

# Survey on Post Covid Condition in India

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**Abstract:** The Covid-19 pandemic has sent shockwaves across the world which has led to health crisis and immense human suffering along with heavy loss of lives. Countries have suffered both economically and emotionally due to a number of challenges imposed by the pandemic. The social restrictions and lockdown regulations imposed by the government to protect from further spread of Corona Virus of India affected the social lifestyle of people significantly. By knowing the public perception of survey conducted to COVID-19 may foster improved knowledge towards the disease. In this survey, we identified the population at risk to these Virus and got their response and it was based on patient distribution in two categories: Gender Wise and Zone Wise in Ahmedabad City, COVID-19 Morbidity and Mortality, their Vaccination Status and Symptoms they had during the infection of COVID-19.

**Keywords:** COVID-19, Pandemic, impacts, survey, protection strategy

## INTRODUCTION

World Health Organization (WHO) declared in January 2022, coronavirus disease - COVID-19, to be a Public Health Emergency.

Later in March 2020, WHO made the assessment that COVID-19 can be characterized as a pandemic. This crisis had generated stress throughout the population, and it been described in this document. A series of messages were used in communications to support mental and psychosocial well-being.

Coronavirus are one from different viruses of the same family from which some cause common cold in people while others infect animals, including bats, camels and cattle.

Beginning SARS-CoV 2:

Detected 1<sup>st</sup> in Wuhan, China in December 2019 which originated in bats from where it spread into humans in an market which was a reason behind Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) got started.

## COVID-19 Outbreak

Nations were prepared for containment which included active surveillance, early detection, isolation, case contact tracing, management and prevention of further spread[1]. Isolation of COVID +ve people along with quarantine of contacted people are the main stay of outbreak containment [2].

## A Timeline on COVID-19 Outburst in India

The 1<sup>st</sup> case of Covid-19 in India was detected in a 20-year-old female at Kerala on January 27, 2020 and reported one-day history of dry cough and sore throat. She had returned from Wuhan, China due to the Covid-19 outbreak in China [3]. The government of Kerala declared coronavirus as a state calamity after 2 more cases which were reported in Kasaragod and Alappuzha districts. As a result, the government of India cancelled visas for Chinese & foreigners in light of the increasing deaths in China. On 10th march, around 50 covid-19 cases were reported in India as the infection doubled within just 4 days. India's 1<sup>st</sup> case of fatality was a 76-year-old man Karnataka. India banned entry of foreigners from 13<sup>th</sup> March – 15 April. The Prime Minister of India imposed a 14hr voluntary lockdown. A nationwide lockdown was imposed from March 25 to April 14, with essential services made available. The death toll in India crossed the 100-mark on April 6, in light of the increasing cases extension of lockdown was laid for further 21 days. 10,000 confirmed cases were recorded by 29<sup>th</sup> of April. By crossing May 19, total Covid-19 cases in India crossed 1 lakh. On June 12, India took over the UK to become the 4<sup>th</sup> worst Covid-19 hit country, with nearly 3 lakh cases. Loss of smell and taste were included as symptoms. On July 6, India overtook Russia to become the 3<sup>rd</sup> worst Covid country with 6.97 lakh cases. September 7, India took the 2<sup>nd</sup> spot in terms of confirmed infection with 41.13 lakh confirmed infections. The number of positive Covid cases crossed 1 million marks by September 17. On December 19, India's Covid-19 mark crossed 1 Crore. Bharat Biotech and Serum Institute of India started

working for vaccines. On January 16, India began one of the biggest global coronavirus programmes. On February 7, over 53 lakh people were vaccinated and India grabbed the 3<sup>rd</sup> spot in terms of most vaccinated. India crossed the 3.15 crore mark in number of administered vaccines by March 15.

India reported 46,951 cases in a single day, the highest spike. This marked the beginning of 2<sup>nd</sup> wave of Covid in India which was more fatal than the first wave. The shortage of oxygen cylinders, hospital beds, vaccines and other medical supplies prevailed until early July. The cases started decreasing in the late July due to the

constant efforts by the Government and Health Ministry of India. After gradual decrease in cases for several months, India began witnessing a slow increase in Covid 19 cases in January 2022. India just reported 2.38 lakh cases on 17 January 2022 [4].

COVID-19: Delta V/S Omicron Variant:

India recorded 1<sup>st</sup> case of the evolved Omicron variant on early December 2021 and by the end of December, India's Omicron tally crossed 1000 mark. Scientist revealed some differences in the new evolved Omicron Variant when they compared it with Delta [5].

DELTA VARIANT	OMICRON VARIANT
The symptoms last about 10 days.	The symptoms last around 4-5 days.
High fever observed i.e., 101-103°F.	Low to moderate fever observed within the range of 99.5°-100°F.
Symptoms include loss of smell and taste.	Symptoms include nausea and dizziness.
The infection enters lungs within a couple of days.	No lung pneumonia or apparent damage reported so far.
During the time of delta variant, most people were unvaccinated.	Most people were vaccinated during the outburst of omicron variant.
The chance of reinfection was much less.	The chances of reinfection were very high.
Caused severe respiratory distress among patients.	Rarely caused respiratory distress among patients.
Nearly 10-14% people were hospitalized.	Less than 1% people were hospitalized.

TABLE 1- Difference between Delta Variant and Omicron Variant

Details about COVID-19:

Asymptomatic SARS-CoV-2 infection was recorded mainly during the 3<sup>rd</sup> wave of the pandemic. The number of patients who were truly asymptomatic throughout the period of contraction varies and is incompletely defined [6] and was not clear whether the number of individuals with asymptomatic infection advance to the clinical disease. Several asymptomatic people have been recorded with radiographic findings that are persistent with COVID-19 pneumonia [7]. The availability of constant virological testing for the SARS-CoV-2 and the advancement of trustable serologic assays for the virus has assisted in determining the actual prevalence of symptomatic and asymptomatic infection.

The guidelines issued by the government mentioned that 1 out of 3 people with COVID-19 didn't present any symptoms. Several studies suggest that this usually occurs in healthy & young age groups, mainly children [8]. Antibody testing assisted the government to interpret the actual number of people who contracted coronavirus unknowingly, without or with symptoms. Usually, it is not available on the NHS.

In addition to that, if a person resides in a home with people positive for COVID-19 and he/she does not have any symptoms, the person may be an asymptomatic case.

Several studies suggested that number of people remaining completely asymptomatic is slightly lower than first assumed, at about 1 in 5 individuals. Additionally, while the asymptomatic patients are less likely than those with symptoms to transmit the infection further, the risk still prevails [9]. And so, self-isolating for a period of 10-days from the last contact with a Covid-positive person is necessary. It affected the respiratory tract, mainly the large airways [10].

Patient Experience in 3<sup>rd</sup> Wave:

Along with the above-mentioned symptoms the patient also experienced tiredness, headaches and muscles aches [11]. The patients with mild infection are not likely to experience sore throat or running nose, but they do occur in a few cases. The patient did not even experience breathlessness in the case of mild infection. The patient's selfcare, cooking, drinking and eating are not affected. In addition to that, the appetite

is fairly normal. The symptoms last about 7-10 days. Majority (81%) of symptomatic COVID-19 positive cases were observed to be mild [12]. However, the patients with moderate severity can experience deterioration in their infection and health, in some cases, rapidly.

Symptoms appear generally after 2-14 days which range from mild to severe. Geriatrics and people with severe pre-existing medical conditions like heart/lung disease/diabetes seem to be at higher risk[13].

Common early symptom is dry cough in case of COVID infection. It can take 2–14 days for symptoms to appear whereas the average incubation period is approximately 5–6 days [14]. Based on the studies, hospital admission typically occurs from 7 days onwards. The Centres for Disease Control and Prevention (CDC) state that individuals with positive COVID-19 infection can experience a variety of symptoms, usually including dry cough and breathlessness.

