ten thought it was okay but required improvement. One hundred and seventy-eight patients (97.8%) would re-visit the hospital for future requirements and one hundred and fifty-nine (91.9%) patients said that they would recommend the hospital to their friends and family. Out of total 196 respondents, one hundred and seventy-three (88.26%) patients had a good overall OPD experience.

Question	n	%
General condition of the OPD (Ambiance) is good	152	78%
Easy to locate the OPD through various signages	151	77%
Smooth and easy registration process	151	77%
Smooth and easy billing process	164	84%
Responsiveness, pleasantness and behaviour of the reception staff	175	89%
Is waiting time acceptable?	113	57.7%
Excellent doctor's attitude, behaviour, care and treatment given	181	92.3%
Overall doctor consultation experience	182	92.9%
Adequate consultation time	144	73.5%
Pharmacy services	137	90.13%
Investigative services	144	93.5%
Would re-visit the hospital	178	97.8%
Recommend to family and friends	159	91.9%
Overall OPD experience	196	88.26

Table 5: The outcomes of the questionnaire on OPD experiences

Chapter 6: Discussions

The OPD process before and during COVID-19 had a small change where while entering the hospital the patient undergoes screening process. Before the COVID-19 situation, the patient had to go directly to the registration counter but now, as the patient enters, he/she has to get screened, don the PPE provided and then proceed to the registration counter. Due to COVID-19, there was a huge impact on the **OPD numbers** of the hospital. The daily numbers reduced drastically as people feared coming to the hospital and few doctors too stopped conducting the OPDs.

As the second wave of COVID-19 initiated in India, Maharashtra government ordered a lockdown from 15th April 2021 and thus the trend line declines on right side which indicates that the daily OPD number decreases. Eventually, as the COVID scenario started to become better, the lockdown restrictions were lowered and people started visiting the hospital OPD again and thus, in May 2021, the cases increased as compared to April 2021.

Long **waiting times** are seen by patients as an obstacle to receiving treatment.

excessively may be stressful for both the patient and the physician. Waiting time, more

than knowledge or expertise, is a concrete part of practise that people will use to rate health professionals.(11) The waiting time average stands at 28 minutes for 2019 and 32.1 minutes for 2021. For 2021, 57.7% patients said that this waiting time is acceptable whereas 42.3% patients found it unacceptable and that this should be reduced.

The length of the waiting period varies by nation, and even within a country, from centre to centre. In both developed and developing nations, lengthy waiting times have been observed. It's one of the most aggravating aspects of the health-care delivery system. As a result, it's critical to reduce out-of-hospital patient wait times.(11) In Nellore, India, the average waiting time was 20.3 minutes in government hospitals, 15.5 minutes in private hospitals, and 39.71 minutes in voluntary hospitals.(18) In an Armed Forces Hospital in India, where the majority of the patients were members of the Armed Forces and were split by rank, the majority of Officers received service in under 30 minutes, but Junior Officers and Other Ranks had to wait up to an hour.(19)

When waiting is unavoidable, waiting rooms should be equipped with televisions, newspapers, magazines, and appropriate sanitary facilities to break up the monotony and create an environment where the patients can stay for that long duration.

It is suggested that there is a direct relationship with the **consultation time** and the patient satisfaction. Higher the consultation time, more is the satisfaction among the patients and vice versa.

Short consultation times are a public health problem because they lead to polypharmacy as patients take self-medications, antibiotic overuse, and poor patient communication.(13) In India, the average consultation time is nearly 2.3 minutes.(14) As seen in this study, the consultation time stand at 7.5 minutes. It is very much better as compared to India as a whole.

There was a link seen between lengthier consultation times and fewer hospital admissions. This is consistent with other studies that show that good primary care can minimise hospitalizations for ambulatory sensitive diseases.(23)

It was found during the study at General Hospital near Pune, Maharashtra; during the OPD's operational hours (09:00–13:00), an average of 20 patients got consultations each day; and each appointment/consultation lasted around 12 minutes.(16)

The main causes which can be attributed to the long **Turn-Around Time** are the layout of the hospital OPD, unavailability of rooms, increased number of walk-in patients, patients not coming on given time, unavailability of doctors, doctors coming late due to rounds, emergencies, teaching procedure for residents by attendings, communication gaps

which may have interruptions, incomplete patient details, case files and miscommunication among staff members, unavailability of staff and lack of teamwork.

