

# Post-Covid Era: Predictive Aspect of Psychological Condition Due to Sudden Pandemic

Smriti Ojha<sup>1</sup>, Amrita Singh<sup>1</sup>, Ayoni Pandey<sup>1</sup>, Siddhant Kumar<sup>1</sup>, Sudhanshu Mishra\*<sup>1</sup>

Department of Pharmaceutical Science & Technology, Madan Mohan Malaviya University of Technology, Gorakhpur, Uttar Pradesh, India

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## \*Address for Correspondence:

Sudhanshu Mishra, Department of Pharmaceutical Science & Technology, Madan Mohan Malaviya University of Technology, Gorakhpur, Uttar Pradesh, India

## Abstract

Covid-19 has impacted the lives of people in various aspects positive as well as negative. It has an impact on different areas of life, including the economy, industries, global markets, agriculture, human health, etc. The virus caused disruptions to daily life and restrictions on activities in many communities during its multiple outbreaks. Hope for a potential end to the pandemic emerged with the stepping up of vaccination campaigns. However, the continual appearance of mutant strains and vaccine hesitancy has been problems both nationally and internationally. People's normal activities, routines, and livelihoods have been disrupted by self-isolation and quarantine, potentially leading to an increase in loneliness, anxiety, depression, insomnia, excessive alcohol and drug use, and self-harm or suicidal activity. The psychological aspects of the post-covid-19 era are the effect of covid-19 on CNS, and physiological and psychological diseases caused due to covid-19. The article explains Post Trauma Stress Disorder as a psychological scar, Social evils arising due to covid-19, and predictive reasons for the increase in mental illness

**Keywords-** Covid-19, Pandemic, Mental Health, Post Trauma Stress Disorder, Depression, Anxiety

## Introduction

Covid-19 has impacted the lives of people in various aspects positive as well as negative. If looking at the ratios of the last few years, there is a very big change in the livelihood of the people, their work, their way of living and many more normal activities whether it could be negative change or positive change. Negative in the sense people have lost their job, due to less knowledge about the virus the health of the people was affected disastrously, and the economical and educational system of the country has collapsed. And talking in the positive sense, now people are more aware of their health, certain vaccines were developed in India which leads to the development of the pharmaceutical sector and now we know what a pandemic means.<sup>1</sup> The Covid-19 pandemic has affected every single aspect of life, may it be a financial condition, physical condition, global condition, or especially mental condition. One most important outcome of the pandemic is that now more and more people are concerned about mental health, people are treating it as a disease and it is not a myth anymore.<sup>2</sup> There are various diseases also which result as an aftereffect of covid-19. Like physiological disease ( heart problem, lung problem), neurological disease ( toxic muscle dysfunction, CNS inflammation), and psychological disease ( depression, anxiety, Post Trauma Stress Disorder). It is also been observed that during the period of covid-19 the suicides among people have increased, and there are possible reasons for it which are discussed in the following paper.<sup>3</sup>

## Covid-19 impact on various aspects of life

Covid-19 has left a mark on everyone. Every individual has suffered from it in different possible ways, some people lost their job, some lost their loved ones, and many more.<sup>4</sup> And all these situations have created chaos in the life of the people, The balance between social and personal life was impacted by covid-19 because due to the work-from-home culture people were not working in a professional environment and according to several studies, many people found it frustrating and it was also not good for the health. Various impacts also include the impact on the economy and financial condition of the country.<sup>5</sup>

## The psychological impact of Covid-19

Almost every person suffered a psychological imbalance due to covid-19. The main reason for psychological imbalance was the fear of corona in the people.<sup>6</sup> People were so afraid of getting infected by corona that they were not even coming in touch with their families. Fear was not the only reason people were suffering, those people who were not afraid were careless about corona which was more dangerous than fear because they were careless about themselves and also for other people around them.<sup>7</sup>

## Fear

Many medical practitioners say that one of the main reasons for deaths caused by corona is the fear of the people. People who were afraid did not initiate a checkup for covid-19. Many

people quarantined themselves without any checkups just because they were afraid of the corona. The fear of people has separated them from their own families because of which they were not able to get counseling and ultimately went into depression.<sup>8</sup> Those people who were suffering because of their fear were getting suicidal thoughts because they were so afraid that they started thinking that they are dangerous to their own families.