They patients may also have a combination of at least two of the following symptoms:

- Fever
- Moderate to severe chills
- Body-aches
- Sore Throat
- Few experience loss of taste/smell
- Dry Cough
- Breathing Difficulties
- Fatigue

Doctors are to be considered at a temperature of 100.4°F or higher [15]. Usually, the individuals with SARS-CoV-2 infection can be categorised into the following classes based on the severity of infection. Criteria may differ based on clinical guidelines and clinical trials. In addition to that, the clinical status of infected individuals may change over time [16].

Asymptomatic / Pre symptomatic Infection: People who test positive for Covid-19 through nucleic acid amplification test [NAAT] or an antigen test but who had no symptoms that occur during the COVID-19 infection.

Mild infection: People with some of the symptoms and signs of COVID-19 infection (e.g., cough, fever, headache, sore throat, nausea, diarrhoea, malaise, muscle pain, vomiting, loss of smell and taste) but who

do not experience symptoms such as dyspnoea, shortness of breath, or abnormal chest imaging.

Moderate Illness: Those showing evidence of lower respiratory disease during clinical assessment and having an oxygen saturation (SpO<sub>2</sub>) ≥94% on room air at sea level.

Severe infection: People with SpO<sub>2</sub> < 94% at RT at sea level, a ratio of arterial partial pressure of oxygen to fraction of inspired oxygen (PaO<sub>2</sub>/FiO<sub>2</sub>) <300 mmHg, respiratory frequency >30 breaths/min and lung infiltrates >50%.

Critical Illness: Individuals with respiratory failure and/or multiple organ dysfunction.

#### PRELIMINARY PRECAUTIONS DURING TRANSMISSION STAGES

Quarantine and isolation:

Quarantine: Separation of individuals from those who are not yet exposed to COVID-19. Voluntary home quarantine of contacts of suspect/confirmed cases [17].

Isolation: Separation of individuals who are infected suspects or confirmed cases of COVID-19. All suspects kept in isolation in a designated facility till they are tested negative as per MoHFW's discharge policy. About 15% patients are likely to develop pneumonia, 5 % of whom requires ventilator management [18].

Some of the patients may progress to multi organ failure and hence critical care facility/ dialysis facility/ and Salvage therapy facility for managing the respiratory/renal complications/multi-organ failure shall be required respectively. Patients can be isolated in individual isolation rooms/negative pressure rooms. Minimum 1 metre distance needs to be maintained between adjacent beds and patients are supposed to wear a triple layer surgical mask [19].

Requirements for Isolation rooms:

- Face Shield to protect Eyes, Nose and Mouth
- Latex Single-Use Gloves for Clinical Care
- Surgical caps
- Particulate Respirators (N95, FFP2, Or Equivalent), Medical (Surgical or Procedure) Masks

Aprons / Plastic Aprons  
Alcohol-Based Hand Sanitizer  
Clean Single-Use Towels  
Sharps Containers  
Separate Disposal Bags for surgical and non-surgical items

Wearing & removing Personal Protective Equipment (PPE) in isolation ward:

Before entering isolation room/area: Perform hand hygiene with an alcohol-based hand rub. Ensures adequate placement of PPE item and prevent self-contamination and self-inoculation while using and taking off PPE.

Leaving the isolation room or area:

Follow below mentioned principles:

Highly contaminated PPE item to be removed on priority.

Sanitize hand with alcohol-based sanitizer immediately after removing gloves.

Replace mask.

Discard disposable items in a closed garbage bin.

## TRANSMISSION

Primary Stage of Transmission:

A recent study found that travellers from Dubai and the UK were the primary sources of COVID-19 in India and further found its way into many Indian states mainly due to international travellers. Dubai's Eigen vector was the most influential mode [20].

The few leading states in spread of infection in their local area are Gujarat, Rajasthan, Maharashtra, Kerala, Jammu and Kashmir, and Karnataka and some of them caused inter-state transfers too [21].

The spread during phase 1 was traced using the travelling history of the patients and was found that most of the transmissions were local. A significant increase was reported in Tamil Nādu, Delhi and Andhra Pradesh during the first phase of the nationwide lockdown, which spanned from March 25 to April 14 [22].

Super spreaders:

The largest contact tracing study shows that children are key to the spread of the novel corona virus. It was found that over 70% of COVID-19 infected patients in the country did not infect any of their contacts, while

8% of infected individuals accounted for 60% of observed new infections [23].

The study by contact-tracers in the states of Andhra Pradesh and Tamil Nadu, was the largest and most comprehensive analysis of epidemiology to date [24]. Which established that the transmission risk from an index case to a close contact ranged from 2.6% in the community to 9% in the household. Infection probabilities ranged from 4.7-10.7% for low-risk and high-risk contact types. [25]

The study in India found that both cases & deaths have been heavily concentrated in age group of 49-60 years and there was high prevalence of infection among children who were contacts of other cases around their own age. It was also noted contacts with same age were associated with the greatest infection risk which was strongest amongst children between 0-14 years of age, and adults older than 65years.

The proportion of deaths to the number of infected people, known as the case-fatality ratio (CFR), spanned 0.05% at ages 5-17 years to 16.6% stages exceeding 85.

Death ratio (Aug 2020):

With one co-morbidity: 63%

2/more health issues: 36%

Diabetic: 45%

Older than 75years age: 17.9%

## METHODOLOGY

Research methodology is a set of particular procedures utilized to determine, choose, process and analyse the data about a topic.

Two types of research strategies:

qualitative

quantitative.

Quantitative approach is concerned mainly with obtaining and examining numerical data or statistics in order to determine patterns, averages and relationship between relevant variables.

Qualitative research deals with data obtained from research instruments like surveys, questionnaires, semi structured interviews or secondary sources like journals, articles etc. It also enhances the reliability of the study and answers the questions like how and why. Also by which specific traits are monitored. It is important to note that qualitative approach usually deals with non-numerical data [28].

Insights of the survey conducted:

Looking at the situation of our country during the outbreak of COVID-19 we came up with the idea of analysing the effect this virus has brought to people's life and to understand it in a better way we conducted a survey of 1000 people. We made a questionnaire keeping in mind the basic aspects of people's life which have been affected by COVID-19 in one way or the other. Starting from the very basic questions like age, gender and were you found COVID-19 positive we have tried to cover the aspects in different zones of Ahmedabad city. We went to different zones and subzones and questioned the patient's questions regarding symptoms faced during the disease, how

they were diagnosed any co-morbidities faced by them during or post covid leading to complications. The final part of our survey concludes with asking the patients regarding their vaccination status.

Analysis of survey:

In our survey we targeted population of all age groups suffering from COVID-19.

Survey Conducted on 1000 individuals.

Questions were mainly bifurcated in two categories:

For those who were found positive

For those who remained uncontracted i.e., family members of the positive

Questionnaire:

Just when people thought that our country is going to be rid of virus in the nearest future, we came across the 3<sup>rd</sup> wave and our health care system shattered. In times like these many covid patients had to deal with emotional stress, financial stress and last but not the least, social stress. We prepared a set of questions for people who were found positive and won the battle of COVID-19 and/or were fighting with the virus.

The set of questions as enlisted under:

Gender F / M / O

How was your condition when you were detected with COVID-19?

Symptomatic b) Asymptomatic

If symptomatic, what were the symptoms that occurred?

Fever

Weight loss

Cough

Sore throat

Loss of smell

Breathlessness

Loss of appetite

Body ache

Fatigue

Headache

What is your age?

Are you consulting a private doctor?

Yes

No

Do you need any medication from AMC Sanjeevni?

a) Yes

b) No

Through which test did you confirm the COVID-19 infection?

a) CT scan

b) RTPCR

c)Rapid antigen

Were you hospitalized after testing positive for COVID-19?

a) Yes

b) No

Do you have any medical history?

Yes

No

If yes, select from the following options:

Diabetes

Hypertension

Thyroid

Cancer

Have you taken the COVID-19 vaccine?