Patient Satisfaction is one of the most important variables in determining the quality of service in a health care institution.(24) Customer experiences and happiness are critical in the health-care sector, as they are in other service-oriented industries. It becomes an essential indirect marketing strategy since it directly affects the quality of the 'product,' i.e. health care.

Patient adherence is crucial for a successful treatment outcome, and because clinical outcomes are always attributed to the practitioner and never to the patient, it is even more important.(24) The relevance of the "perception gap," or the difference between patients' views of treatment and their needs and expectations, is stressed by McNealy. Patients will be happy and satisfied if this gap does not exist and performance levels are already at satisfaction or "delight" levels.(19) At PGIMER, Chandigarh, the average time spent registering by patients was 33.20 minutes.

At virtually all levels of health care institutions, overall satisfaction with doctor-patient professional and behavioural communication was greater than 80%. More than 80% of patients said they were happy with the basic facilities.(20)

Chapter 7: Conclusion

The COVID-19 epidemic will permanently alter our practise. Changes in patient management rules, such as appointment scheduling, active screening, patient healthcare declarations, accelerated consultation for unwell patients, and other waiting room procedures, might be permanent. Staff safety and environmental procedures to avoid the spread of droplets and fomite are also likely to alter. It's likely that new research could surface in the coming days that will affect COVID-19 preventative and treatment tactics. For the Indian community, as well as the worldwide healthcare fraternity at large, the illness and the limits in place to control its spread are challenges. However, in order for hospital OPDs to start serving society at large in an optimal and secure manner, regulatory organisations must provide clear standards to assist in the continuation of patient treatment without jeopardising patient safety, both their patients' and their own.

An attempt has been made to assess patient experience by examining at important indicators of medical services in a tertiary level organization's OPD, which revealed several issues which have to be addressed in order to improve the hospitals' quality of service even more. Infrastructure and architectural improvements are needed to improve

patient comfort, particularly at the entrance and reception. Certain enhancements to the waiting room are also required, such as making it more informational and pleasant. Despite the fact that patients are happy with the clinicians' healthcare services, clinicians must interact with patients efficiently in layman's terms.

As seen above, various indicators of the Out-patient Department (OPD) of Jaslok Hospital and Research Centre, Mumbai like OPD numbers, Waiting Time, Turn-Around Time (TAT), Consultation Time and Patient Satisfaction through Feedback Analysis have been studied by taking data from the OPD, and analysing the same. It was seen that during Covid-19, the OPD numbers has decreased significantly, waiting time has increased, TAT has increased, and over-all 88.26% patients found the overall OPD experience good.

TAT and waiting times have to be reduced and one of the main ways for the same will be achieved if the doctors come at the allotted time to the OPD. Other ways for the same include providing a comfortable and patient friendly registration and billing process, convey all necessary and important information to the patients at proper time through secure messaging system, and training of the staff members so that the process is done quickly and efficiently without errors.

OPD numbers are increasing again as the effect of COVID-19 has reduced. The numbers will rise as-and-when the COVID-19 surge will reduce. Alternate way is by arranging online consultations where the patient can consult the doctor at the comfort of his/her home. This was put into effect and around 85 consultations were carried online through various platforms like Zoom, WhatsApp video call during the period of 2 months i.e. May and June 2021.

COVID-19 has hampered the services provided in the OPD. During the initial period of the pandemic, the hospital Out-patient Department (OPD) was closed completely from April 2020 till June 2020 when the corona cases were found in India and were at the peak during the beginning. From July 2020, the OPD was started again at a slower pace with only a few doctors conducting the OPD and the number of patients was very less. Patients were hesitant to visit the hospital initially. Eventually the numbers increased but again during second wave of Covid-19, it reduced and again increased as the cases reduced.

Recommendations

- Providing a comfortable and patient friendly registration and billing process
- Conveying all necessary and important information to the patients at proper time through secure messaging system
- Training of the staff members so that the OPD process is done quickly and efficiently without errors

- Doctors should come at the allotted time to the OPD and this would eventually lead to reduce the waiting time and eventually TAT
- Increasing of OPD numbers can be done by arranging online consultations where the patient can consult the doctor at the comfort of his/her home
- Increase in Consultation Time can be done by training the doctors to provide complete information to the patients, solve all patient queries and help patients wherever required

