

**A study on Perception about two waves of COVID:
Infection, vaccination, and COVID appropriate
behaviour**

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

Dr. Sonal Jain

Under the Supervision and Guidance of

Dr. Neetu Purohit

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled “**A study on Perception about two waves of COVID: Infection, vaccination, and COVID appropriate behaviour**” is the bona fide 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 Information derived from the published or unpublished work of others has been duly acknowledged in the text.



(Signature)

Dr. Sonal Jain

Date: 4 July 2021

Acknowledgement

With immense pleasure I present my report as a part of my dissertation. I would like to thank all the people who gave me enormous support.

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Yours Sincerely,

Sonal Jain

ABSTRACT

Introduction: Coronavirus Disease 2019 (COVID-19) is in its second wave, infecting people all over the world. In India, the situation is particularly terrible, with the daily count on April 15, 2021 being more than twice that of the previous peak. Young individuals in India did not get infected or have much of a serious condition during the first wave of COVID-19, but this is not the case with the second wave.⁶

Objectives:

1. To assess the perceived severity of the COVID symptoms & post recovery effects, during two different waves of COVID-19.
2. To know the behaviour of people towards COVID testing during two waves of COVID-19.
3. To collect perception towards the severity of vaccination side-effects after the first dose of COVID-19 vaccine.
4. To compare the COVID appropriate behaviour of people during two waves of the COVID-19.

Methodology: An Observational Analytical Cross-Sectional Study was done. Primary data was collected Online survey was conducted using questionnaire which was circulated in the form of Google forms to the target population using email Ids, phone numbers, and linked in. Descriptive statistical tools from MS excel was used to carry out the analysis. Tables, charts and graphs using MS Excel were generated to represent the data.

Results & Analysis: In statistical analysis it was found that COVID testing and COVID infection has a significant relationship. During two waves of COVID-19, 60% of the respondents followed the COVID appropriate behaviour during both the waves, 20% of the respondents followed the behaviour more rigorously during 1st wave as compared to that of 2nd wave, where 16% respondents followed the behaviour.

Conclusion: Knowledge and awareness about what to expect following immunisation will help educate the public, prevent misinformation, and reduce vaccine hesitancy³. Also, it is important to be aware of the newest symptoms & COVID appropriate behaviour of COVID-19 to be able to identify them, take timely treatment and avoid complications.

Key Words: COVID-19 waves, COVID-19, Vaccination, COVID appropriate behaviour

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Abbreviations

COVID	Coronavirus Disease
MS	Microsoft
nCoV	Novel Corona Virus
ORS	Oral Rehydration Solutions
SARS-CoV	Severe Acute Respiratory Syndrome - Coronavirus
SpO₂	Oxygen Saturation
WHO	World Health Organization

A study on Perception about two waves of COVID: Infection, vaccination, and COVID appropriate behaviour

1. INTRODUCTION

Corona virus disease-2019 (COVID-19) also known as 2019 novel corona virus (2019-nCoV) was identified in December 2019 in Wuhan city, China. On 11 March 2020 WHO declared Noble Corona Virus as a pandemic as the number of cases were rising very rapidly in European regions. The virus spreads primarily through close contact between infected individuals. It spreads when an infected individual sneezes or coughs via droplets. COVID-19's global spread triggered a havoc in Europe, Asia, North America, and the Middle East.¹¹

The coronavirus disease (COVID-19) outbreak had spread to six continents as of June 21, 2021, and over 3.9 million people had died after contracting the respiratory virus. In Italy, approximately 127 thousand of these deaths occurred.

The COVID-19 disease has affected approximately 215 countries and territories worldwide. The virus is still circulating at high levels, and many countries have restored lockdown measures to slow the spread seen during the winter months. Furthermore, in response to the discovery of new variants, new travel limitations and guidelines have been imposed, particularly those in the UK and South Africa. A COVID-19 vaccine has been administered to at least 22.0 percent of the world's population. With 40.0 million administered each day, 2.7 billion doses have been administered worldwide.¹²

In India, the first case was reported on 30 January 2020. Following the peak of 1st wave in September 2020, the COVID-19 cases began to rise again in India in the 1st week of March, indicating the initiation of the country's 2nd wave of the pandemic.¹⁰

Coronavirus Disease 2019 (COVID-19) is in its second wave, infecting people all over the world. In India, the situation is particularly terrible, with the daily count on April 15, 2021 being more than twice that of the previous peak. Due to geographic inhomogeneities, the epidemic evolution in India is highly complicated¹ Young individuals in India did not get infected or have much of a serious condition during the first wave of COVID-19, but this is not

the case with the second wave.⁶ The death toll in India as a result of Covid-19 has now surpassed three lakh. Almost half of them, or nearly 1.5 lakh deaths, occurred during the second wave, which began in the second week of February. Shockingly, in a span of 7 weeks after March, more than 1.4 lakh deaths have been reported.

India itself has the 3rd highest death toll in the world. Only the US, with more than 5.84 lakh mortalities, and Brazil, with 4.48 lakh deaths, have a higher death toll. Out of all the cases worldwide, 16% of all confirmed cases and 9% of all deaths accounts for India now.¹⁵ The second wave of COVID-19 has wreaked havoc on India's healthcare sector. Oxygen supplies have become critical in some towns and regions, hospitals have turned away patients, and crematoriums have run out of capacity. India's struggle to immunise its big population against SARS-CoV-2 is another factor contributing to the catastrophe.⁶

Individuals suffered from the nCoV displayed a variable range of symptoms, Varying in severity, of mild, moderate, severe to critical. In the 2nd wave of Coronavirus, it is said that the virus is much contagious than before. Breathing difficulties, according to research, are common in the 2nd wave in the patients, right from the start of the disease. The virus lowers oxygen saturation (SpO2 levels), which can cause lung collapse and, in few instances, multiple organ failure. Patients who have recently been infected are experiencing new and unusual symptoms due to the virus's rapid evolution and the discovery of new variants. It is critical to be aware of the most recent COVID-19 symptoms in order to recognize them, receive prompt treatment, and circumvent complications.⁹

On January 16, India launched its covid-19 vaccine campaign. Initially, it was only available to health-care professionals and front-line workers. This was extended on March 1 to include everyone over the age of 60, as well as those over 45 with particular comorbidities.² On May 1, all adults over the age of 18 became eligible for immunization.⁶ “Knowledge and awareness about what to expect following immunisation will help educate the public, prevent misinformation, and reduce vaccine hesitancy.”³

2. REVIEW OF LITERATURE

A study was done by Jyoti Jain et.al, (2021), on *COVID-19 vaccine hesitancy* it was found that, one out of every ten medical students had COVID-19 vaccine reluctance. Vaccine hesitation was independently predicted by a lack of understanding about vaccination eligibility, concerns about adverse events and vaccine efficacy, and a lack of faith in government. COVID-19 vaccination reluctance was reduced due to heightened risk perception. The survey has the drawback of being conducted after COVID-19 immunisation had begun in several medical schools. As a result, it's possible that it underestimated initial vaccine apprehension among individuals who were already vaccinated and then changed to the vaccination acceptance cohort.⁵

In another study by Jayavedan & Shenoy, (2021), Mild and short-term post-vaccination symptoms were noted by two-thirds of healthcare workers who responded to the survey. The most common symptoms were fatigue, myalgia, and fever. These symptoms matched those seen in prior phase 2/3 trials and were consistent with an immunological response usually linked with vaccinations. In 90% of cases, the effects were either milder than predicted or met the vaccine recipient's expectations. There were no severe incidents recorded. The only drawback of the study was that there was no way to report delayed effects because the survey was conducted immediately after vaccination began. The study was conducted on the basis of trust; it was difficult to trace each respondent's I.D. or information. The small proportion of people who received the Pfizer, Covaxin, and Sinopharm vaccinations makes it difficult to compare.³