- Yes No
- Currently which dose are being vaccinated?
- a) 1<sup>st</sup> Dose Booster Dose (if serious)
- 2<sup>nd</sup> Dose
- Which covid-19 vaccination have u preferred?
- Covishield by Serum institute of India
- Covaxin by BHARAT BIOTECH
- Sputnik by Paneca biotech
- Zycovid by Zydus Cadila

**RESULT**

**Gender wise Patient Distribution**

As we were being allotted to AMC Sanjeevni COVID-19 Duty, where we have o visit each and every reported patient’s home and confront them about their physical condition.

Thus, by this procedure we have collected the data from which we had plotted a graph as below

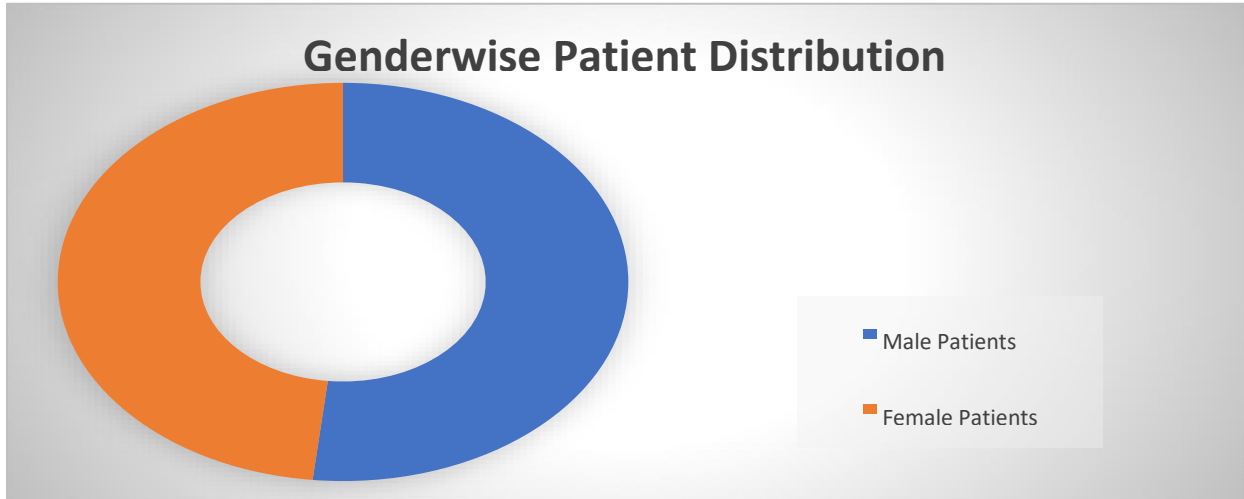


FIGURE 1 – Gender wise Patient Distribution

From the above represented graph, it is found that there were 517 Males & 483 Females out of 1000 Reported Patients.

Patient’s Gender	No. of Patient (out of 1000 responses)
Male Patient	517
Female Patient	483

TABLE 2 – Gender Wise Patient Distribution

**Zone Wise Patient Distribution**

As we were being allotted to the AMC Sanjeevni COVID-19 Duty, where different zones along with their sub-zones of the Ahmedabad City were distributed to each and every Team and each allotted team were supposed to perform their duty to their allotted zone & their sub-zone.

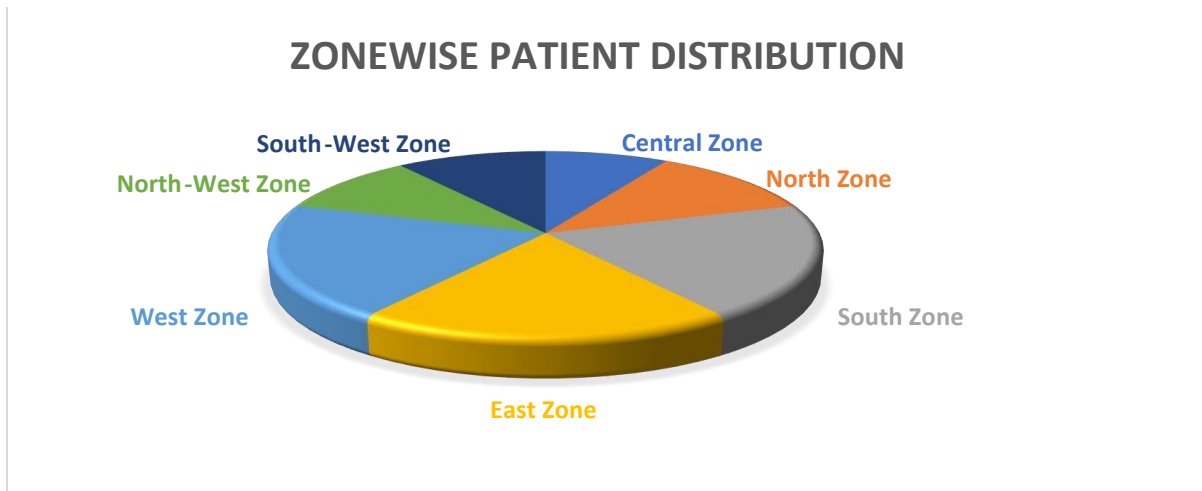


FIGURE 2 – Zone Wise Patient Distribution

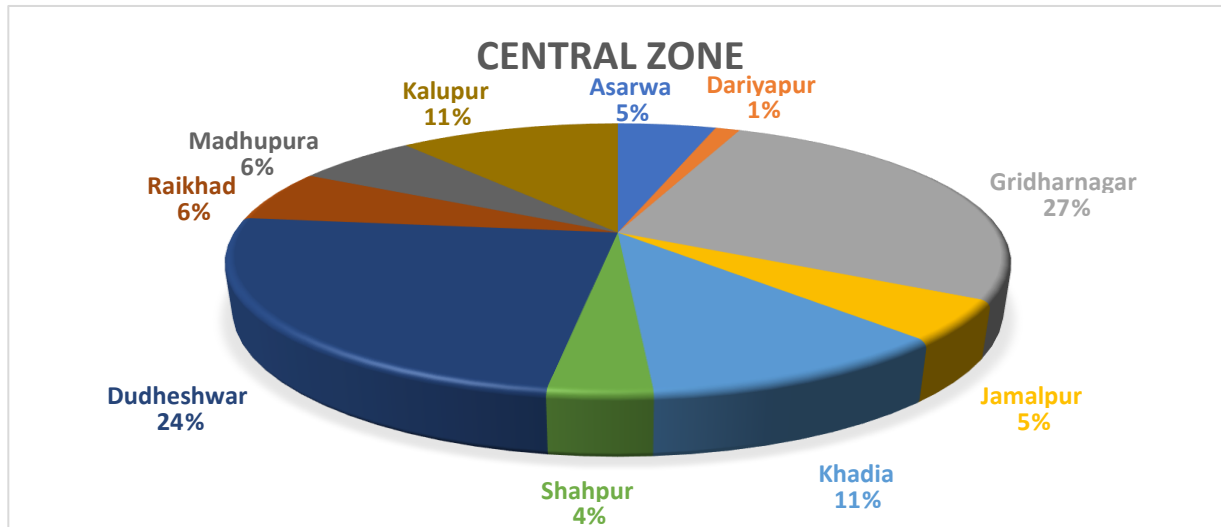
From the above represented graph, it was found that there were 7 Zones in which the COVID-19 Patients were Distributed.

