# Second Wave Covid-19: Survey on Attitudes and Acceptance of Vaccines and Psychological Impact of Second Wave

<sup>1</sup>Dr. Nina Bhandari, <sup>2</sup>Dr. Akanksha Srivastava, <sup>3</sup>Joel Osei-Asiamah, <sup>4</sup>Navaneetha Krishnan Rajagopal, <sup>5</sup>Muhammed Yousoof Ismail and <sup>6</sup>Dr. Gilbert Roland

<sup>1</sup>Assistant Professor, Business Communication, Management Development Institute: Gurgaon, Gurugram 
<sup>2</sup>Associate Professor, Sharda University, Noida

<sup>3</sup>Department of Science and Technology Education, University of South Africa, (UNISA), Pretoria, South Africa

<sup>4</sup>Faculty, University of Technology and Applied Science, Salalah <sup>5</sup>Department of MIS, Dhofar University

<sup>6</sup>Assigned Nurse Educator, Ministry of Health & Wellness, Central School of Nursing, Port Louis, Mauritius

#### **ABSTRACT**

The second wave of COVID-19 is distressing the majority of the planet. The circumstance is disheartening in India, where the day-by-day check on May 1, 2021, will be generally triple that of the essential crest. This raised questions about approximately a conceivable second wave of coronavirus infection in 2019. (COVID-19). The aim of this overview was to find out the level of vaccine information, demeanors, and acknowledgment, as well as to survey the mental status in connection to the second wave of COVID-19. Varieties within the effective era number in India are utilized to calculate the degree of disease transmissibility and are compared to those in other nations where the moment wave has finished. Further, acceptance of COVID-19 vaccines is analyzed for Indian states by evaluating test inspiration and case death rates. At last, figures and noteworthy inputs are given based on scientific and epidemiological models. Snowball sampling at procedures was utilized to perform the online overview. The results are compared to the current COVID-19 wide scene; they choose up to urge to the mindfulness arrange, state of intellect against the antibodies, uneasiness, passionate trouble, as the affected individuals are seen as tall compared to the primary wave. It is especially critical to require care of the population's mental well-being and valuable measures to moderate its badly arranged impacts within the middle of the COVID-19 second wave far-reaching, in spite of the truth that for the patients who are recovered from the COVID-19.

**Keywords**: COVID-19, Second wave, Vaccines, Coronavirus, Attitude and behaviour, Psychological Impact, Stress, Depression

#### 1. BACKGROUND

More than a year after the World Wellbeing Organization (WHO) announced COVID-19 a widespread on Walk 11, 2020, the dangerous SARS-CoV-2 infection proceeds to undermine open life around the world. Whereas most lockout standards have been loose, social life remains distant from typical[10][12]. A few immunizations have as of late been created by Oxford Covishield/Vaxzevria), Bharat Biotech (Covaxin), and others. However, massproducing and disseminating vaccinations to cover a vast populace remains a difficult challenge. Meanwhile, most countries are also implementing anti-virus measures such as

masking, psychological distancing guidelines, partial lockdowns, and shortened shop hours to keep the virus from spreading during the vaccine program.

The second wave is distinctive from the primary wave in September 2020 in two imperative ways: to begin with, the rate of increment in modern cases is altogether higher. The increment from 10,000 to 80,000 modern cases per day from February to April has taken less than 40 days[17][18]. Preparatory investigation demonstrates that whereas the widespread has spread, the geographic forms of the moment wave closely mirror those of the

primary wave, in spite of the fact that with a more profound infiltration into level 2, level 3 cities. For the last year, 215 districts have been in the top 10% of districts in terms of case infections at one point in time. Throughout the year, nine districts have been in the top 10%. So far, the second wave has been more geographically concentrated.