In a research by Ranjit Sah et. al, (2021), it was found that some health workers reported irritation in their mood four hours after immunisation, and myalgia, nausea, soreness at the injection site, and a feverish feeling six hours later. After 12 hours, a fever with chills occurred, which needed to be treated with paracetamol. The fever and headache subsided by the second day of immunisation, but myalgia and pain at the injection site remained. Early morning awakening, head heaviness, and soreness at the injection site persisted on the third day.⁴

According to the research by Rajesh Ranjan, et al, (2021), on the 2nd wave of coronavirus in India *it was said that* the virus is currently far more infectious than it was during the previous wave, yet the daily count of deaths for each infection is lesser. However, with an abnormally high number of patients and an overburdened healthcare system, the daily fatality rate could

skyrocket Because it excludes several aspects like as asymptomatic individuals, lockdowns, immunisation, and so forth, the SIR model may not be very accurate.¹

In a study by Udani Samarasekera, (2021), it was found that Vaccine supply has been a problem, with shortages of COVID-19 vaccinations reported in numerous states as early as May. Only 2% of India's 14 billion people had received one dosage of the COVID-19 vaccine as of May 3, and only 9% were fully immunised.⁶

Another study by Vijay Kumar Jain et al (2021), done on “Differences between First wave and Second wave of COVID-19 in India” it was found, COVID-19 patients face an acute lack of hospital beds, oxygen, medication, and ventilators across the country. Although there is no notable increase in the fatality rate in the second wave, the total death statistics are sadly high due to an alarmingly large number of cases.⁷

Also, in a research by Praveen Sv, et al, (2021), it was said that the possibility of an increase in deaths due to the new COVID-19 strain, the possibility of reinstating lockdown, whether hospitals have the capacity to deal with the surging COVID-19 cases due to the new strain, the aspect of travelling, whether vaccines will be effective on new strains, and so on have all been investigated.⁸

A study was done by S Iftimie, et.al, (2020), Reus, Spain, on 1st and 2nd waves of coronavirus disease-19. It was discovered that 204 patients were admitted to the hospital during the 1st period, and 264 were admitted during the 2nd period. Patients in the 2nd wave were younger, had shorter hospital stays, and had a lower death rate than patients in the 1st wave. In the second wave, there were more children, as well as pregnant and post-partum women. The most common signs and symptoms in both waves were fever, dyspnoea, pneumonia, and cough, with the most significant comorbidities being cardiovascular disease (CVD), type 2 diabetes mellitus, and chronic CNS diseases. The 2nd wave of patients had a higher prevalence of kidney and GI symptoms and were mostly treated with non-invasive mechanical ventilation (NIV) and corticoids.¹³

In a study done in John Hopkins (2021), it was observed that human behaviour is the most important factor. The responses of state and local governments, as well as individuals, to the pandemic vary. Some people take COVID-19 precautions, such as physical separation, hand-washing, and mask use while others are less stringent in requiring these precautions or restricting certain high-risk activities.¹⁴

Rationale

Individuals infected with the novel coronavirus disease showed a wide range of symptoms, varying in severity of mild, moderate, severe or critical. The virus is said to be more infectious than before in the 2nd wave of COVID-19. COVID-19 vaccinations are desperately needed over the world. Because the virus is rapidly evolving and new variants are being discovered, patients who have recently been infected are experiencing new and unusual symptoms. It is critical to be aware of the most recent COVID-19 symptoms so that they can be identified, treated promptly, and complications avoided. It is critical to be aware of the most recent COVID-19 symptoms in order to identify them, treat them promptly, and avoid complications.⁹

There are now 78 vaccine candidates in development, with 201 trials active and more on the way. Twelve vaccines have been approved, with the application of these vaccines being phased in across the globe.⁴ To bring this pandemic to an end, a large share of the world needs to be immune to the virus. The safest way to achieve this is with a vaccine.¹² COVID-19 vaccination reluctance is expected due to concerns about vaccination safety and efficacy, rushed vaccine testing before the launch, and a lack of faith in government authorities. The perceived risk of contracting COVID-19 vaccine reduced both COVID-19 vaccine reluctance and hesitation in taking part in COVID-19 vaccination trials. It was discovered that the choice from the two different vaccines (Covishield and Covaxin) was critical. 5 The proportion of people who experienced side effects after each vaccine was 66 percent (Covishield), 53 percent (Covaxin), 70.7 percent (Pfizer), and 24.4 percent (Sinopharm).³ As a result, we can clearly see how critical it is to comprehend the post vaccination symptoms and side effects in different age groups.

1.1 Research Question

- 1. What is the perception and experiences of people about two waves of COVID 19 with respect to infection severity, COVID appropriate behaviour and vaccination?***
- 2. Did people behave differently or in the same way in terms of COVID testing, and COVID appropriate behaviour during two waves of the COVID-19?***

1.2 Research Objectives

- 1. To assess the perceived severity of the COVID symptoms & post recovery effects, during two different waves of COVID-19.**

2. To know the behaviour of people towards COVID testing during two waves of COVID-19.
3. To collect perception towards the severity of vaccination side-effects after the 1st dose of COVID-19 vaccine.
4. To compare the COVID appropriate behaviour of people during two waves of the COVID-19.

1.3 Research Hypotheses

➤ **Research Hypotheses (1)**

Null Hypothesis (H0): There is **no difference** in vaccinated and non-vaccinated individuals in terms of getting COVID infection?

Alternate Hypothesis (H1): There is difference in vaccinated and non-vaccinated individuals in terms of getting COVID infection?

➤ **Research Hypotheses (2)**

Null Hypothesis (H0): People **did not** behave differently in terms of COVID testing during two waves of the COVID-19?

Alternate Hypothesis (H1): People behave differently in terms of COVID testing during two waves of the COVID-19?

➤ **Research Hypotheses (3)**

Null Hypothesis (H0): People **did not** behave differently in terms of their COVID appropriate behaviour during two waves of the COVID-19?

Alternate Hypothesis (H1): People behave differently in terms of their COVID appropriate behaviour during two waves of the COVID-19?

3. METHODOLOGY

Study design: An Observational Analytical Cross-Sectional Study was done.

Study population: Anyone above 10 years of age with at least one family member having cell phone participated in the study.

Study duration: Study duration was 3 months from April to June 2021.

Study tools: Structured Survey Questionnaire: was used as study tool. The questionnaire had 6 sections, (i) demographic details, (ii) vaccination status, (iii) post vaccination side effects, (iv) COVID-19 infection, (v) post COVID recovery side effects and (vi) COVID appropriate behaviour. Most of the questions were closed ended to make the tool comprehensible and easy to fill by respondents.

Data Collection Methods:

- Primary data

Online survey was conducted using questionnaire which was circulated in the form of Google forms to the target population using email Ids, phone numbers, and linked in.

Sampling Method: Convenience Sampling was done.

Sample Size: 298 respondents choose to participate in the online survey.

***Limitation** – Due to the ongoing COVID – 19 pandemic face to face interviews could not be done, only online survey was done using google forms therefore open ended questions were avoided. Only the families having at least one smart phone with either an account on WhatsApp or having email Id could be surveyed.

Ethical Considerations:

- The confidentiality of study participants has been maintained throughout the study.
- The information collected is shared for the purpose of dissertation only.
- No one was forced to participate in the study & consent was taken from every respondent.

Data Analysis: Descriptive statistical tools from MS excel was used to carry out the analysis.

Data Representation: Tables, charts and graphs using MS Excel were generated to represent the data.