### Carelessness

The carelessness of people was more dangerous than the fear because, the person who is afraid, is thinking about the safety of himself and also thinking for the safety of other people around him but, the person who is careless about corona that person is not only careless for himself but also other people. The careless person will not take any type of safety measures and along with his safety, he will also put the safety of others in danger. Many people living in rural areas were not taking any type of safety measures.<sup>9</sup> The reason behind this is not only the carelessness but also the bad education system. Because they were not getting any pieces of information about covid-19. And they were living freely and creating a good climate for covid to increase itself.<sup>10</sup>

### Social evils arising due to covid-19

In our society, there is a steep increase in social evils during the pandemic. There was an increment in the rate of unemployment, the education system has been collapsed and there were very less or no jobs for migrant workers, and due to all these reasons, many social evils have arisen. Some are shown below-

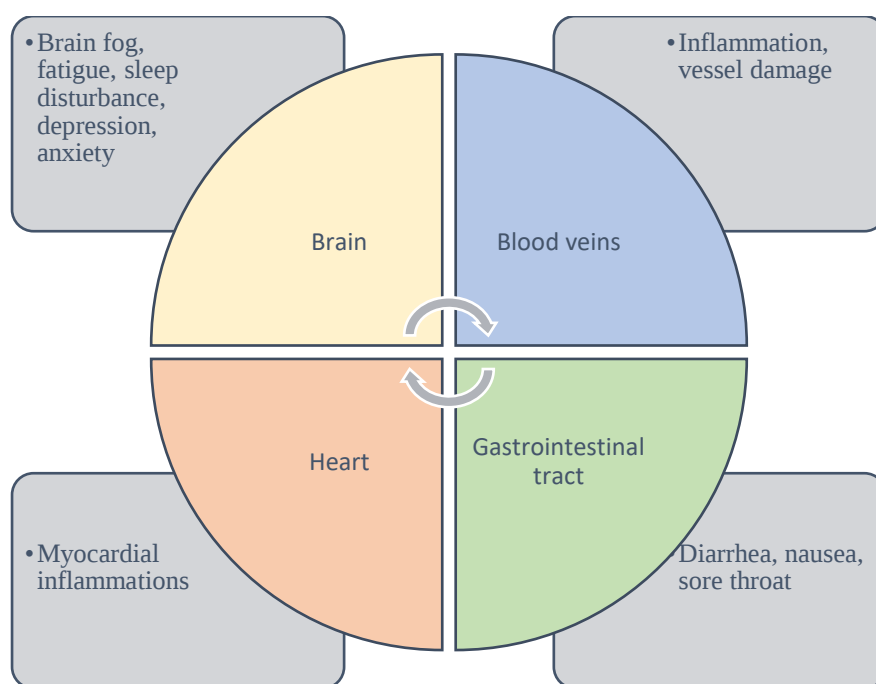
**Alcohol abuse-** To avoid or to stay away from reality, people started taking support alcohol and other drugs. And this has pathetically affected the health of people because an excessive amount of alcohol is very injurious to health.<sup>11</sup>

**Robbery-** Due to the no-job scenario, people who were struggling for their bread and butter have taken support of robbery to fulfill their needs, and due to this, it has created a very unsafe environment for people and fear among them.

**Domestic violence-** Due to the increased anxiety among the people they became more aggressive and it then leads to an increased no. of domestic violence cases. Usually, women and children of the families have suffered more from this.

### Effect of COVID-19 on CNS

Some studies have presented that covid-19 has also shown some neurological symptoms like nausea, vomiting, loss of smell and taste, difficulty in breathing, dizziness, and many more. And from several studies, it is clear that this is due to the invasion of severe acute respiratory syndrome coronavirus 2 (SARS-COV-2), which directly or indirectly affects the central nervous system of humans. The first-line defense of the brain is the blood-brain barrier, which constitutes astrocytes cell (a type of neuroglial cell) and it protects the brain from the invasion of various pathogens. And the viral pathogen (like covid -19) can use different pathways for CNS invasion, and one of them is the hematogenous route- which is an infection of endothelium and peripheral nerves or olfactory sensory neurons and due to this the smell and taste ability of people has affected by covid-19. Every pathogen has a receptor on the host cell, which helps the virus to enter the cell.<sup>12</sup> And in the case of covid-19, the host receptor is ACE2 (angiotensin-converting enzyme) also called as gateway enzyme of covid-19 and it has been found highly expressed in the gastrointestinal epithelium and this leads to the development of nausea or vomiting.<sup>13</sup> The ACE2 receptors which are present in the glial cells of neurons are also called the target cell of covid-19 and it may also lead to the development of dry cough. It can also affect the body in various ways as shown in the following figure 1.0.



**Figure 1: Effect of ACE2 enzyme on various organs of the body**

Covid-19 has affected the pathophysiology of humans, which means the after-effect diseases caused in humans due to covid-19. There are generally three kinds of diseases caused due to covid-19

**1. Neurological diseases caused due to covid-19** –There are various neurological diseases caused due to covid-19, like

cerebrovascular diseases that affect the blood flow in the brain, CNS dysfunction (it affects the structure or function of the brain or spinal cord), etc.<sup>14</sup> Figure 2 shows the rate of neurological manifestation in covid-19.