The number of locales with the beat 50 percent has diminished from over 40 at the final top to less than 20 presently, reflecting a much more localized widespread. Amid the primary boom, which happened in Admirable and September, the number of locale for the best 75 percent of cases was 60-100, whereas it has been approximately 20-40 locale amid this surge. To meet the expanding request, state governments over the nation are working to guarantee the accessibility of sufficient healing center beds, both ICU and non-ICU, for COVID administration, as well as extended capacity in COVID Care Centres (CCCs) in both the open and private divisions[1][8][11]. Critical steps are required along with two directions of activity- huge scale inoculations to play down the seriousness of the infection, and breaking the chain of transmission through secure practices. A few of these proposals are as of now portion of Government advisories and plans. We unequivocally encourage a focus on the taking after activities, at the side thorough usage at the locale and neighborhood levels.

outbreak COVID-19 The second  $\alpha f$ contaminations has taken India's healthcare system off balance, with research failures and reports of critical-care bed, oxygen, and healing center shortages, effectively leaving ill patients without medication. The ice-cold quest for healing center beds may be a nationwide occurrence[2][13][14]. India is now dealing with the outbreak's myriad impacts on accessible health and social mediations, as current vulnerabilities are exacerbated and new vulnerabilities arise, in addition to the wellbeing impacts of the SARS-COV-2 infection and the COVID-19 disease. Critical social programs were severely disrupted, with health and nutrition services being scarce as a result of facility closures owing to a lack of resources or containment strategies aimed at limiting travel and curbing transmission.

Control measures that had previously been introduced in the widespread were re-

implemented in late Walk 2021 in response to the launch of the second wave[3][16]. Casual laborers who work in densely developed, lowresource metropolitan areas have suffered significantly as a result of these changes. Due to a tragedy in vocations, many people have attempted to flee the densely crowded hotspot and be near to their families by relocating to rural regions. When they're on the run, they're extremely vulnerable to violence, impulsion, and viciousness, and getting to vital properties a huge challenge.Quickened be immunization campaigns are basic to the government's endeavors to avoid the spread of COVID-19. With the later increment in episodes, the government's possess objective is to manage 5 million dosages a day to individuals over the age of 45[17][12].

The COVID-19 widespread has come to a basic point in India. To begin with put, all endeavors must be made to break the transmission chain and decrease the rate of modern diseases whereas causing the slightest harm to the economy and people's employments. At the same time, accelerated vaccines would help within the long-term control of the widespread. The past year has appeared, both inside India and in other nations, that solid political will, combined with health-system status and individual and community behavior alter, can create capably comes about. We trust that great, definitive steps taken presently will spare India from a long-moment wave of COVID-19 diseases and will put measures in put to dodge future waves of COVID-19 diseases[7][9][15].

# 2. RESEARCH PROBLEM

Vaccine hesitancy applies to the postponement or refusal of vaccines due to a lack of vaccine facilities. Factors like ease of use and confidence have an effect. Governments and societies must evaluate existing levels of awareness and ability to access a theoretically secure and reliable COVID-19 vaccine, as well as identify the root causes of vaccine skepticism[6][8]. As a result, the aim of this pan-India online survey was to determine how well our people knew about and accepted the latest COVID-19 vaccination program. Despite the fact that a few previous surveys were performed to ascertain the approval of the COVID-19 vaccine prior to its launch and usage (Sharun et al., 2020; Gautam et al., 2020; Kazi Abdul and Khandaker Mursheda, 2020), we conducted our study among the general public during India's vaccination program. Since COVID-19 vaccines are recent, there might be some doubt regarding their acceptance; as a result, we performed this research to better understand the situation and enable better use of resources.

It's important to understand as much as possible about the public's desires, reality, demeanors, and attitudes through an irresistible challenging outbreak in the second wave. Such data will help public health authorities and doctors in their attempts to increase connectivity. According to our interpretation, the bulk of research on this episode focuses differentiating the evaluation of disease transmission and clinical characteristics of infected individuals, genomic characterization of the virus, and public health administration challenges[4][5]. In either event, investigative studies have been published on the effect of the COVID-19 second wave on India's general population's mental wellbeing. This study also provides a description of the real psychological condition of citizens in the second wave of COVID-19, which is not discussed in other reports.