References

1. طرق وستريغى تعليم اللغة العربية. زين الدين ر. No Title 2005.
2. Bharti L, Bassi R, Bhardwaj K, Kumar V. Study of Quality Indicators in Blood Transfusion Services in Tertiary Care Hospital of North India. 2020;19(2):61–7.
3. Balasopoulou A, Kokkinos P, Pagoulatos D, Plotas P, Makri OE, Georgakopoulos CD, et al. Symposium Recent advances and challenges in the management of retinoblastoma Globe - saving Treatments. BMC Ophthalmol [Internet]. 2017;17(1):1. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28331284><http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=PMC5354527><http://bmcpneumology.biomedcentral.com/articles/10.1186/1471-244X-11-49><http://bmcophthalmol.biomedcentral.com/articles/10.1186/s12886-017-0049-5>
4. Res M, Ruts C, Hospital CR, Sciences M, Committee IE, Crh-smims S. Prevalence of. 2018;(May):517–20.
5. Gupta R, Pal SK, Pandey G. A comprehensive analysis of COVID-19 outbreak situation in India. medRxiv. 2020;1–18.
6. India 27%. 2021;1–9.
7. Any C. BMC Covid-19 Response War Room Dashboard. 2021;
8. Hebbar PB, Sudha A, Dsouza V, Chilgod L, Amin A. Healthcare delivery in India amid the Covid-19 pandemic: Challenges and opportunities. Indian J Med Ethics. 2020;05(03):215–8.
9. Jaffrelot C. Private Healthcare in India: Boons and Banes. Inst MONTAIGNE [Internet]. 2020;1–8. Available from: <https://www.institutmontaigne.org/en/blog/private-healthcare-india-boons-and-banes>
10. Al-Harajin RS, Al-Subaie SA, Elzubair AG. The association between waiting time and patient satisfaction in outpatient clinics: Findings from a tertiary care hospital in Saudi Arabia. J Fam Community Med. 2019;26(1):17–22.
11. Patel R, Patel HR. A study on waiting time and out-patient satisfaction at Gujarat medical education research society hospital, Valsad, Gujarat, India. Int J Community Med Public Heal. 2017;4(3):857.
12. Vaishali K. a Study on Waiting Time in Various Hospital Departments and Recommendations To Decrease the Waiting Time. 2017;3(6):2017. Available from: www.ijariie.com
13. Goswami B, Singh B, Chawla R, Gupta VK, Mallika V. Turn Around Time (TAT)

- as a benchmark of laboratory performance. *Indian J Clin Biochem.* 2010;25(4):376–9.
14. Irving G, Neves AL, Dambha-Miller H, Oishi A, Tagashira H, Verho A, et al. International variations in primary care physician consultation time: A systematic review of 67 countries. *BMJ Open.* 2017;7(10).
 15. Azraii AB, Kamaruddin KN, Ariffin F. An assessment of patient waiting and consultation time in a primary healthcare clinic. *Malaysian Fam Physician* [Internet]. 2017;12(1):14–21. Available from: <http://e-mfp.org/wp-content/uploads/2017/04/original-article-2.pdf>
 16. Daga S, Daga A. Enhancing consultation time for primary paediatric care in the outpatient department. *Integr Healthc J.* 2020;2(1):e000012.
 17. Campbell SM, Hann M, Hacker J, Burns C, Oliver D, Thapar A, et al. Identifying predictors of high quality care in English general practice: Observational study. *Br Med J.* 2001;323(7316):784–7.
 18. Sriram S, Noochpoung R. Determinants of hospital waiting time for outpatient care in India: how demographic characteristics, hospital ownership, and ambulance arrival affect waiting tim. *Int J Community Med Public Heal.* 2018;5(7):2692.
 19. Mohd A, Chakravarty A. Patient satisfaction with services of the outpatient department. *Med J Armed Forces India.* 2014;70(3):237–42.
 20. Bergin E. Leadership in Health Services Article information : Leadership. 2009;
 21. DiFonzo N, Bordia P. Reproduced with permission of the copyright owner . Further reproduction prohibited without. *J Allergy Clin Immunol* [Internet]. 1998;130(2):556. Available from: <http://dx.doi.org/10.1016/j.jaci.2012.05.050>
 22. Hospital TJ. Testimonials Dinesh Patel. 2021;(July 1973):7–9.
 23. No Title (表示不可能) .
 24. Jawaid M, Ahmed N, Alam SN, Rizvi BH, Razzak HA. Patients experiences and satisfaction from Surgical Out Patient Department of a Tertiary care teaching hospital. *Pakistan J Med Sci.* 2009;25(3):439–42.

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