4. RESULTS

The questionnaire was divided into 5 main segments i.e., (i) Demographic profile, (ii) COVID-19 infection during two waves of COVID-19, (iii) Post COVID recovery side effects (iv) Vaccination status and Post vaccination side effects, and (v) COVID appropriate behaviour. Let's have a look at each of them one by one.

4.1 Demographic Profile

As shown in Table 1, The total number of responses obtained were 298 among which 144(48.3%) were males and 154(51.7%) were females. 6% of the total respondents were less than 18 years, 82% between 18-45 years, 9% 45-60 years and 3% more than 60 years. The minimum age was 11 years, maximum age was 78 years. Maximum responses were obtained from the age group of 18-45.

3% of the total males were less than 18 years, 83% between 18-45 years, 10% 45-60 years and 3% more than 60 years. Among males minimum age was 11 years, maximum age was 78 years.

8% of the total females were less than 18 years, 81% between 18-45 years, 8% 45-60 years and 3% more than 60 years. Among females minimum age was 14 years, maximum age was 72 years.

Table 1: Demographic Profile of the respondents

Items	Male		Female		Total	
	No.	%	No	%	No.	%
Respondents interviewed	144	48.3	154	51.7	298	100
Age group						
Less than 18 years	4	3%	13	8%	17	6%
18-45 years	120	83%	124	81%	244	82%
45-60 years	15	10%	13	8%	28	9%
60+	5	3%	4	3%	9	3%
Minimum Age	11		14		11	

Maximum Age	78	72	78
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4.2 Perceived Severity of the COVID symptoms & post recovery effects, during two different waves of COVID-19.

As shown in the table 2, the respondents were asked questions regarding if they get COVID-19 infection, COVID testing, symptoms, severity of symptoms, need of oxygen/hospitalisation and their current recovery status. Let's look at each of them separately.

4.2.1 COVID -19 infection

As shown in the table 2, out of 298 responses 87(29.1%) respondents said that they have experienced symptoms of Novel Coronavirus infection.

Out of 87 respondents, 26(30%) respondents got the infection during first wave of COVID-19.

While 61 (70%) respondents got infected during second wave of COVID-19. Among which 8 respondents (9%) caught the infection after the first dose of vaccination and only 1 respondent (1%) got the infection after completing both the doses of vaccination.

4.2.2 Symptoms & their severity experienced by respondents due to COVID-19 infection

As shown in the table 2, respondents were asked about what are all the symptoms they experienced, which symptom was the most bothersome (i.e., severe). Respondents were asked to rate the severity at a scale of mild, moderate and severe.

As shown in table 2, majority of the symptoms experienced by respondents was fever (81), cough (70), sore throat (69), loss of ability to taste (65), loss of ability to smell (63), general lack of energy or malaise (61), muscle aches (54), joint aches (50), headache (50), runny nose, loss of appetite (46), discomfort, tightness, or pressure in chest (46), shortness of breath (45), chills & fatigues (40). Less common symptoms included dizziness (37), altered consciousness (35), vomiting (34), abdominal pain (33), diarrhoea & nausea (31).

At an average 35% of the symptoms were mild, 39 % were moderate and 26% were severe.

During first wave

As shown in table 2, majority of the symptoms experienced by respondents was fever (88%), cough (77%), sore throat (77%), loss of ability to taste (77%), loss of ability to smell (77%), fatigues (77%), general lack of energy or malaise (62%), muscle aches (62%), joint aches (58%), headache (50%), runny nose, loss of appetite (46%), discomfort, tightness, or pressure in chest (46%), shortness of breath (46%), and Less common symptoms included dizziness (35%), altered consciousness (27%), vomiting (38%), abdominal pain (33%), diarrhoea & nausea (31%).

At an average 40% of the symptoms were mild, 31 % were moderate and 29% were severe.

During Second wave

As shown in table 2, majority of the symptoms experienced by respondents was fever (95%), cough (82%), sore throat (79%), loss of ability to taste (74%), loss of ability to smell (70%), general lack of energy or malaise (74%), muscle aches (62%), joint aches (57%), headache (61%), runny nose & loss of appetite (56%), discomfort, tightness, or pressure in chest (56%), shortness of breath (54%), and Less common symptoms included dizziness (46%), fatigues (33%), altered consciousness (46%), vomiting (39%), abdominal pain (39%), diarrhoea (38%) & nausea (36%).

At an average 33% of the symptoms were mild, 43 % were moderate and 29% were severe.

4.2.3 Screening

As shown in table 2, Out of 87 respondents 69(79%) get the test for COVID-19 done. Out of which during first wave 17 (65.4%) respondents got tested and 52 (85.3%) respondents during second wave.

To check the easiness of getting tested for COVID-19, respondents were asked to rate the easiness on a scale of 1-4, where 1 mean very easy and 4 means very

difficult. As shown in figure 4, 28(38.9%) respondents find it very easy, 22(30.6%) find it easy, 13(18.1%) find it difficult, and 9 (12.5%) respondents find it very difficult to get the test done.

26(38.2%) respondents get the test reports within 24 hours, 24(35.3%) received it within 48 hours and 17(26.5%) respondents get the test reports on the same day.

4.2.4 Need of oxygen support and hospitalization due to COVID-19

As shown in the table 2, out of 87 respondents who got COVID infection, 8 respondents (9.2%) require oxygen support and 11 respondents (12.6%) require hospitalization due to breathing difficulty and respiratory infection.

During 1st wave, 11.53% respondents required oxygen support and 19.23% required hospitalization.

During 2nd wave, 8.19% respondents required oxygen support and 9.83% required hospitalization.

4.2.5 Current status of the respondents who suffered COVID infection

As shown in the table 2, 79(91%) respondents recovered and are symptoms free, while 6(7%) respondents are feeling better but not completely recovered and 2(2%) respondents are still not feeling better.

During 1st wave 24(92%) respondents recovered and are symptoms free, while 2(8%) respondents are feeling better but not completely recovered.

During 2nd wave 55(90%) respondents recovered and are symptoms free, while 4(6%) respondents are feeling better but not completely recovered and 2(4%) respondents are still not feeling better.

Table 2: COVID-19 symptoms and their perceived severity during two waves of COVID-19

Items	First Wave		Second Wave		Total
	No.	%	No	%	
N					298

Respondents suffered from COVID	26	30%	61	70%	87
Symptoms suffered					
<i>Fever</i>	23	88%	58	95%	81
<i>Cough (new onset or worsening of chronic cough)</i>	20	77%	50	82%	70
<i>Sore throat</i>	20	77%	48	79%	68
<i>Runny nose</i>	12	46%	34	56%	46
<i>Shortness of breath</i>	12	46%	33	54%	45
<i>Chills</i>	11	42%	29	48%	40
<i>Fatigue</i>	20	77%	20	33%	40
<i>General lack of energy or malaise</i>	16	62%	45	74%	61
<i>Loss of appetite</i>	12	46%	34	56%	46
<i>Discomfort, tightness, or pressure in chest</i>	12	46%	34	56%	46
<i>Vomiting</i>	10	38%	24	39%	34
<i>Nausea</i>	9	35%	22	36%	31
<i>Diarrhoea</i>	8	31%	23	38%	31
<i>Muscle aches</i>	16	62%	38	62%	54
<i>Joint aches</i>	15	58%	35	57%	50
<i>Headache</i>	13	50%	37	61%	50
<i>Dizziness</i>	9	35%	28	46%	37
<i>Altered consciousness or feeling like it was difficult to stay awake</i>	7	27%	28	46%	35
<i>Loss of ability to smell</i>	20	77%	43	70%	63
<i>Loss of ability to taste</i>	20	77%	45	74%	65

<i>Abdominal pain</i>	9	35%	24	39%	33
Perceived severity was					
Mild		40%		33%	
Moderate		31%		43%	
Severe		29%		29%	
COVID testing	17	65.4%	52	85.3%	69
Hospitalization was required	5	19.23%	6	9.83	11
Oxygen support was required	3	11.53%	5	8.19%	8
Current Status					
Recovered	24	92%	55	90%	79
Post Recovery Side effects	11	42.3%	20	32.7%	31
Feeling better but not completely recovered	2	8%	4	6%	6
Not completely recovered	0	0	2	4%	2

4.3 POST COVID RECOVERY SIDE EFFECTS

The respondents who got COVID were asked if they experienced any side effect after recovering from COVID-19, its onset, severity of symptoms, if they require hospitalization for the same, and whether they recovered from it or not.