#### 3. OBJECTIVE OF THE STUDY

- 1. To analyze the level of acceptance of COVID-19 vaccines among individuals, as well as their attitudes and behavior during the second wave.
- 2. To investigate the current psychological status of individuals during the secondwave.
- 3. To suggest the measures and coping techniques to improve the psychological health of the individual during the pandemic situation of second

# 4. RESEARCH METHODOLOGY

The current survey research is focused on important information gathered from 780 people from various parts of Tamilnadu, India. The data were collected using the snowball sampling survey methodology. Using an online survey, a cross-sectional overview plan was developed to assess the public's acceptance and attitude toward vaccines, as well as their psychological status response during the affliction of COVID-19 second wave. The online summary was initially distributed to friends and understudies, who were then encouraged to spread it to others.

#### 5. SURVEY DEVELOPMENT

Socio-statistical factors, data and questions regarding COVID-19 vaccines; cautious COVID-19 preventive measures; the emotional effects of the COVID-19 second wave; and emotional well-being state were all included in the summary.

Age, gender, conjugal position, ability, range of place, and occupation are all included in the statistics portion. The survey's information level included specifics regarding COVID-19 vaccines and their approval level variables, which included the level of attitude toward vaccines, in conclusion, the level of fulfillment of COVID-19 second wave wellbeing results, the drift of unused cases and moving, and potential COVID-19 contamination care during the second wave. Respondents were required to show where their data came from. Self and other family members contracting COVID-19 second wave and the probability of recovery if contaminated is among the concerns regarding COVID-19 factors. A self-administered survey that has been adopted by the Tamilnadu community for assessing the degree of mental effect after the presentation of a public health emergent. In the second wave, people's pain, nervousness, fatigue, and anxiety is used to measure their mental wellbeing.

### 6. RESEARCH LIMITATIONS

The study's most significant limitation is the participants' self-report. As a consequence, there's a chance the reports may be skewed. The study was conducted virtually over the internet, giving researchers access to people who use social media. As a consequence, they don't worry about it right away, and they don't come up with a clear finding to back up a desire for a concentrated public health activity. A select number of peers was oversampled, which culminated in choice prejudice. Another stumbling block is that self-reported levels of emotional impact, uneasiness, depression, and stretch cannot be updated on a regular basis for a mental health expert's evaluation. In terms of satisfaction with the health information received and precautionary measures. respondents could have shown socially unfavorable answers.

# 7. DATA ANALYSIS AND INTREPRETATION

Based on our survey it was found that the utmost respondents (55.8%) contributed towards this research are females and under the age group of 30-40 years (37.5). Major contributions to this study are from married (60.6%) respondents and most of the samples

have post graduate (63.5%) educational qualification. People residing in village (47.1%) have contributed much to our study and among the respondents, majority are private employees (60.6%). This constitutes the overall demographic analysis of the samples of this research.

# 7.1. Awareness, Attitude and Behaviour of People towards Vaccination

Table 1: Awareness, Attitude and Behaviour of People towards Vaccination

Content	ttitude and Behaviour of People towards Vacc Factors	Percentage (%)
	<1 hr	50
Daily media exposure to covid-		31.7
19 related information	2-4 hrs	12.5
	>4 hrs	5.8
	Strongly agree	58.7
Awareness of vaccines and its	<u> </u>	28.8
importance	Neutral	7.7
_	Disagree	2.9
	Strongly disagree	1.9
	TV	19.2
	Social media	45.5
	Government ads	15.2
Source of awareness about the	Newspaper	10.1
vaccines	Friends and family	10.1
	Others	0
Possess vaccine hesitancy	Yes	45.2
	No	54.8
	Very important	60.6
Think vaccinating is important	Important	27.9
	Not much important	11.5
	Less important	0
vaccinated	Yes	20.2
	No	79.8
Safety measures and medicines	Yes	21.4
prescribed by hospitals after vaccination	No	78.6
	Feeling safe and relaxed	49
	Fear of side effects	0
Feeling after vaccination	Positive feeling on vaccines	51
	Others	0
Doubt on vaccine safety and its	Yes	44.2
efficacy	No	55.8
	Travelling long to vaccinate	7.8
	Maximum time of spending in vaccine centre	22.3
vaccinating	Demand of vaccines	59.9
	Cost of vaccines in private hospitals	7.8
	Others	2.2