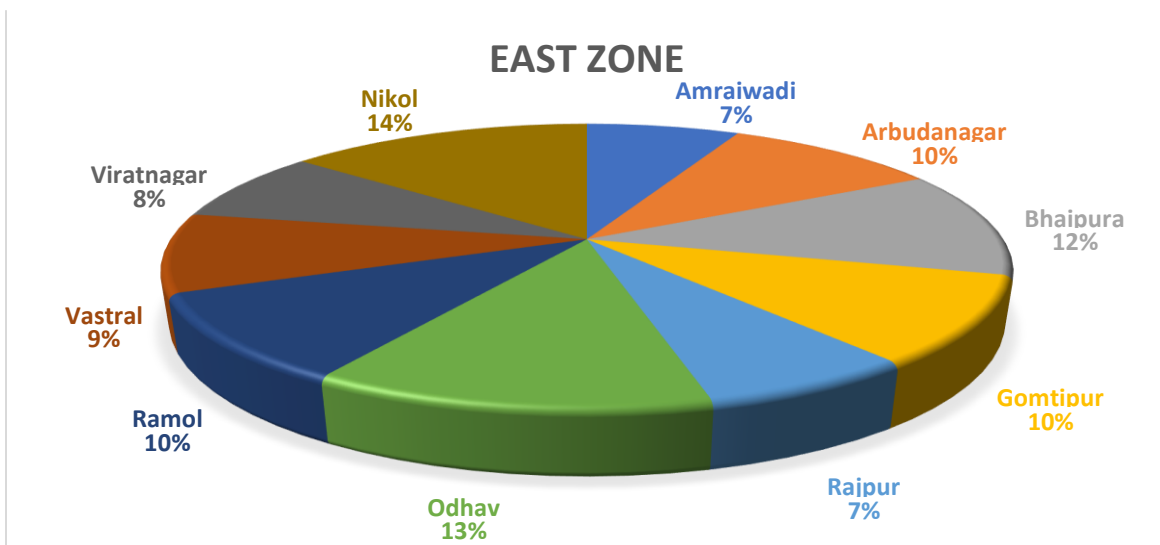
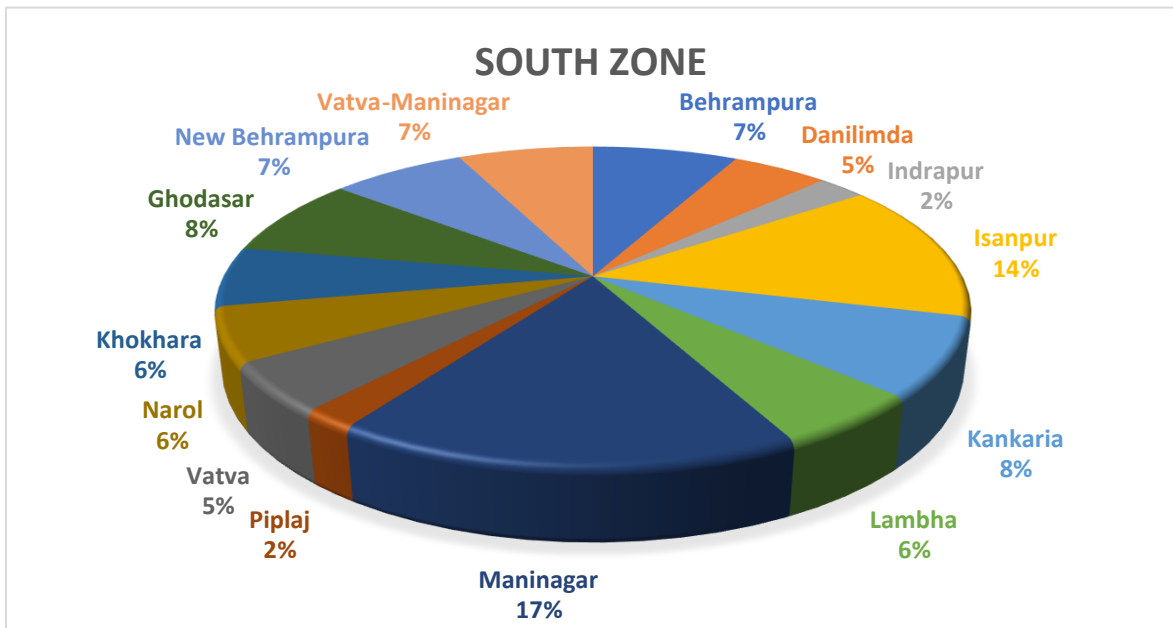
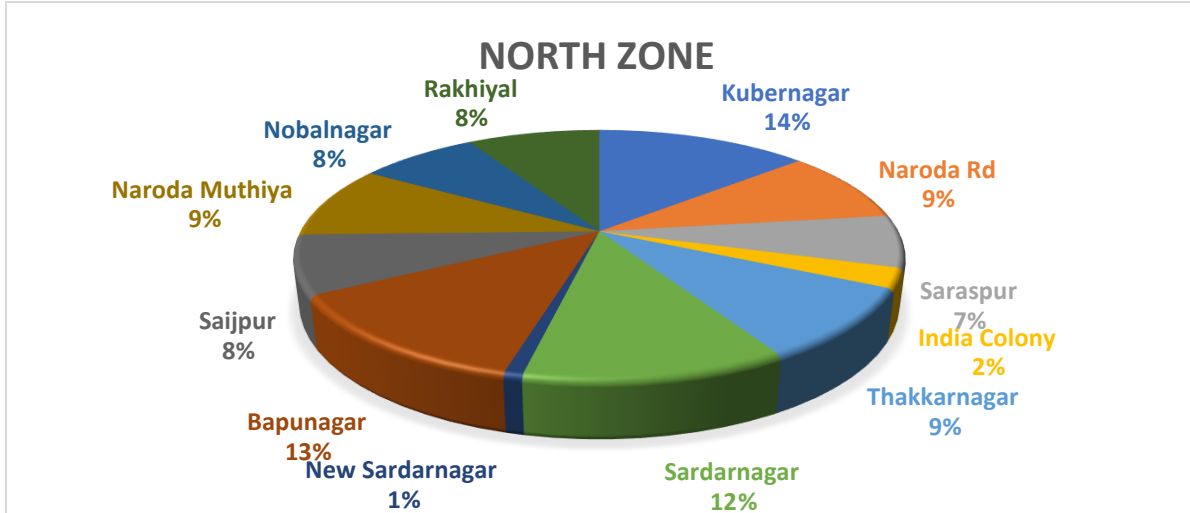
Allotted Zones	No. of Patients (out of 1000 responses)
Central Zone (CZ)	82
North Zone (NZ)	118
South Zone (SZ)	200
East Zone (EZ)	200
West Zone (WZ)	200
North-West Zone (NWZ)	100
South-West Zone (SWZ)	100