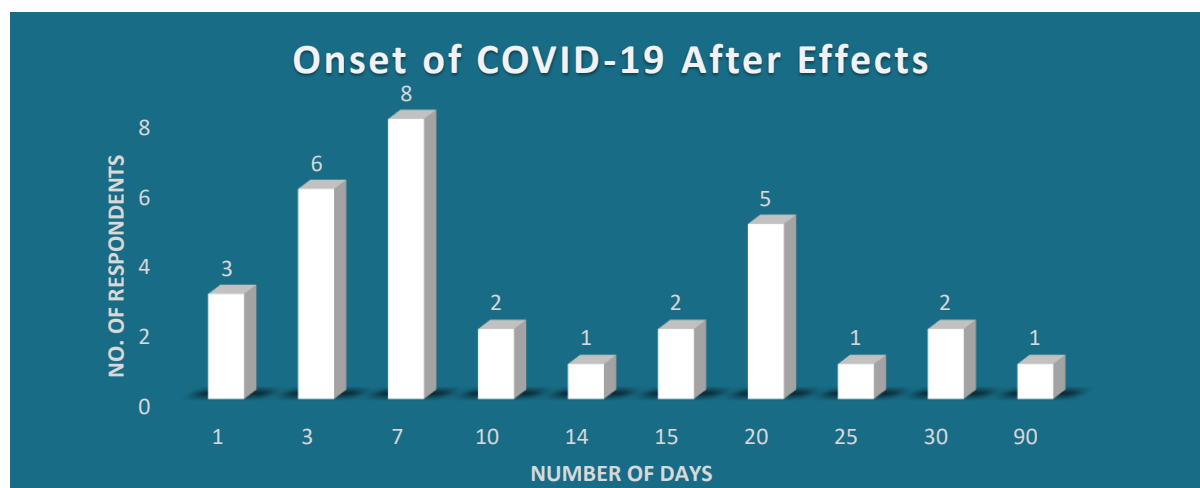
4.3.1 Onset of COVID-19 After-Effects

As shown in the table 2, out of 87 respondents who got COVID infection, 31(35.6%) experienced aftereffects of COVID-19.

As shown in figure 1, 8 respondents (26%) of the respondents felt the after-effects after 7 days of recovery, 19% (6 respondents) of respondents experienced the after-effects after 3 days of recovery, 16% (5 respondents) of respondents experienced

it after 20 days of recovery, 12% (4 respondents) of respondents experienced it after 10 & 15 days, 3% (1 respondent) after 30 days, 3% after 90 days and 10% immediately after recovery.

Figure 1: Onset of COVID-19 After-Effects



4.3.2 Post recovery effects of COVID-19 and its perceived severity

As shown in table 3, the most common symptoms experienced post COVID recovery were general lack of energy (20), fatigue (19), muscle ache, joint ache, headache (16), shortness of breath, loss of appetite, discomfort in chest (14), dizziness (12), loss of ability to smell and taste, chronic cough, sore throat (11) respondents. Lesser common side-effects were fever (10), runny nose, nausea (9), diarrhoea, abdominal pain (8), chills, vomiting (7), and least common was fungal infection, experienced by 1 respondent.

Most of the above-mentioned symptoms were mild to moderate in severity except dizziness (37%), loss of ability to taste (27%) respondents reported it as severe, and joint ache (25%).

At an overall average 57% of the symptoms were mild, 34 % symptoms were moderate while only 9% were reported as severe.

Table 3: Post recovery effects of COVID-19 and its perceived severity

Symptoms	Mild	Moderate	Severe	Total
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N							31
	No	%	No	%	No	%	
Fever	7	70%	3	30%	0	0%	10
Cough (new onset or worsening of chronic cough)	6	55%	5	45%	0	0%	11
Sore throat	7	64%	3	27%	1	9%	11
Runny nose	7	78%	2	22%	0	0%	9
Shortness of breath	5	36%	9	64%	0	0%	14
Chills	5	71%	2	29%	0	0%	7
Fatigue	4	21%	12	63%	3	16%	19
General lack of energy or malaise	7	35%	9	45%	4	20%	20
Loss of appetite	9	64%	5	36%	0	0%	14
Discomfort, tightness, or pressure in chest	7	50%	7	50%	0	0%	14
Vomiting	5	71%	2	29%	0	0%	7
Nausea	7	78%	1	11%	1	11%	9
Diarrhoea	5	63%	3	38%	0	0%	8
Muscle aches	4	25%	9	56%	3	19%	16
Joint aches	5	31%	7	44%	4	25%	16
Headache	8	50%	6	38%	2	13%	16
Dizziness	7	37%	5	26%	7	37%	19
Altered consciousness or feeling like it was difficult to stay awake	4	50%	4	50%	0	0%	8

Loss of ability to smell	6	55%	3	27%	2	18%	11
Loss of ability to taste	7	64%	1	9%	3	27%	11
Abdominal pain	7	88%	1	13%	0	0%	8
Fungal Infection	1	100%	0	0%	0	0%	1
Overall Severity	57%		34%		9%		

4.3.3 Need of consultation and hospitalization due to post COVID recovery effects

As shown in table 3, out of 31 respondents, 17(54.8%) respondents require consultation and 3.2% (1 respondent) required hospitalization due to side effects.

4.3.4 Current status

As shown in table 3, out of all the respondents, 21(67.7%) respondents recovered and are symptoms free, while 18(25.8%) respondents are feeling better but not completely recovered and 2(6.5%) respondents are still not feeling better.

4.4 Immediate response and perceived severity of vaccination side-effects post the first dose of COVID-19 vaccine.

As shown in table 4, out of 298 responses total 131(43.6%) people have received the vaccination, among which 96(73.3%) received first dose of the vaccination and 35(26.7%) received both the doses of the vaccination. 107(81.7%) received Covishield and 27(18.3%) respondents received Covaxin. Majority of the people got the vaccination for free, and a few had to pay for it (17 respondents). Minimum amount paid for vaccination was Rs. 250 per dose and the maximum was 1250 per dose.

Cause of not taking vaccination dose: Out of 167 respondents who did not took vaccination dose the majority of people (94 i.e., 56%) stated that, unavailability of vaccination slots was the main cause of not taking vaccination, while 8% (14 respondents) did not believe in the quality of vaccination, 9(5%) respondents had fear of life long side effects on body due to vaccination, 6% people are doubtful of the studies done so far. Other causes of not taking vaccination included, not

eligible for vaccination (5%) fear of adverse allergic reactions (4%), vaccination cannot give lifelong immunity (4%), pregnancy (2%), recent COVID infections (4%).

Ease of getting vaccination: 57(43.5%) found it very easy to get the vaccine, 48(36.6%) respondents found it easy, 13(9.9%) respondents found it difficult to get the vaccination slots, 13(9.9%) found it very difficult to get the vaccination dose.

4.4.1 Post vaccination side effects

As shown in table 4, Respondents were asked if they were informed about the probable side effects of COVID vaccination at the facility where they got vaccinated. 91(69.5%) respondents said Yes, that they were informed, while rest of the 40(30.5%) respondents said that they were not informed about the probable symptoms post vaccination.