**Table 2:** Reason for vaccine hesitancy

Tuble 2. Reason for vaccine nestrancy				
Reason for Vaccine hesitancy	Mean	Rank		
Fear of risk or other serious problems	2.60	2		
Fear of vaccine or injection	2.50	3		

Fear of side effects	2.50	3
Fear of going in crowd to vaccinate	3.00	1

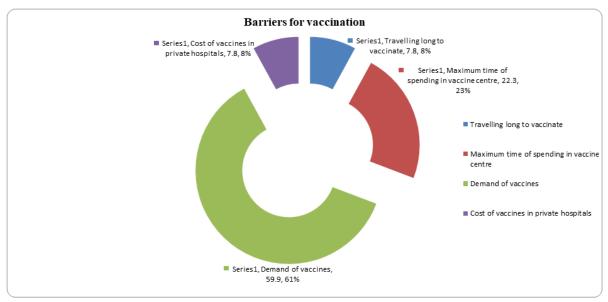


Fig 1: Barriers for vaccination

Based on the awareness level and attitude of the respondents, most of them (50%) gets a daily media exposure of less than 1 hour on COVID-19 related information and they strongly agreed (58.7%) that they have awareness about vaccine and its importance. Social media (45.5%) gives the major source of awareness about the vaccine to the people. About 64.8% of the respondents have no hesitancy to the vaccine and for the rest reason for the hesitancy was no response (53.8%). In the same time majority (60.6%) of the respondents feels the importance of vaccination. Based on the study majority

(79.8%) of the respondents are not vaccinated. It is evident from the research that the most of the people (78.6%) opined that safety measures and medicines are not prescribed by hospitals after vaccination. Most of the respondents (51%) have positive feeling after the vaccination. Based on the study it is evident that majority (55.8%) of the respondents have no doubt on the vaccine safety and its efficacy. About 59.9% of the respondent opined that demands of vaccines are the barrier they faced in vaccination.

#### 7.2. Psychological Status of People during Infected and Covid-19 Recovered

 Table 3: Psychological Status of People During Infected and Covid-19 Recovered

Content	Factors	Percentage (%)
Currently tested positive	Yes	8.7
	No	91.3
Anyone from family or friends tested positive	Yes	34.6
	No	65.4
Any of you been in ICU for treatment	Yes	9.6
	No	90.4
Sleep problems affected post recovery	Yes	45.2
	No	54.8
Fear or anxiety during treatment	Yes	71.2
	No	29.8
Fear on family safety	Yes	94.2
	No	5.8
Felt lonely and depressed during treatment	Yes	66.7
	No	33.3
Fear much of second wave than first	Highly agree	66.3
	Agree	24

	Somewhat	7.7
	Disagree	1
	Strongly disagree	1
Experience change in sleeping and eating	Yes	50
pattern in second wave	No	50
Need of psychological support during lockdown	Yes	57
of second wave	No	21
	Somewhat	22
Need of psychological support after recovering	Yes	46
	No	28.8
	Somewhat	25.2