TABLE 3 – Zone Wise Patients

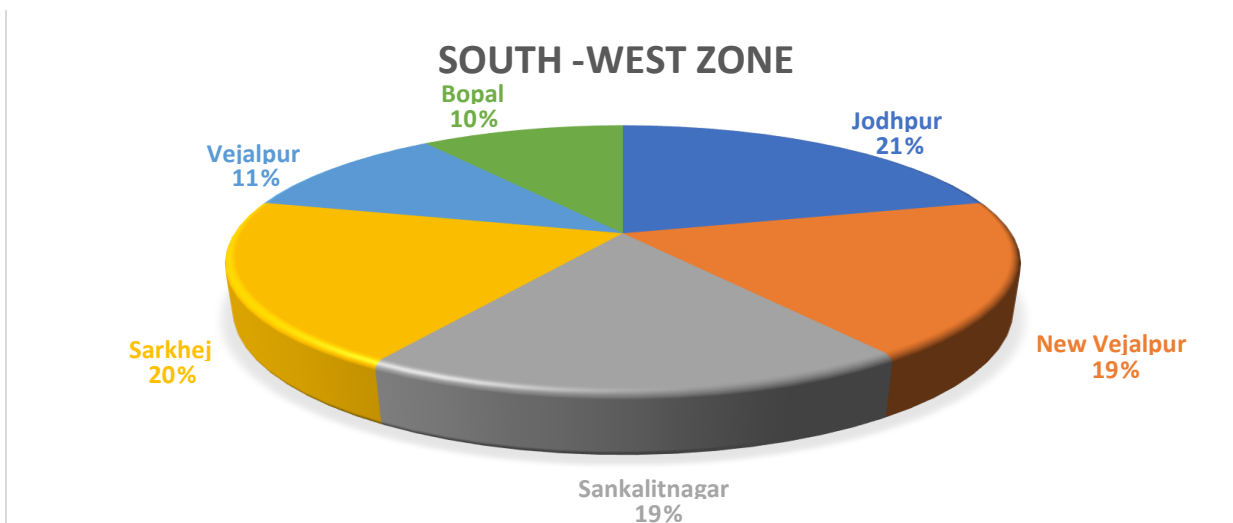
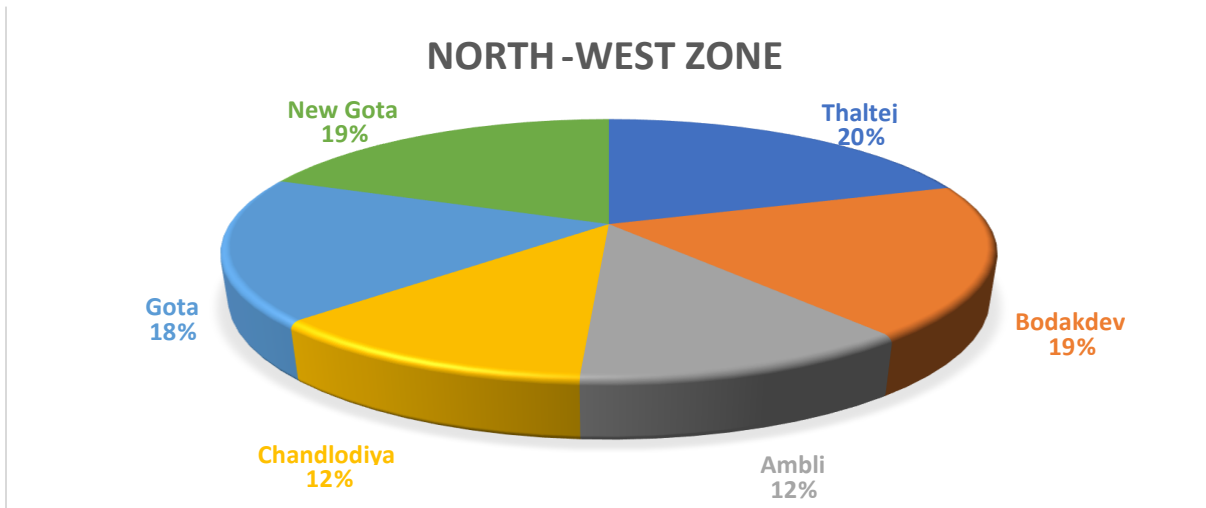
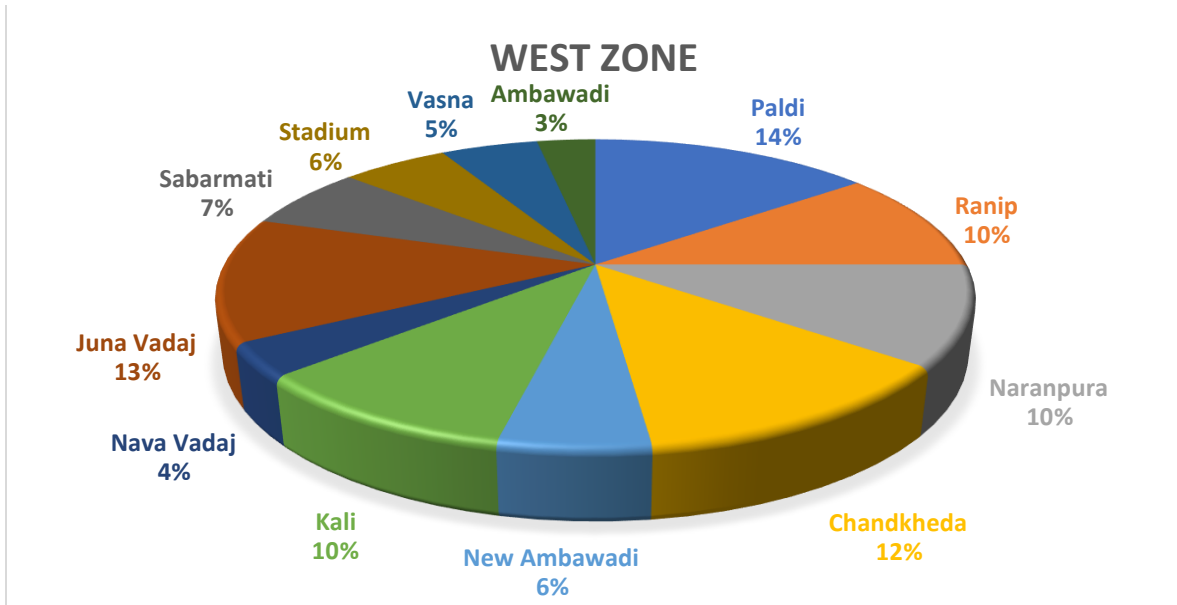
Sub-Zone Wise Patient Distribution

Following are the graphs of Sub-Zones along with the no. of patients which are being diagnosed with COVID-19 Infection: -



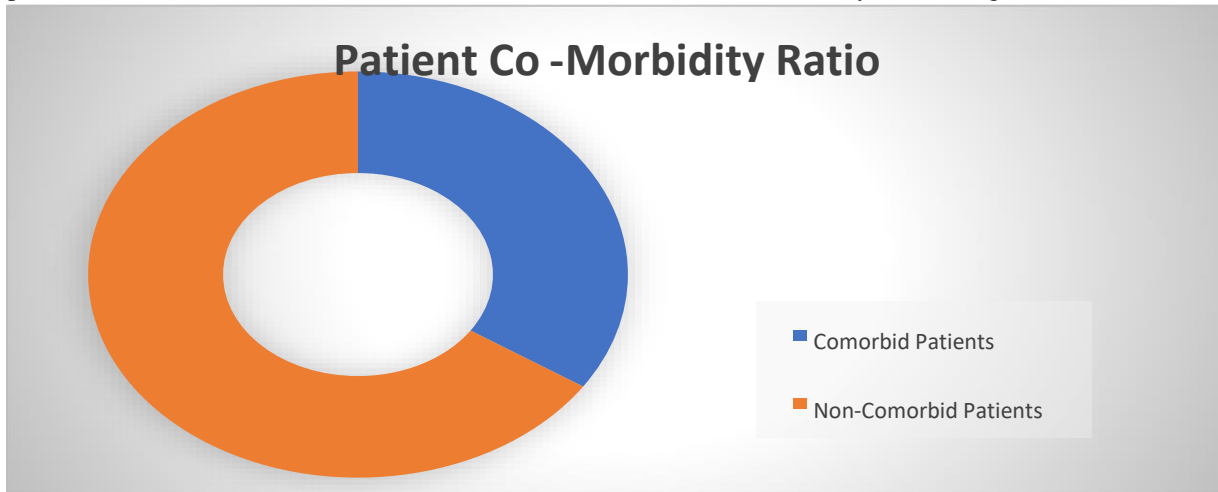






**Patient Co -Morbidity Ratio:**

As we were being allotted to AMC Sanjeevni COVID-19 Duty, here along with face-to-face confrontation with patients we were also instructed to ask them about the co-morbidities which they were facing.