As shown in above mentioned table 4, out of 131 respondents who received COVID Vaccination, 100(76%) respondents says that they experienced few symptoms/side-effects post COVID vaccination, while 31 respondents say they did not experience any symptom or side effect post COVID vaccination.

4.4.2 Time taken by the symptoms to subside

As shown in table 6, for majority (48%) of the respondents the symptoms took less than 24 hours to subside, where 38% respondents said it took 24-48 hours for the symptoms to subside. And a few (14%) reported that the symptoms took more than 48 hours to subside. Also, 55% respondents said that the symptoms affected their activities of daily living.

85% respondents took paracetamol, 14% took ORS, 2% took Dolo and few took cetirizine, ayurvedic, homeopathic medicine to treat the symptoms.

Table 4: Vaccination status and post vaccination side effects and their severity

Items	No.	%	Total
N			298
Vaccination Status			
Yes	131	44%	
No	167	66%	
Reasons of not taking vaccination	167		167
Unavailability of vaccination slots	94	56%	
Doubtful of the research done so far	10	6%	
Not sure about the quality of vaccination	14	8%	
Fear of life long side effects on body sue to vaccination	9	5%	
Fear of adverse allergic reactions	7	4%	
Vaccine did not give life-long immunity	7	4%	
Below 18 years/Not eligible	8	5%	
Recently COVID infected	7	4%	
Waiting for another vaccine	6	4%	
Pregnancy	3	2%	
Did not went out due to Pandemic	2	1%	
Doses			131
First Dose	96	73.3%	
Second Dose	35	43.6%	
Type of Vaccination			131
Covishield	107	81.7%	
Covaxin	27	18.3%	
Paid/Free			
Paid	17	13%	
Free	114	87%	
Ease of getting vaccinated			131

Very Easy	57	43.5%	57
Easy	48	36.6%	48
Difficult	13	9.9%	13
Very Difficult	13	9.9%	13
Post vaccination side-effects	100	76%	100
Days to recover			
< 24 hours	48	48%	
24-48 hours	38	38%	
>48 hours	14	14%	

4.4.3 Symptoms experienced by the respondents post Vaccination

As shown in table 5, respondents were asked to identify the symptoms they experienced post Vaccination and also to grade its severity on the scale of Mild, Moderate and Severe.

As shown in table 5, the most common symptoms experienced post vaccination was tiredness (experienced by 82 respondents), fever (experienced by 82 respondents), headache (experienced by 69 respondents), body ache (experienced by 77 respondents) and joint pain (experienced by 44 respondents). Less common symptoms included sleeplessness (experienced by 27 respondents), chills (experienced by 25 respondents), diarrhoea, dizziness (experienced by 23 respondents), nausea, vomiting, & sore throat (experienced by 18 respondents). Least common symptoms were allergic rashes and giddiness.

Most of the symptoms reported were mild to moderate, except fever, headache, sleeplessness and joint pain.

At an average 51% of the symptoms were mild, 28% of the symptoms were moderate and 21% of the symptoms were severe.

Table 5: Post Vaccination Symptoms suffered and its perceived Severity:

Symptoms	Mild		Moderate		Severe		
	No	%	No	%	No	%	Total

Tiredness	42	51%	31	38%	9	11%	82
Body ache	31	40%	37	48%	9	12%	77
Fever	35	43%	28	34%	19	23%	82
Headache	36	52%	20	29%	13	19%	69
Joint pain	17	39%	16	36%	11	25%	44
Nausea	9	50%	6	33%	3	17%	18
Vomiting	9	50%	6	33%	3	17%	18
Diarrhoea	13	57%	6	26%	4	17%	23
Dizziness	13	57%	6	26%	4	17%	23
Chills	14	56%	6	24%	5	20%	25
Sore throat	13	68%	2	11%	4	21%	19
Allergic rashes	11	61%	3	17%	4	22%	18
Sleeplessness	8	30%	8	30%	11	41%	27
Giddiness	11	65%	1	6%	5	29%	17
Overall Severity	51%		28%		21%		

4.5 COVID infection among those vaccinated and non-vaccinated.

As shown in Table 6, Out of 131 who received vaccination only 6.8% got COVID infection, while among those 167 who did not get vaccination 46.7% people got COVID infection.

Table 6: Covid-19 infection post vaccination

Items	Got COVID infection		Did not get COVID infection		Total
	No	%	No	%	
Vaccination done	9	6.8%	122	93.2%	131
Vaccination not done	78	46.7%	89	53.3%	167

4.6 COVID appropriate behaviour of people during two waves of the COVID-19.

As shown in table 7, respondents were asked about their life style changes due to COVID-19 and their COVID appropriate behaviour during the two waves of COVID-19, also to what extent these it has affected their lives. Let's look at each of these.

4.6.1 Behavioural changes due to COVID-19

As shown in table 7, respondents were asked if they made any changes in their lifestyle due to COVID-19, the 68% of the respondents believed that they are always performing More handwashing than usual, 59% are doing More use of hand sanitizer than usual, 59% says there is More cleaning in their home than usual, 53% are More disinfecting surfaces in your household than usual, 63% & 62% says they always Disinfect or wipe down groceries & mail packages respectively, 61% & 68% respondents always cancel their domestic and international travel respectively due to COVID, 53% respondents do not order food from restaurants. 88% always wear a mask in public and 71 % always keep 6 feet distance from those outside.

At an average 62% of the respondents says that they always perform these activities more than usual due to COVID, while 20% says often they perform these activities more rigorously, 10% says sometimes, 3% rarely do so, and 4% never experienced any change in their lifestyle due to COVID.

Table 7: Lifestyle changes to protect from COVID-19

Activities	Always	Often	Sometimes	Rarely	Never
More handwashing than usual	68%	22%	5%	1%	4%
More use of hand sanitizer than usual	59%	24%	11%	3%	3%
More cleaning in your home than usual	59%	24%	12%	2%	3%

More disinfecting surfaces in your household than usual	53%	30%	12%	3%	3%
Disinfecting or wiping down groceries.	63%	24%	9%	1%	3%
Disinfecting or wiping down mail or packages.	62%	22%	11%	3%	2%
Stocking up on food and supplies	41%	18%	21%	8%	11%
Avoiding or cancelling domestic travel	61%	21%	9%	4%	1%
Avoiding or cancelling international travel	68%	13%	7%	5%	7%
Not ordering take out from restaurants.	53%	19%	16%	6%	6%
Wearing a mask when out in public	88%	6%	4%	0%	2%
Kept six feet distance from those outside	71%	19%	7%	1%	2%

4.6.2 Behavioural changes of people during two waves of COVID-19

As shown in table 8, respondents were asked among first and second wave, during which wave they followed the COVID appropriate behaviour. They were provided with above mentioned activities and they had to choose one from given four options; first wave only, second wave only, both or none.

As shown in table 8, at an average 60% of the respondents followed the COVID appropriate behaviour during both the waves of COVID-19, 20% of the respondents followed the behaviour more rigorously during 1st wave as compared to that of 2nd wave, where 16% respondents followed the behaviour. While rest of the 4% did not followed the behaviour during either of the waves.