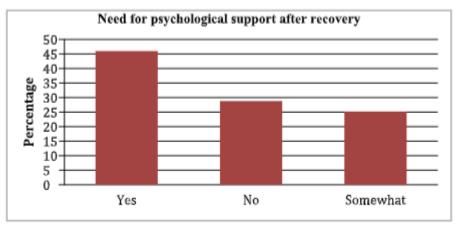


Fig 2: Psychological support need after recovery

Based on the inferential **Table 3** majority of our respondent (91.3%) are COVID-19 negative. About 65% of the respondent family members are also tested negative. It shows that 8.7% of respondents are COVID-19 positive and about 34.6% of respondents have their family or friends affected with COVID-19. Most of the respondents (90.4%) have not admitted in the ICU for treatment. Most people opined that they face no sleep problem post recovery period but they faced fear or anxiety problem (71.2%)

during the treatment. Fear on family safety was felt by at most (94.2%) the entire respondent. Major portion of the unit (66.7%) felt lonely and depressed during the treatment and it was an equalizer (50 -50%) in the respondents opinion towards their experience about change in sleeping and eating pattern. Need for psychological support after recovering from COVID-19 is almost half of the people told that they requires the support.

#### 7.3. Psychological Status of People in Second Wave of Covid-19

Table 4: Psychological Status of People in Second Wave OF COVID-19

Content	Factors	Percentage (%)
	Fear of increase in death	45.2
Kind of fear/anxiety during	Fear of hospital capacity	29.8
Second wave	Fear of traveling	4.8
	Fear on effectiveness of vaccine	8.7
	Fear of unemployment	11.5
	Other	0
Feel adaptable in second wave	Yes	53.5
lock down than first	No	21.5
	Somewhat	25
Mood swings or change in	Yes	66.3
behavior after return from	No	33.7
treatment		
	Feeling isolated from friends	24

Impact on your life if the	A negative effect on mental health	28.8
situation continues	Not having access to creativity	1.9
	Loss of income	45.2
	Other	0
Anxiety about health more that	Strongly agree	52.9
first wave	Agree	39.4
	Neutral	7.7
	Disagree	0
	Strongly disagree	0
Sleep problems in second wave	Yes	39.4
	No	60.6
Nervous about current	Yes	63.5
circumstances	No	15.4
	Somewhat	21.1
Feel Stress of second wave	Yes	70.2
	No	11.5
	Somewhat	18.3
Fear much of second wave than	strongly agree	66.3
first	Agree	24
	Somewhat	7.7
	Disagree	1
	Strongly disagree	1
Need of psychological support	Yes	57
during lockdown of second		21
wave	Somewhat	22
Need of psychological support	t Yes 46	
after recovering	No	28.8
	Somewhat	25.2

**Table 5:** Functioning of people during second wave

Function during second wave	Mean	Rank
I stay at home and I do not go outside at all	2.47	1
I stay at home and go out occasionally	2.75	3
I stay at home, but I go to work regularly	2.50	2

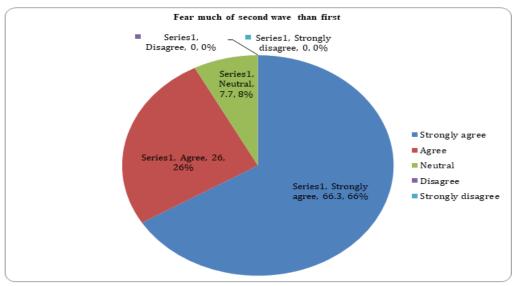


Fig 3: Fear of second wave

Based on the descriptive analysis of the above **Table 4**, among the major concern of fear/anxiety during second wave, fear of increase in death (45.2%) was found to be the major concern of the respondent. Most of the respondent (53.5%) feels adaptable in the second wave lock down compared to the first lock down. Based on the majority (66.3%) of the respondent faced mood swings / change in behavior after returning from treatment. Loss of income (45.2%) was the main impact on the respondent's life with the prevailing situation of COVID-19 pandemic. Most people (60.6%) stay at their home and don't go outside at all

during second wave. It was strongly agreed (52.9%) by majority of the sample unit that they faced anxiety about health during the second wave but they felt no sleep problems (60.6%) faced during second wave. In the same time majority of the people (63.5%) were feeling nervous and stress (70.2%) during the second wave of COVID-19. It was strongly agreed (66.3%) by the people that they fear much about the second wave compared to first. It is evident from the research that most people (57%) needs psychological support during the lock down of the second wave and also after the recovery (46%) from COVID-19.