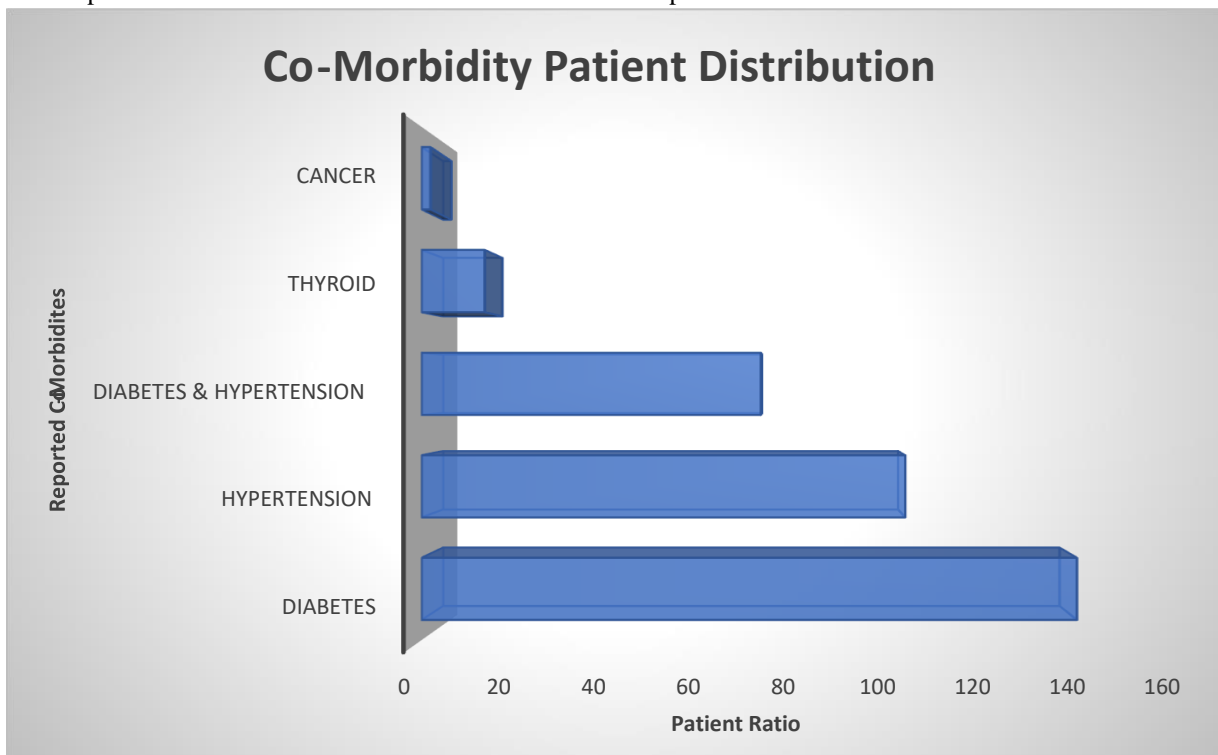


Co-Morbidity Ratio	No. of Patients (out of 1000 responses)
Co-Morbid Patients	343
Non-Comorbid Patients	657

TABLE 4 – Co-morbid Patients

**Co-Morbidity wise Patient Distribution**

➤ From the above represented graph, it was found that out of 1000 reported COVID-19 Positive Patients, 343 Patients were reported of some Co-Morbidities & 657 Patients were reported to be non-Comorbid.



**Co-Morbidity wise Patient Distribution**

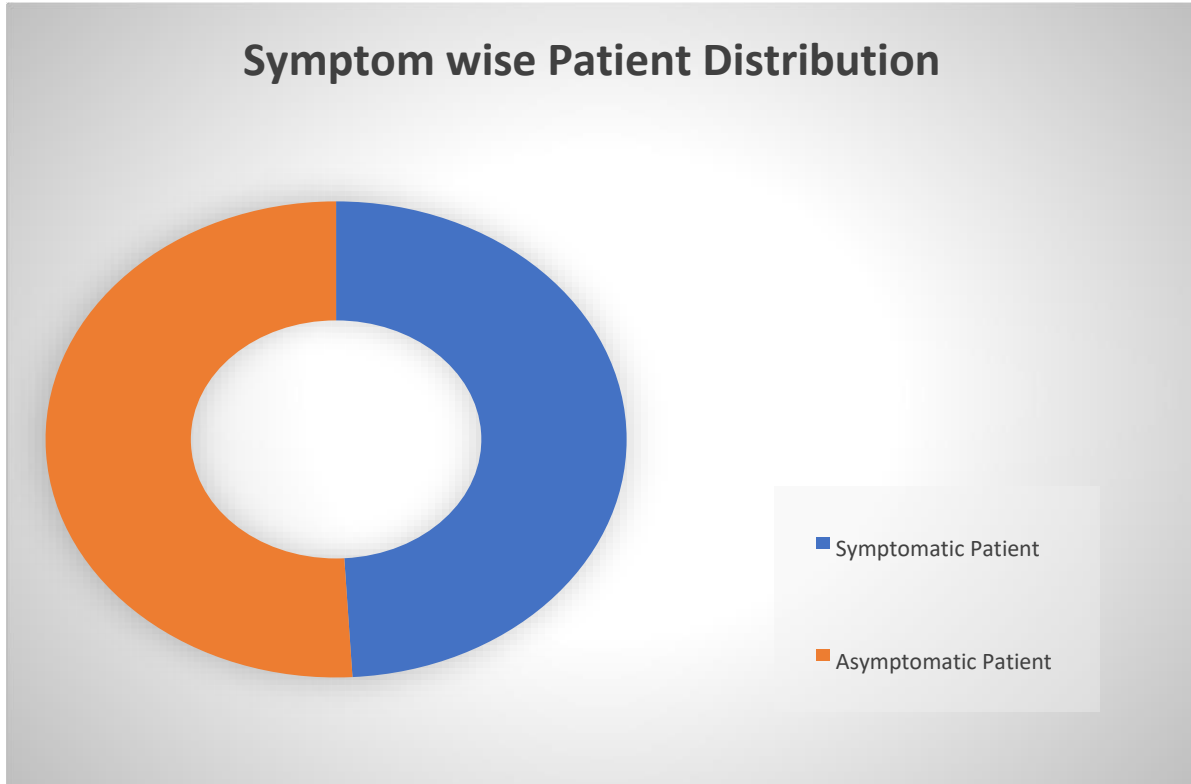
➤ From the above represented graph, it was found that out of 343 Co-Morbid Patients, there were:

No. of Co-Morbidities	No. of Patients (out of 1000 responses)
Diabetes	145
Hypertension	107
Thyroid	14
Cancer	2
Diabetes & Hypertension	75

TABLE 5 – Types of Co-morbid Patients

**Symptom Wise Patient Distribution**

As we were being allotted to AMC Sanjeevni COVID-19 Duty, here we had to confront the patients about their symptoms rather than co-morbidities encountered by them after being diagnosed with COVID-19 infection. We had listed out the symptoms which were reported mostly by the patients we had confronted.