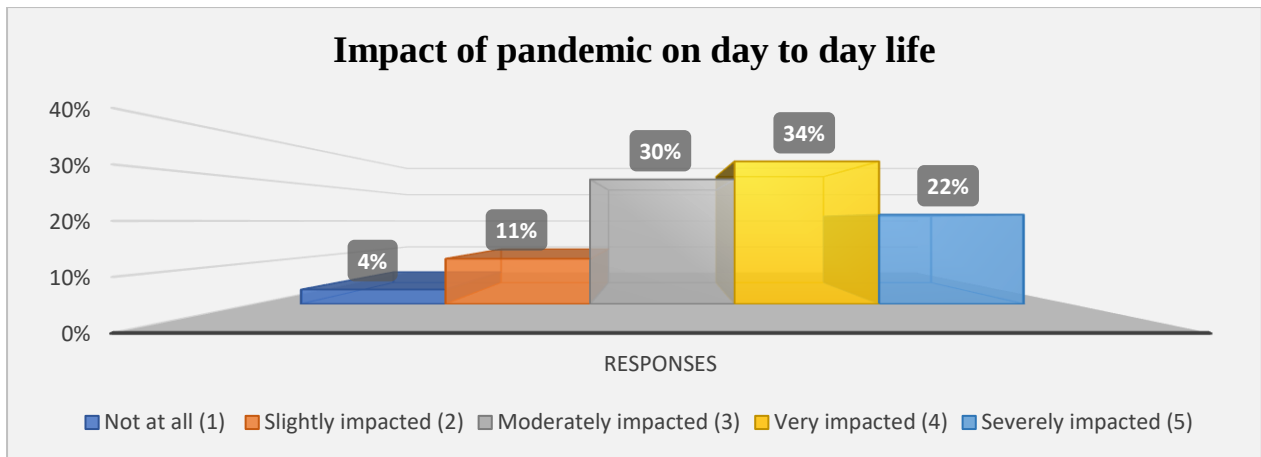
Table 8: Behavioural changes during two waves of COVID-19

<i>Activities</i>	<i>1st wave only</i>	<i>2nd wave only</i>	<i>Both</i>	<i>None</i>
More handwashing than usual	21%	17%	61%	2%
More use of hand sanitizer than usual	26%	17%	56%	2%
More cleaning in your home than usual	22%	17%	58%	3%
More disinfecting surfaces in your household than usual	23%	18%	56%	3%
Disinfecting or wiping down groceries.	21%	16%	59%	3%
Disinfecting or wiping down mail or packages.	22%	16%	59%	3%
Stocking up on food and supplies	25%	15%	44%	16%
Avoiding or cancelling domestic travel	15%	16%	65%	4%
Avoiding or cancelling international travel	15%	15%	66%	5%
Not ordering take out from restaurants.	19%	16%	61%	4%
Wearing a mask when out in public	16%	12%	70%	2%
Kept six feet distance from those outside	18%	12%	68%	2%

4.6.3 Impact of pandemic on day-to-day life

Figure 2 shows the overall impact of pandemic considering all the factors experienced by respondents in their day-to-day life. 4% of respondents says that the pandemic has not at all impacted their life, 11% says pandemic has slightly impacted their life, 30% says moderately impacted, 34% says very impacted and 22% says there is severe impact of pandemic on their life.

Figure 2: Impact of pandemic on day-to-day life



5. ANALYSIS

Chi-square analysis has been done to understand relation between pair of different variables using excel. The pairs include gender vs COVID-19 infection, Age vs COVID-19 infection, Vaccination vs COVID-19 infection, COVID-19 testing vs COVID waves, Gender vs COVID waves, Age group vs COVID waves, post COVID recovery vs COVID waves. P-value is used as the reference to see the significant difference, A P-value < 0.05 was considered to indicate asymptomatic significance. The p-values marked yellow show a significant difference.

5.1 COVID-19 testing vs Waves of COVID

Cross tabulation for COVID-19 testing vs Waves of COVID

Table 9 shows the result of chi-square test of independence performed to examine the relation between COVID-19 testing during different waves of COVID. The relationship identified between the above variables was **significant, $p=0.028796968$**

Therefore, there was significant difference between COVID-19 testing during different waves of COVID.

Hence the second Null hypothesis gets rejected, that there is no difference in terms of COVID testing during two waves of COVID-19.

Table 9: Cross tabulation for COVID-19 testing vs Waves of COVID

Variables	Total	COVID 19 WAVE 1 ST	COVID 19 WAVE 2 ND	P-value
COVID 19 TESTING	(100%) 87	(100%) 26	(100%) 61	
Yes	79% 69	65% 17	85% 52	0.028796968
No	21% 18	35% 9	15% 9	

5.2 Age group vs Waves of COVID

Cross tabulation for Age group vs Waves of COVID

Table 10 shows the result of chi-square test of independence performed to examine the relation between different age groups and waves of COVID. The relationship identified between the above variables was not significant, $p=0.356059633$

Therefore, there was no significant different age groups and waves of COVID.

Table 10: Cross tabulation for Age group vs Waves of COVID

Variables	Total	COVID 19 WAVE 1 ST	COVID 19 WAVE 2 ND	P-value
AGE GROUP	(100%) 87	(29%) 26	(71%) 61	
11-20 Years	(100%) 7	14% 1	86% 6	0.356059633
21-30 years	(100%) 49	29% 14	71% 35	
31-40 years	(100%) 12	42% 5	58% 7	
41-50 years	(100%) 10	30% 3	70% 7	
51-60 years	(100%)	0%	100%	

	4	0	4	
60+	(100%)	60%	40%	
	5	3	2	

5.3 Vaccination Dose vs COVID-19

Cross tabulation for Vaccination Dose & COVID-19 infection

Table 11 shows the result of chi-square test of independence performed to examine the relation between different doses of vaccination and COVID-19 infection. The relationship identified between the above variables was significant, $p = 0.0000$

Therefore, there is significant relation between the vaccination and COVID-19 infection.

Hence, the first Null hypothesis gets rejected, that there is no association between vaccination & COVID-19

Table 11: Cross tabulation for Vaccination Dose vs COVID-19

Variables	Total	COVID +VE (YES)	COVID +VE (NO)	P-value
VACCINATION DOSE	(100%) 298	(100%) 131	(100%) 167	
Done	29% 87	7% 9	47% 78	0.0000
Not Done	71% 211	93% 122	53% 89	

6. CONCLUSION

This study presented a comprehensive analysis of the COVID-19 infection, vaccination and COVID appropriate behaviour. There are five different aspects covered up in this study that includes COVID vaccination, vaccination side effects, COVID-19 infection, and COVID appropriate behaviour during two waves of COVID-19 and three research questions have been answered comprehensively. Out of 298 respondents 87 (29.1%) respondents got COVID infection. Out of 87 respondents 65(73.6%) get the test for COVID-19 done, and 22(26.4%) did not. It was found that the people who got infected due to COVID 19, most of them (70%) got the infection during second wave of COVID-19. Among all the symptoms the most common symptoms experienced by respondents were fever, tiredness, cough, loss of ability to smell & taste, and general lack of energy. Out of the 87 respondents who got COVID, 31(35%) respondents experienced post recovery effects, the most common side effects were joint aches, muscle aches, lethargy, general weakness. The onset of side effects varied greatly from one week to 3 months after recovering from COVID. The vaccination drive came into force during the 2nd wave of Coronavirus. In this study we found that out of 298 respondents total 131(43.6%) people have received the vaccination, among which 96(73.3%) received first dose of the vaccination and 35(26.7%) received both the doses of the vaccination. 107(81.7%) respondents have received Covishield and 27(18.3%) respondents received Covaxin. Out of 131 respondents who received COVID Vaccination, 100(76%) respondents says that they experienced few symptoms/side-effects post COVID vaccination. Tiredness, fever, joint pain, muscle aches were the commonly experienced symptoms 51% of the symptoms were mild. Out of 131 respondents who got vaccinated 9 respondents got COVID infection after the vaccination. Due to COVID 19 and lockdown it was found that 62% respondents experienced changes in their lifestyle to greater extent. During two waves of coronavirus, 60% respondents followed the COVID appropriate behaviour during both the waves, 20% of the respondents followed the behaviour more rigorously during 1st wave as compared to that of 2nd wave, where 16% respondents followed the behaviour. In statistical analysis it was found that COVID testing and COVID infection has a significant relationship, also the relation between different age groups and COVID 19 was found to be significant. Knowledge and awareness about what to expect following immunisation will help educate the public, prevent misinformation, and reduce vaccine hesitancy³. Also, it is crucial to be cognizant of the latest characteristics of COVID-19 to be able to recognize them, take prompt treatment and circumvent complications.⁹