# 7.4. Socio Demographic and Attitude and Behaviour of People towards Vaccine

H<sub>1</sub>: There is a significant relationship between the age and attitude towards vaccine

Chi-Square Tests				
	Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square	47.367 <sup>a</sup>	12	.000	
Likelihood Ratio	25.240	12	.014	
Linear-by-Linear Association	.378	1	.539	
N of Valid Cases	104			
a. 14 cells (70.0%) have expected count less than 5. The minimum expected count is .02.				

**Interpretation:** Since the value of P<0.05, we reject the null hypothesis. So there exists a

significant relationship between the age and attitude towards vaccine

H2: There is a significant relationship awareness on vaccine safety and vaccine hesistancy

Chi-Square Tests					
	Value	df	Asymp. Sig.	Exact Sig.	Exact Sig.
			(2-sided)	(2-sided)	(1-sided)
Pearson Chi-Square	10.612a	1	.001		
Continuity Correction <sup>b</sup>	9.359	1	.002		
Likelihood Ratio	10.761	1	.001		
Fisher's Exact Test				.001	.001
Linear-by-Linear Association	10.510	1	.001		
N of Valid Cases	104				
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 20.79.					

**Interpretation:** Since the value of P<0.05, we reject the null hypothesis. So there exists a significant relationship between the awareness on vaccine safety and vaccine hesistancy

#### INTERPRETATION

Based on the above table its clear that vaccination barriers exists among India and

based on the barriers, Spending more time in the vaccination centre acts as a major barrier among people to vaccinate, next travelling long disaster to vaccinate acts as a next main barriers among people, and demand of vaccines is also considered a barrier which is ranked in third position.

Factors			Chi-square value	Interpretations
Gender	Vs.	Vaccine	0.203	Significant relation between gender and vaccine
hesitancy				hesitancy

Area Vs. Mode of awareness	0.00	Significant relation between area and mode of
		vaccine awareness
Awareness of vaccine Vs.	0.00	Significant relation between awareness of vaccine
Vaccine hesitancy		and vaccine hesitancy
Vaccine safety doubts Vs.	0.001	Significant relation between doubts on vaccine
Vaccine hesitancy		safety and hesitancy on vaccines
Awareness of vaccine Vs.	0.003	Significant relation between awareness level of
Fear of second wave		vaccine and level of fear on second wave
Fear of second wave Vs.	0.040	Significant relation between change in sleep
Change in sleep pattern		pattern and fear of second wave

# 7.5. Awareness of Vaccines and Level of Fear during Second Wave

Second wave fear	Pearson Correlation	.317**
	Sig. (2-tailed)	.000
	N	510

# INTERPRETATION

From the above Table, it's understood that correlation is significant at the 0.01level (2-

tailed). It's evident that there is positive correlation between awareness of vaccines and level of fear during secondwave.

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		emafterrec	atnsleeppat	uthealth	minsecon	sabouts
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Anxietab out health	Pearson Correlation	.192	.404**	1	.420**	.244
	Sig. (2-tailed)	.156	.002		.001	.069
	N	56	56	56	56	56
Sleepprblmin Second wave	Pearson Correlation	.025	.410**	.420**	1	.282*
	Sig. (2-tailed)	.853	.002	.001		.035
	N	56	56	56	56	56