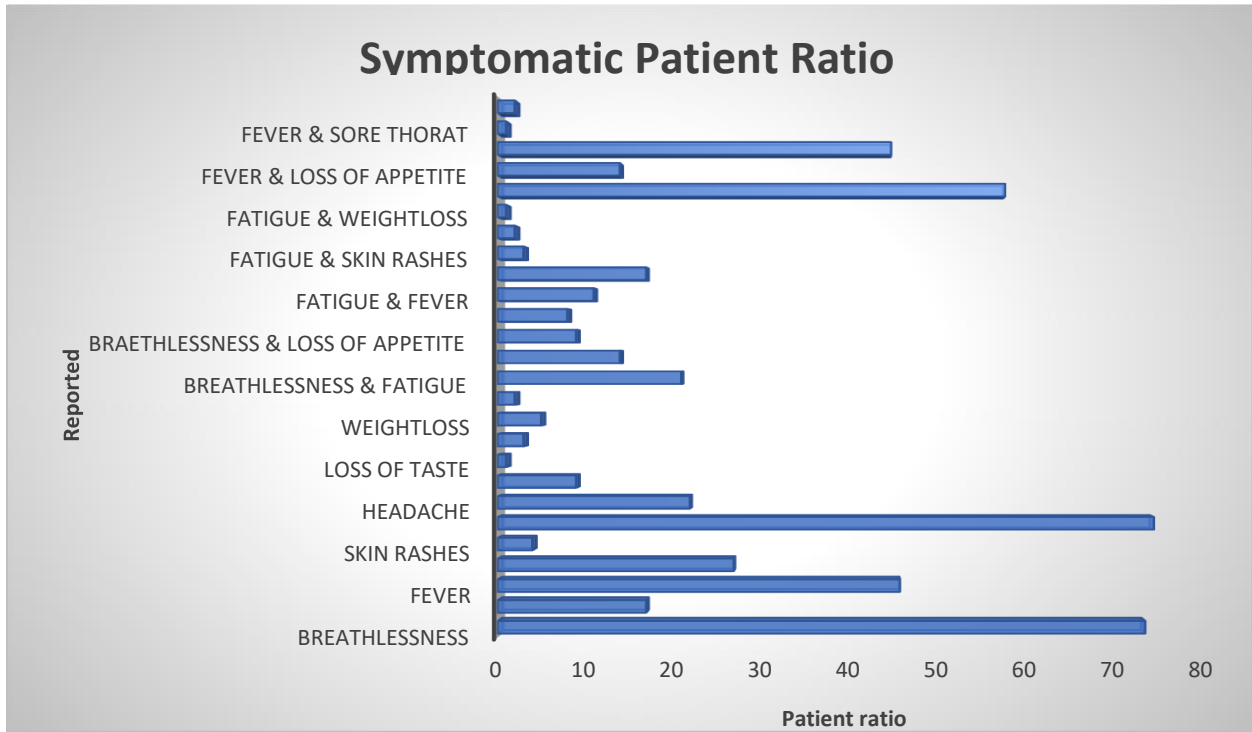
**Symptom Wise Patient Distribution**

From the above represented graph, it was found that out of 1000 reported COVID-19 Positive Patients 491 Patients were Symptomatic & Remaining 509 Patients were Asymptomatic.

Patient's Condition	No. of Patients (out of 1000 responses)
Symptomatic Patient	491
Asymptomatic Patients	509

TABLE 6 – Symptoms wise Patients

**Symptomatic Patient Ratio**



**Symptomatic Patient Ratio**

From the above represented graph, it was found that out of 491 Symptomatic Patients following Symptoms were reported:

Reported symptoms	No. Of Patients (out of 1000 responses)
Breathlessness	74
Fatigue	17
Fever	46
Cough	27
Skin rashes	4
Sore Throat	75
Headache	22
Loss of Appetite	9
Myalgia/Body ache	3
Loss of Taste	1
Weight loss	5
Weakness	2
Breathlessness & Fatigue	21
Breathlessness & Fever	14
Breathlessness & Loss of Appetite	9
Breathlessness & Skin Rashes	8
Fatigue & Fever	11
Fatigue & Loss of Appetite	17
Fatigue & Skin Rashes	3
Fatigue & Sore Throat	2
Fatigue & Weight loss	1
Fever & Headache	58
Fever & Loss of Appetite	14
Fever & Skin Rashes	45

Fever & Sore Throat	1
Loss of Appetite & Weight loss	2

TABLE 7 – Types of Symptoms

**Patient Vaccination Status**

As we were allotted to Sanjeevani AMC duty, here along with the patient’s physical & mental health condition, we were instructed to ask them about their vaccination status along with which vaccine being incorporated to them.



FIGURE 14 – Patient Vaccination status

From the above represented graph, we asked all the patients about whether they have taken the covid 19 vaccine or not and following result was obtained

Patient Vaccination Ratio	No of patients (out of 1000 responses)
Vaccinated patient	800
Unvaccinated Patients	94
Patient below 18 Years	106

TABLE 8 Patient Vaccination Status

**Patient Vaccination Ratio**

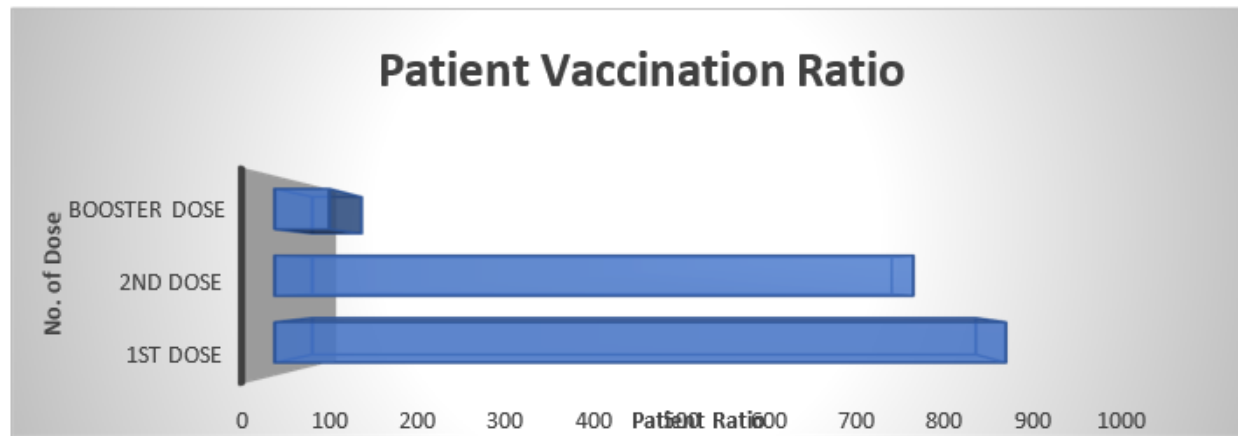
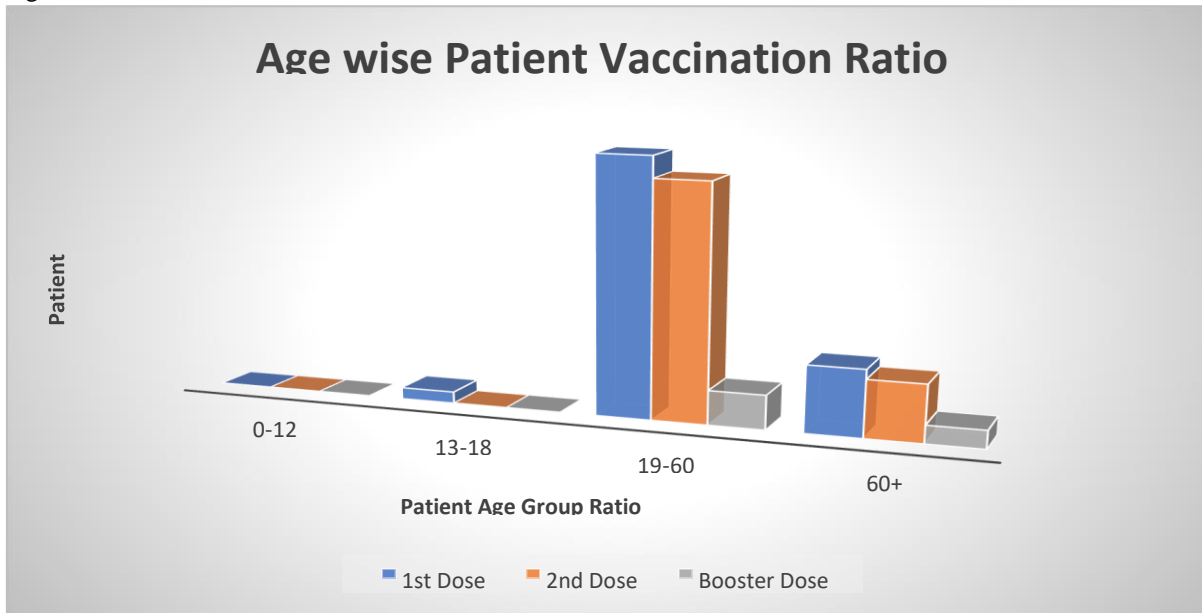


FIGURE 15 Patient Vaccination Ratio

Patient Vaccination Status	No. of Patient (out of 1000 responses)
1 <sup>st</sup> Dose	901
2 <sup>nd</sup> Dose	787
Booster Dose	67