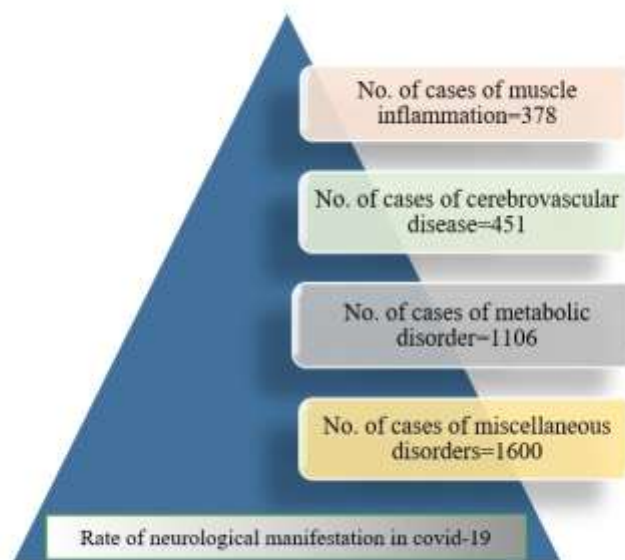


Figure 2: Various neurological disease during covid-19.

**Physiological diseases caused due to COVID-19** –There are various diseases, some of them are cardiovascular diseases, stroke, long-term breathing problems, chronic kidney impairment, and Some adults and children experience multisystem inflammatory syndrome too, In this condition, some organs and tissues become severely inflamed.

**Psychological diseases caused due to COVID-19** – This covid-19 pandemic has impacted the psychological condition (shown in figure 3) of people all around the world in a hazardous way. This pandemic is a myth-buster in the field of mental health because after this era people have an increased concern about mental health, which is also a positive outcome of this pandemic.<sup>15</sup> The psychological diseases, the first question that arises is how and why it is increasing. Is there any common reason for that or do all people suffer from it? If yes, then it is very important to talk about covid from a psychological aspect too. Various diseases that are the result of this pandemic like anxiety, depression, bipolar disorder, insomnia, schizophrenia, psychosis, OCD, PTSD, etc. And there is the various reason for it too and one very important reason why people were suffering from mental disorders during the pandemic is the lack of human interaction. And Indians are the people of extended family culture, so for them, it is quite difficult to stay away from people for a longer duration.<sup>16</sup>

### 1. PTSD- A psychological scar

Mental health disorders the first thing that comes to mind is that it is a very huge thing, it can be easily recognizable in anyone, or like other diseases, it will show clear symptoms, but it is not true! One such disease through which people suffer silently or with few symptoms is PTSD. Also called as Post Trauma Stress Disorder, it is significant by its name that it refers to a mental traumatic disease that is followed by a period of trauma, usually, people suffer from it after some mishappening in their lives whether it could be personal ( e.g. loss of loved ones, financial loss, etc) or global (e.g. war, pandemic, etc). Generally, people suffering from it experience flashbacks, nightmares, and severe anxiety. PTSD is a psychological scar because it is a scar of any trauma on the brain and thoughts. It takes a certain period (a few months or years) to recover from it, and still, full recovery is very difficult to achieve because there is no exact treatment available for it.<sup>16</sup> According to the survey done by The Hindu, A total of 234 responders were conducted to study the psychological impact of covid-19 induced due to lockdown. Thereof a total of 28.2% of responders were found to have PTSD. It is more important to study it because it leads to various other disorders like the fear of trauma for a longer time leads to depression, and when certain flashbacks came suddenly it leads to anxiety and panic attack.<sup>17</sup> And this condition for a longer duration leads to hallucinations and it leads to psychosis. So as per the current situation, it is not very difficult to find a PTSD patient near us, so it is every individual's responsibility to keep checking on their close ones' mental health because empathy is the biggest key to fighting against mental disorders.<sup>18,19</sup> The first thing to observe is the change in physical and emotional reactions like if they always sense danger, they are easily frightened, they suffer overwhelming guilt and shame, irregular eating habits and sleep cycle, very aggressive behavior, etc. so if all these traits are present in a person so it is very important to treat them delicately, not make them feel that they are problematic

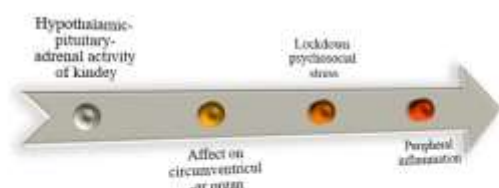


Figure 2: Impact of various covid-19 factors on the glial cells of the brain

and as a therapist, the first step to treat them is to calmly and patiently make them realize that they are ill because like any other disorder in PTSD to accepting it is the first step to cure it.<sup>20</sup> There are two kinds of treatment available for PTSD-

**Non-drug treatment-** It includes cognitive therapy and treatment with the help of psychology.

**Pharmacotherapy-** It includes the use of drugs for treating PTSD. Like anti-depressants drugs, anti-psychotic drugs, anti-adrenergic drugs, etc. Table No. 1 includes various mental disorders.