# 7

#### .6. SUMMARY OF FINDINGS

In the statistical analysis, the maximum of the people (55.8%) contributed towards this research are females and under the age group of 30-40 years (37.5). Major contributions to this study are from married (60.6%) respondents and most of the samples have post graduate (63.5%) educational qualification. People residing in village (47.1%) have contributed much to our study and among the respondents, maiority are private employees (60.6%).(60.6%) of the respondents feels the importance of vaccination. Based on the study majority (79.8%) of the respondents are not vaccinated. It is evident from the research that the most of the people (78.6%) opined that safety measures and medicines are not prescribed by hospitals after vaccination. Most of the respondents (51%) have positive feeling after the vaccination. Based on the study it is evident that majority (55.8%) of the respondents have no doubt on the vaccine safety and its efficacy. About 59.9% of the respondent opined that demands of vaccines are

the barrier they faced in vaccination. Most people opined that they face no sleep problem post recovery period but they faced fear or anxiety problem (71.2%) during the treatment. Fear on family safety was felt by at most (94.2%) the entire respondent. Major portion of the unit (66.7%) felt lonely and depressed during the treatment and it was an equalizer (50 -50%) in the respondents opinion towards their experience about change in sleeping and eating pattern. Need for psychological support after recovering from COVID-19 is almost half of the people told that they requires the support. (53.5%) feels adaptable in the second wave lock down compared to the first lock down. Most people (60.6%) stay at their home and don't go outside at all during second wave. It was strongly agreed (52.9%) by majority of the sample unit that they faced anxiety about health during the second wave but they felt no sleep problems (60.6%) faced during second wave. In the same time majority of the people (63.5%) were feeling nervous and stress (70.2%) during the second wave of COVID-19. It was strongly

agreed (66.3%) by the people that they fear much about the second wave compared to first. It is evident from the research that most people (57%) needs psychological support during the lock down of the second wave and also after the recovery (46%) from COVID-19. There is positive relation between the awareness and vaccine hesitancy. There is a positive relation between vaccines importance and anxiety level in the secondwave.

#### 7.7. SUGGESTIONS

According to the results, the majority of the participants are conscious of the present pandemic situation in India as well as vaccinations. Additionally, it seems that the majority of the participants regard vaccine demand as a significant obstacle that the Indian government should strongly consider. Some of them have had questions about the vaccine and its efficacy, which could be answered by experts by calling any toll-free number, raising vaccine knowledge and value. 71 percent of respondents rated the episode's emotional impact as direct and fearful during treatment; 51 percent of respondents cited significant depression side effects; 46 percent cited high fear and intense stress levels, as well as the desire for psychiatric help long after they recovered. Health professionals should take this into consideration, because they should be able to identify high-risk individuals dependent on sociodemographic evidence in order to include early mental therapies. Since younger people are more receptive to smart phone apps, healthcare providers can recommend providing web or smart phone-based psychoeducation and mental mediations to patients to reduce the post-recovery psychological impact. The major effect of the current covid pandemic on the respondents' lives was a loss of jobs. As people thought about the second wave, they were more anxious and sad than when they thought about the first wave. According to the study, the majority of patients need psychiatric assistance during the second wave lockdown, and health care providers should take this into account. To - the impact of rumours, the government and health experts must provide detailed health details during the outbreak. The precautionary steps taken to prevent the dissemination of have COVID-19 could preventive psychological effects in the early stages of the outbreak.

#### 8. CONCLUSION

During the COVID-19 episode's second level. As the affected individuals are seen as a minority and isolated from the majority of the population, the outcomes are related to the existing COVID-19 widespread; they include increased mindfulness, anxiety, uneasiness, and passionate difficulty. A lower mental impact of flare-up, vaccination supply understanding, and lower levels of stretch, uneasiness, and suffering were all linked to specific up-to-date and exact health details and some cautious interventions. The mediation measures used by various health experts and government bodies in combating vaccination doubts and demand for vaccination may help in removing the danger during the time of vulnerability; however, multivariate analyses done on previous flare-ups seem to have longterm cognitive and mental wellbeing impacts on the populace ev During the COVID-19 second wave, it is important to prioritize the public's emotional health and take constructive measures to mitigate its negative consequences.

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