References

1. Ranjan R, Sharma A, Verma MK. Characterization of the second wave of COVID-19 in India [Internet]. bioRxiv. 2021. Available from: <http://dx.doi.org/10.1101/2021.04.17.21255665>
2. Bhuyan A. Covid-19: India sees new spike in cases despite vaccine rollout. *BMJ*. 2021;372:n854.
3. Jayadevan R, Shenoy R, Ts A. Survey of symptoms following COVID-19 vaccination in India [Internet]. bioRxiv. 2021. Available from: <http://dx.doi.org/10.1101/2021.02.08.21251366>
4. Sah R, Shrestha S, Mehta R, Sah SK, Rabaan AA, Dhama K, et al. AZD1222 (Covishield) vaccination for COVID-19: Experiences, challenges, and solutions in Nepal. *Travel Med Infect Dis*. 2021;40(101989):101989.
5. Jain J, Saurabh S, Goel AD, Gupta MK, Bhardwaj P, Raghav PR. COVID-19 vaccine hesitancy among undergraduate medical students: results from a nationwide survey in India [Internet]. bioRxiv. 2021. Available from: <http://dx.doi.org/10.1101/2021.03.12.21253444>
6. Samarasekera U. India grapples with second wave of COVID-19. *Lancet Microbe*. 2021;2(6):e238.
7. Jain VK, Iyengar KP, Vaishya R. Differences between First wave and Second wave of COVID-19 in India. *Diabetes Metab Syndr*. 2021;15(3):1047–8.
8. Sv P, Lathabhavan R, Ittamalla R. What concerns Indian general public on second wave of COVID-19? A report on social media opinions. *Diabetes Metab Syndr*. 2021;15(3):829–30.
9. Desai, S. (2021). Covid-19 second wave: Docs reveal new symptoms to watch out for. *Times of India*
10. (2021). First vs second wave of Covid-19 in India: Things you need to know. *Times of India*.
11. Zhou X, Ma X, Hong N, Su L, Ma Y, He J, et al. Forecasting the worldwide spread of COVID-19 based on logistic model and SEIR model [Internet]. bioRxiv. 2020. Available from: <http://dx.doi.org/10.1101/2020.03.26.20044289>
12. Mathieu E, Ritchie H, Ortiz-Ospina E, Roser M, Hasell J, Appel C, et al. Author Correction: A global database of COVID-19 vaccinations. *Nat Hum Behav* [Internet]. 2021; Available from: <http://dx.doi.org/10.1038/s41562-021-01160-2>

13. Iftimie S, López-Azcona AF, Vallverdú I, Hernández-Flix S, de Febrer G, Parra S, et al. First and second waves of coronavirus disease-19: A comparative study in hospitalized patients in Reus, Spain [Internet]. bioRxiv. 2020. Available from: <http://dx.doi.org/10.1101/2020.12.10.20246959>
14. Coronavirus second wave? Why cases increase [Internet]. Hopkinsmedicine.org. [cited 2021 Jun 30]. Available from: <https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus/first-and-second-waves-of-coronavirus>
15. Sinha A. 3 lakh Covid-19 deaths in India: How far is the second wave peak? The Indian Express [Internet]. 2021 Jun 1 [cited 2021 Jun 30]; Available from: <https://indianexpress.com/article/explained/india-covid-situation-coronavirus-deaths-how-far-is-peak-7328929/>

ANNEXURE 1 - (SURVEY TOOL- QUESTIONAIRRE)

6/27/2021

COVID-19 Study

COVID-19 Study

Hello everyone this survey is carried out to understand the severity of the COVID symptoms & post recovery effects, the behavior of people (in terms of their COVID testing, Vaccination and COVID appropriate behavior) during two different waves of COVID-19. This study is for academic purpose only. Please be assure that your responses will be kept confidential.

* Required

1. Name *

2. Age *

3. Gender *

Mark only one oval.

☐ Female

☐ Male

☐ Other:

4. Occupation *

5. Do you have any underlying medical complication? (Mention)

<https://docs.google.com/forms/d/1yJaQN63k1jV8Kc1xuwqx74UC0r2pM2bwCbVpiF18OR8/edit>

1/16

6. Have you received Covid-19 vaccination? *

Mark only one oval.

- ☐ Yes *Skip to question 8*
- ☐ No *Skip to question 7*

Vaccination Status (If No)

7. If no, then choose the appropriate reason from the following options,(Mark all that applies) *

Check all that apply.

- ☐ Unavailability of vaccination slots
- ☐ Vaccine do not give life-long immunity.
- ☐ Fear of adverse allergic reaction
- ☐ Doubtful of the studies done so far.
- ☐ Did not believe in the quality of the vaccine.
- ☐ Fear of Long-term side effects on body

Other: ☐ _____

Skip to question 20

Vaccination Status (If Yes)

8. Which type of vaccination have you received? *

Mark only one oval.

- ☐ Covishield
- ☐ Covaxin
- ☐ Pfizer Biontech
- ☐ Sinopharm
- ☐ Other: _____

9. How many doses of the vaccination have you received? *

Mark only one oval.

☐ 1

☐ 2

10. Did you get it for free or paid?

Check all that apply.

	Free	Paid
Dose 1	☐	☐
Dose 2	☐	☐

11. How much you Paid for each dose? (Mention Amount if applicable)

12. How easy or difficult was it for you to get the vaccination? *

Mark only one oval.

	1	2	3	4	
Very Easy	☐	☐	☐	☐	Very Difficult

13. Did you experience any symptoms or side effects post vaccination? *

Mark only one oval.

☐ Yes Skip to question 14

☐ No Skip to question 20

If you experienced symptoms post vaccination

14. If yes, Mark the symptoms you experienced post COVID vaccination and rate their severity on the following scale. (Mark all that are applicable)

Mark only one oval per row.

	Mild	Moderate	Severe
Tiredness	☐	☐	☐
Body ache	☐	☐	☐
Fever	☐	☐	☐
Headache	☐	☐	☐
Joint pain	☐	☐	☐
Nausea	☐	☐	☐
Vomiting	☐	☐	☐
Diarrhea	☐	☐	☐
Dizziness	☐	☐	☐
Chills	☐	☐	☐
Sore throat	☐	☐	☐
Allergic rashes	☐	☐	☐
Sleeplessness	☐	☐	☐
Giddiness	☐	☐	☐

15. What was the onset of symptoms post vaccination? *

Mark only one oval.

- ☐ < 10 hours
☐ 10-18 hours
☐ 18-24 hours
☐ > 24 hours

16. How long it took for the symptoms to subside? *

Mark only one oval.

- ☐ < 24 hours
☐ 24-48 hours
☐ >48 hours

17. Were you informed about the probable symptoms at the facility where you took vaccine? *

Mark only one oval.

- ☐ Yes
☐ No

18. Did you take any medications for the symptoms? If yes, then mention below.

Check all that apply.

- ☐ Paracetamol
☐ ORS

Other: ☐ _____

19. Did the symptoms affect your activities of daily living? *

Mark only one oval.

- ☐ Yes
☐ No

COVID-19 Infection

20. Have you experienced any symptoms of the novel coronavirus (COVID-19)? *

Mark only one oval.