**Table 1: Various Mental disorders all around the world**

| S. No | Diseases                            | Definition                                                                                                                                                                                                                                                                             | No. of cases all over the world                                                                                                                                                                                                                                                               | Ref |
|-------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 1.    | Anxiety and Depression              | <b>ANXIETY</b> -A mental health condition marked by intense feelings of worry, anxiety, or fear that interferes with daily activities.<br><b>DEPRESSION</b> - A set of conditions that can cause a person's mood to fluctuate or change and can also cause other mental health issues. | According to the Lancet study, around all around the world, there are 76 million additional cases of anxiety disorders, and 53 million major depressive disorders were recorded last year due to the covid pandemic. This represents a 26% and 28% increase in the two disorders respectively | 21  |
| 2.    | Bipolar disorder                    | A disorder associated with episodes of mood swings ranging from depressive lows to manic highs. In it, the person shows various personalities.                                                                                                                                         | By 2020 there are 2.8% of people ( which is estimated to be around 7 billion) all around the world have bipolar disorder.                                                                                                                                                                     | 22  |
| 3.    | Insomnia                            | Recurrent issues with falling and staying asleep. The majority of insomnia instances are caused by bad sleeping habits, chronic illness, stress, anxiety, lack of exercise, or particular medications.                                                                                 | According to the data of the Insomnia Severity Index a 37% increase in the rates of clinical insomnia (from 14.6% to 20%) from before to peak of the COVID pandemic.                                                                                                                          | 23  |
| 4.    | Schizophrenia (leads to psychosis)  | Schizophrenia involves a psychosis, a type of mental illness in which a person can't tell what's real from what's imagined. At times, people with psychotic disorders lose touch with reality and started hallucinating.                                                               | According to WHO Schizophrenia affects approximately 24 million people or 1 in 300 people (0.32%) worldwide. This rate is 1 in 222 people (0.45%) among adults. It is not as common as many other mental disorders                                                                            | 24  |
| 5.    | PTSD ( post-trauma stress disorder) | It is a kind of mental disorder that occurs after a certain period of trauma e.g.- war, pandemic, family issues, etc                                                                                                                                                                   | About 15 million adults have PTSD during a given year. This is a very small percentage of people who have experienced trauma. Approximately 8 out of every 100 women, or 8%, and 4 out of every 100 males, or 4%, have PTSD at some point in their lives..                                    | 25  |

### Increased suicidal tendencies among people during the time of pandemic –

There is always one question that has arisen in the mind of millions of people, why and how suicides have taken a steep increase during the pandemic? Are there any measures available to control it? Or why do people find it easy to kill themselves than to live in this society? The answers to these questions are still unknown, but still we try to figure out the reasons.<sup>26</sup> Some of the possible reasons for the increased suicidal tendencies among people are-

**Social distancing-**Due to social distancing, there was no or very less amount of communication taking place, and people were not able to meet their loved ones this has created a sense of loneliness in them and this made them kill themselves<sup>27</sup>.

**Sense of Fear-** Due to the chaos and fear among the people have developed a feeling of confusion, and they were not able to decide what to do, and this has increased anxiety among them which then leads to increased suicidal tendencies among them.<sup>28</sup>

**Lack of therapy-** Due to not being able to get proper therapy/counseling. Many people went into depression and

the person suffering from depression, in his/her later stage develops a feeling of increased suicidal tendencies.

### Conclusion

The life of the people was affected by covid-19 and certain studies have certified it too. No aspect of life is untouched by covid-19 whether it could be the economical factor-like (global stock exchange, tourist arrival rate, foreign exchange earnings from tourism in India, rate of import and export industries, etc.), Health factors like various types of diseases ( physiological diseases, neurological diseases, and psychological diseases). There is no doubt that people have become more attentive to their health after the pandemic especially their psychological health, because due to the pandemic people have suffered mental trauma which leads to various disorders like anxiety, depression, PTSD, etc. There are numerous cases of PTSD after the pandemic because everyone has suffered through different kinds of trauma during that period. Due to the stress, the suicidal tendencies among people have also increased and no. of suicides during the pandemic has also increased. But now as things are about to get better, people are getting used to the new environment and everyone is trying all the possible ways to accept the new normal. People are more alert now, so it is possible that

shortly we will figure out different ways to tackle this kind of pandemic.

## Conflict of interest

The authors declare no conflicts of interest, financial or otherwise.

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