TABLE 9 – No. of Doses Taken

Age wise Patient Vaccination Ratio

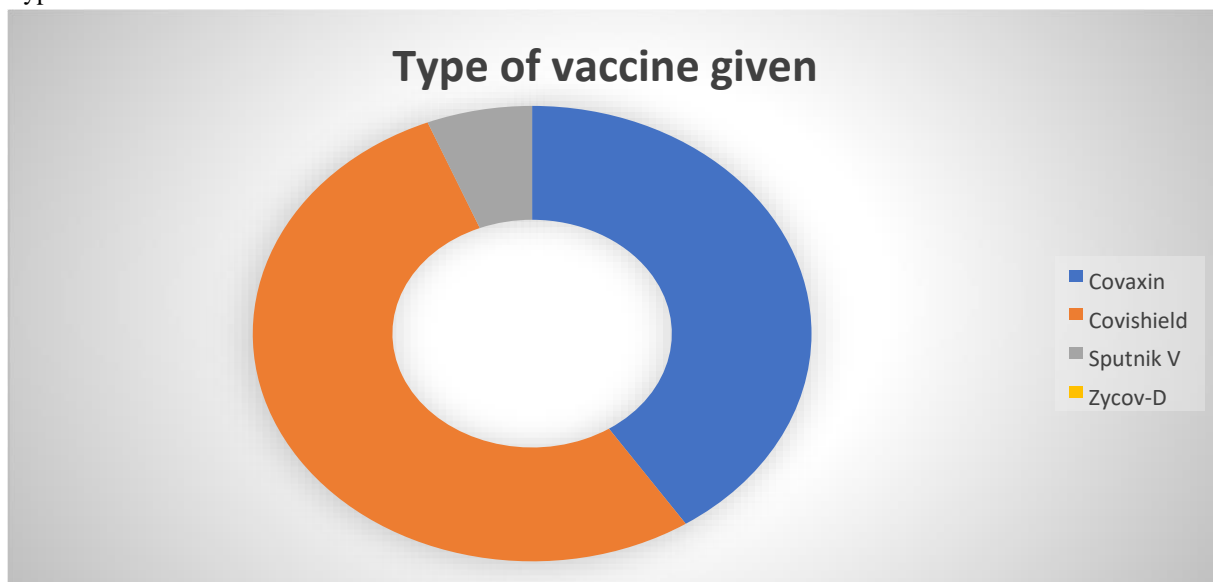


From the above represented graph, we had concluded that out of 1000 received survey responses, 901 Patients with age group of 13-60 have taken the 1<sup>st</sup> COVID vaccination Dose. 2<sup>nd</sup> COVID Vaccination Dose has been taken by 787 patients who were between 18 to 60 years of age. 67 Patients with the age group of 60/60+ have taken the Booster Dose of COVID Vaccination.

Patient Age Group	1 <sup>st</sup> Dose	2 <sup>nd</sup> Dose	Booster Dose
0 – 12	0	0	0
13 – 18	31	0	0
19 – 60	689	632	93
60 +	181	155	49

TABLE 10 – Age Wise Vaccination Status

Types of Vaccine Taken



From the above represented graph, we have concluded that from 1000 received Survey responses, 367 Patients were being vaccinated with Covaxin, 479 Patients were being vaccinated with Covishield, 55 Patients were being vaccinated with Sputnik-V & 0 Patients were being Vaccinated with Zycov-D.

Type of Vaccine Taken	No. of Patients (out of 1000 responses)
Covaxin	367
Covishield	479
Sputnik – V	55
Zycov – D	0

TABLE 11 – Types of Vaccine Taken

### CONCLUSION

Information gained about Omicron variant and actions taken over it will be critical for ensuring success in overcoming the pandemic. It may turn out to be a dark period that includes a global surge or it may be like a false alarm that easily vaporizes from memory.

Steps towards success:

Global vaccination: The Omicron variant highlights the need to vaccinate the world which requires looking beyond our individual nations.

Clear and transparent communication: This must take place frequently between the scientific community and the public and it should be carried out appropriately. Now, there is a need to prepare for the worst and hoping for the best.

Collaboration: The scientific community has already underwent many such collaborations in past 2 years, these must continue as new information emerges every day.

Key questions about the Omicron variant that need answers are:

What are the transmissibility and infectivity of this variant?

How effective is each of the vaccines in preventing or mitigating Omicron infection?

What are the severity, lethality and long-term sequelae of Omicron infection?

How efficacious are currently used therapies in Omicron treatment (monoclonal antibody infusion, for example)?

How much protection against Omicron infection and serious illness, including death, is conferred by prior COVID-19 infection?

Pandemics are reoccurring events that affect societies and sometimes can be threat to their existence.

This survey was conducted in the 3<sup>rd</sup> wave of the Covid 19 infection.

As it is clearly stated in the survey, Covid 19 infections were slightly more in male than in female.

The city was divided into 7 different zones, in which statistically central zone was most affected zone.

In the survey nearly 1/3 patients were found co-morbid in which most cases were of diabetes and hypertension.

The symptomatic and asymptomatic patients were divided almost equally.

In symptomatic patient's sore throat and breathlessness were common

In our survey it was found that more than three quarters of patients have taken vaccines.

From which 90 % have taken the first dose and 80% have taken second dose.

The age group 19-60 were administered most doses of Covid 19 vaccines.

Among the several vaccines being administered Covishield accounted for nearly half of them followed by Covaxin nearly 40%.

The rest was distributed between zycovD and sputnik.

The people & medical system were better prepared during third wave than second wave.

Compared to other viruses spread of the Covid-19 infection was faster and it was more contagious.

The use of technology helped in accurate identification of patients and providing treatment whenever required.

### RESEARCH GAP

Although this study can lay down a foundation for future research, it is subject to some limitations. There are plenty of studies available on the impact of Covid-19 on business sectors globally, however, there is limited data available on the impact of Covid-19 on

the social health and well-being of the society. This limited research on the pandemic's effect on health of society and communities can be considered as a research gap.

To gain perspective on effect of pandemic on homo sapiens health, qualitative data has been collected in this study. Quantitative data can help to determine the development of Covid-19 in terms of fatalities by the numerical and factual data to gain a detailed perspective on the topic.

#### A PROSPECTIVE REVIEW ON A UNIVERSAL VACCINE OF COVID-19 VIRUS:

According to some well-known research articles, scientists from different research institutions in India have innovated such a vaccine developed using bio computational studies which is believed to be effective towards all the variants of COVID-19 virus. The *coronaviridae* family has induced highly virulent viruses, which includes the one's responsible for 3 major pandemics in the past two decades: SARS in 2002, MERS outbreak in 2012 and the current nCOVID19 crisis. There is also possibility of future outbreaks which cannot be undermined.

Indian scientists from different research institutions in India have come designed a peptide vaccine that is effective towards all the variants of Corona Virus. Their research work had also been accepted for publication in the Journals of Molecular Liquids which is devoted to some fundamental aspects of the structure, interactions and their dynamic processes in simple as well as molecular and some complex liquids.

According to researchers the Peptide Vaccine designed was found to be effective against

- 1) hCoV-299E
- 2) hCoV-HKU1
- 3) hCoV-OC43
- 4) SARS-CoV
- 5) MERS-CoV
- 6) SARSCOV-2

The vaccine designed was highly stable with antigenic and immunogenic property. An immuno-informatic approach was made by the researchers to design this vaccine which is a multi-epitope, multi-target

chimeric peptide and is able to cope with all viruses from the *Coronaviridae* family.

For the vaccine to work properly the researchers had identified various conserved regions in the spike protein of the six different viruses mentioned above which undergo very few mutations thus the change was minimal during the course of pandemic.

The spike proteins present in all viruses' function as credible Pathogen-associated molecular pattern (PAMPs) which are discerned by human TLR4 receptors. It aims to recognize the amino acid sequences of the viral spike protein that are precisely responsible for interaction with human TLR4. Also to screen the immunogenic epitomes present in them to develop such a vaccine against the coronaviruses.

The key difference between this vaccine and others is that the spike protein was selected after showing high binding strengths with a protein TLR4 which is the same protein responsible for detecting SARS-COV-2 viruses in the body and initiating the immune responses.

The molecular design of the constructed vaccine is qualified in-silico.

Additionally, molecular docking and dynamics simulation studies reveal strong and stable interactions of the vaccine construct with TLRs and MHC receptors.

In-silico cloning is performed for proficient expression in bacterial systems.

In-silico immune simulation of the vaccine indicates highly immunogenic nature of the vaccine construct without any allergic responses.

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