- ☐ Yes
☐ No *Skip to question 41*

COVID Infection (If yes)

21. What date did your first symptom start? *

Example: January 7, 2019

22. When did you get the COVID infection? *

Mark only one oval.

- ☐ During first wave
☐ During second wave
☐ During second wave (After the first dose of vaccination)
☐ During second wave (After the second dose of vaccination)

23. Did you consult with a healthcare provider or try to get a coronavirus test because of your symptoms? *

Mark only one oval.

- ☐ Yes
☐ No

24. Did you get the test done? *

Mark only one oval.

- ☐ Yes
☐ No

25. When did you get the test done? (If applicable)

Example: January 7, 2019

26. How easy or difficult was it for you to get a test for coronavirus?

Mark only one oval.

	1	2	3	4	
Very Easy	☐	☐	☐	☐	Very Difficult

27. In how much time you received your result?

Mark only one oval.

- ☐ Same day
- ☐ Within 24 hours
- ☐ Within 48 hours

28. What are all the symptoms you experienced, which symptom was the most bothersome (i.e., severe) to you? (Mark all that applies)

Mark only one oval per row.

	Mild	Moderate	Severe
Fever	☐	☐	☐
Cough (new onset or worsening of chronic cough)	☐	☐	☐
Sore throat	☐	☐	☐
Runny nose	☐	☐	☐
Shortness of breath	☐	☐	☐
Chills	☐	☐	☐
Fatigue	☐	☐	☐
General lack of energy or malaise	☐	☐	☐
Loss of appetite	☐	☐	☐
Discomfort, tightness, or pressure in chest	☐	☐	☐
Vomiting	☐	☐	☐
Nausea	☐	☐	☐
Diarrhea	☐	☐	☐
Muscle aches	☐	☐	☐
Joint aches	☐	☐	☐
Headache	☐	☐	☐
Seizure	☐	☐	☐
Dizziness	☐	☐	☐
Altered consciousness or feeling like it was difficult to stay awake	☐	☐	☐
Loss of ability to smell	☐	☐	☐
Loss of ability to taste	☐	☐	☐

Abdominal pain

☐☐☐

Other symptom (specify)

☐☐☐

29. At what point did you seek care? *

Mark only one oval.

- ☐ Immediately when my first symptom began.
- ☐ When developed a fever.
- ☐ When had trouble breathing
- ☐ Did not seek medical care, Self isolated

30. Did you require oxygen support due to breathing difficulty? *

Mark only one oval.

- ☐ Yes
- ☐ No

31. How easy or difficult was it for you to get the oxygen? (If applicable) 1=Very Easy, 2=Easy, 3=Difficult, 4=Very Difficult, 5= Did not get it

Mark only one oval.

	1	2	3	4	5	
Very Easy	☐	☐	☐	☐	☐	Did not get it

32. Have you been hospitalized for COVID-19 because you had difficulty breathing or a respiratory infection? *

Mark only one oval.

- ☐ Yes
- ☐ No

33. How easy or difficult was it for you to get the Hospital bed? (If applicable)
1=Very Easy, 2=Easy, 3=Difficult, 4=Very Difficult, 5= Did not get it

Mark only one oval.

	1	2	3	4	5	
Very Easy	☐	☐	☐	☐	☐	Did not get it

34. What is your status now? *

Mark only one oval.

- ☐ Recovered and are symptom free.
- ☐ Are feeling better but not completely recovered (i.e., have symptoms that remain)
- ☐ Are not feeling better.

35. Did you experienced any aftereffects once you recovered from COVID? *

Mark only one oval.

- ☐ Yes
- ☐ No Skip to question 41

Post recovery effects

Symptoms you experienced Post recovering from COVID-19 infection

36. Mark the affects and their severity that you have experienced post COVID recovery

Mark only one oval per row.

	Mild	Moderate	Severe
Fever	☐	☐	☐
Cough (new onset or worsening of chronic cough)	☐	☐	☐
Sore throat	☐	☐	☐
Runny nose	☐	☐	☐
Shortness of breath	☐	☐	☐
Chills	☐	☐	☐
Fatigue	☐	☐	☐
General lack of energy or malaise	☐	☐	☐
Loss of appetite	☐	☐	☐
Discomfort, tightness, or pressure in chest	☐	☐	☐
Vomiting	☐	☐	☐
Nausea	☐	☐	☐
Diarrhea	☐	☐	☐
Muscle aches	☐	☐	☐
Joint aches	☐	☐	☐
Headache	☐	☐	☐
Fits	☐	☐	☐
Dizziness	☐	☐	☐
Altered consciousness or feeling like it was difficult to stay awake	☐	☐	☐
Loss of ability to smell	☐	☐	☐
Loss of ability to taste	☐	☐	☐

Abdominal pain

☐☐☐

Fungal Infection (Black, Yellow, White)

☐☐☐

Other symptom (specify)

☐☐☐

37. What was the onset of the aftereffects? (After how many days of recovery you experienced aftereffects) MENTION NUMBER OF DAYS *

38. Did you consult a doctor for this? *

Mark only one oval.

☐ Yes☐ No

39. Did you require hospitalization? *

Mark only one oval.

☐ Yes☐ No

40. What is your status now? *

Mark only one oval.

☐ You recovered and are symptom free.☐ You are feeling better but not completely recovered (i.e., have symptoms that remain)☐ You are not feeling better.

Behavioral Changes

41. Mark the changes you have experienced in your lifestyle due to COVID-19 and its frequency. *

Mark only one oval per row.

	Always	Often	Something	Rarely	Never
More handwashing than usual	☐	☐	☐	☐	☐
More use of hand sanitizer than usual	☐	☐	☐	☐	☐
More cleaning in your home than usual	☐	☐	☐	☐	☐
More disinfecting surfaces in your household than usual	☐	☐	☐	☐	☐
Disinfecting or wiping down groceries.	☐	☐	☐	☐	☐
Disinfecting or wiping down mail or packages.	☐	☐	☐	☐	☐
Stocking up on food and supplies	☐	☐	☐	☐	☐
Avoiding or cancelling domestic travel	☐	☐	☐	☐	☐
Avoiding or cancelling international travel	☐	☐	☐	☐	☐
Not ordering take out from restaurants.	☐	☐	☐	☐	☐
Wearing a mask when out in public	☐	☐	☐	☐	☐
Kept six feet distance from those outside	☐	☐	☐	☐	☐

42. In your opinion during which wave of lockdown you took these measures more rigorously? *

Mark only one oval per row.

	Lockdown of first wave COVID	Lockdown of second wave of COVID	Both	None
More handwashing than usual	☐	☐	☐	☐
More use of hand sanitizer than usual	☐	☐	☐	☐
More cleaning in your home than usual	☐	☐	☐	☐
More disinfecting surfaces in your household than usual	☐	☐	☐	☐
Disinfecting or wiping down groceries.	☐	☐	☐	☐
Disinfecting or wiping down mail or packages.	☐	☐	☐	☐
Stocking up on food and supplies	☐	☐	☐	☐
Avoiding or cancelling domestic travel	☐	☐	☐	☐
Avoiding or cancelling international travel	☐	☐	☐	☐
Not ordering take out from restaurants.	☐	☐	☐	☐
Wearing a mask when out in public	☐	☐	☐	☐
Kept six feet distance from those outside	☐	☐	☐	☐

43. Overall, considering all the possible ways your life may have been impacted by the COVID-19 pandemic, how much has the pandemic impacted your day-to-day life? 1= Not at all, 2= Slightly impacted, 3=Moderately impacted, 4=Very impacted, 5=Severely impacted

Mark only one oval.

	1	2	3	4	5	
Not at all impacted	☐	☐	☐	☐	☐	Severely Impacted

Thanks for participating :)

