

# Corona Virus Disease SARS-COVID-19 and Mental Health Post Infection

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**Abstract:** As we all know the Corona virus 2019 or covid-19 is a dreadful virus originated in Hubei, Wuhan city of Mainland China early in December 2019. This virus contracted the disease to the whole world after the first outbreak in China. The mental health issues such as depression, panic, stress, fear etc., are developed along with social and economic downtime. Fear or Phobia, anxiety, stress and panic are the psychological conditions experienced by every human being during the pandemic and it's a normal phenomenon. As per few studies conducted on Covid-19 pandemic there is increasing risk for mental disorders in the categories of public and health care workers.

Keeping in mind the difficulties faced by covid patients during their illness, this study provides a mental health picture. Severity of depression, anxiety and insomnia are measured using valid instruments. To meet the objectives of study 100 Covid -19 RT-PCR positive patients selected post discharge from a multi-speciality hospital in Vijayawada. The tools used in this study are PHQ 9 item (patient health care questionnaire), GAD-7item (generalised anxiety disorder) and 7- item Insomnia severity index. These questionnaires filled by patients post recovery during their review in outpatient department. By the time they had RTPCR negative reports with them. A simple random sampling is done.

All covid patients suffer from some levels of mental illness. My study concludes, majority of people suffered from severe depression. Moderate number of patients suffered from severe anxiety. And minimal number of patients suffered from severe clinical insomnia.

**Keywords:** Covid-19, pandemic, mental health, depression, insomnia.

## 1. Introduction

Corona virus disease 2019 or covid-19 caused by the dreadful strange and horrific virus without any treatment, originated in Hubei, Wuhan city of Mainland China early in December 2019. It is a public health crisis and the virus probably originated from bats and transmitted through unknown intermediary animals to humans. This virus contracted the disease to the whole world after the first outbreak in China. The mode of transmission of the corona virus is respiratory droplets, direct or close contact with infected people or by coming in contact with respiratory secretions of the infected person. For example, by coughing, sneezing, talking closely, and singing. The strain of the virus is called as Severe Acute Respiratory Syndrome Corona virus -2 (SARS cov-2). The incubation period (the period between infection and appearance of symptoms) ranges from 2 to 14

days. According to WHO more than 30 million people infected by this virus confirmed in 188 countries including the territories. WHO also announced this disease outbreak as "Public health emergency of international concern" on 30th January 2020. On March 11th again declared as a "Pandemic".

The psychological issues such as depression, panic, stress, fear etc., are the main barriers during the illness and recovery. This impaired the individual's thinking behaviour as well. Fear or Phobia, anxiety, stress and panic are the psychological condition experienced by every human being during the pandemic. These are common during any epidemics namely Ebola, SARS, MERS, H1N1 etc. The above-mentioned psychological disturbances affect people to a certain extent that along with the physical illness causing worsening of the quality of life. As per few studies conducted on Covid-19 pandemic there is an increasing risk for mental disorders in the categories of public and health care workers too.

The main symptoms of this viral infection are fever, dry cough, hypoxia (oxygen deficiency) long lasting fatigue, myalgia, sore throat, shortness of breathing without any exertion and diarrhoea. Majority of people who got covid-19 infection are asymptomatic. The disease may exhibit only with mild symptoms in most people. The elderly and those who are suffering from comorbid ailments such as diabetes mellitus, cardiac problems and hypertension will present with severe disease. The main diseases are sub-pleural pneumonia, multi organ dysfunction syndrome, coagulation disorders, neurological involvement (CVA), and acute respiratory distress syndrome. The estimated mortality rate of covid-19 infection is 2-3%. The main organs affected by this SARS covid-19 disease are lungs causing pneumonia and ARDS (acute respiratory distress syndrome), then heart with arrhythmias and heart attacks, blood vessels causing coagulation disorder, kidneys affecting the efficiency leading to acute kidney injury, gastrointestinal system may present with symptoms such as severe diarrhoea and coagulopathy affecting the brain causing infarcts or haemorrhage.

Diagnosis is carried out by the high resolution computerized tomographic chest scan which is the gold standard test. It shows how much the lungs are affected and the severity score is also measured by the Radiologists. There is another confirmatory test the microscopic examination of the deep nasal swab (nasal

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pharyngeal) and detection of virus in respiratory secretions. It is known as RT-PCR test (Real Time -Reverse Transcriptase Polymerase Chain Reaction). Common laboratory tests may conclude with normal or low white cell counts, elevated C-reactive protein (CRP), elevated D-Dimer, elevated LDH levels, elevated interleukins etc.

Due to the high infection and relatively high mortality rate, people are naturally scared of contracting corona infection. The over estimation of death toll, the pandemic related issues like social distancing, quarantine, isolation all these issues became social stigma. The fear due to uncertainty is affecting people's physical and mental health. Though feeling of anxiety in this dreadful pandemic situation is more of normal human reaction but long-lasting sustainability of anxiety will eventually affect the immune system. According to O Donovan *et al.* the exaggerated neurobiological sensitivity to threat in anxious individuals leads to sustained threat perception thereby increasing the likelihood of anxiety related diseases and disorders. "Death is not the opposite of life, but a part of it" Haruki Murakami. Once the individual is exposed to corona infection the possibility of death hangs over everyone as it is unknown unique viral disease and unpredictable to mankind.

Treatment is essentially supportive and symptom control; role of antiviral agents is still a trial. Vaccines arrived and the long wait has ended. Still prevention entails home isolation of suspected cases and those with mild illnesses and strict infection control measures at hospitals that include contact and droplet precautions. The global impact of this new epidemic is yet uncertain. Positivity and following stringent preventive measures to avoid spreading of the disease is the main part of treating covid-19 patients.

Depression – is a mood disorder, characterised by persistently low mood, a feeling of sadness and loss of interest in daily activities which may last for few weeks. This is also known as common cold of chronic illness. There are different types of depression and many causes and risk factors. Chronic illness is the main culprit and pandemics such as corona.

Anxiety – is an emotion characterised by feelings of tension, worried thoughts and physical changes like: elevated blood pressure, fast heart rate etc. Anxiety though it is a normal human response to dangerous situations, the long-lasting symptoms end up harming the mental health causing anxiety disorder.

Insomnia – Unable to sleep for normal sleeping hours known as insomnia or sleep disorder which could be a short term or a long- term sleep disorder in which one has trouble in falling asleep or staying asleep.

## 2. Significance of the Study

The purpose is to help patients and family a better understanding of corona virus disease and the effects. To estimate the levels of mental disturbances one is suffering from. The relationship between mental health disorders and corona infection. The treatment modalities will be selected according to the need.

Depression and anxiety have negative mental effects on covid-19 patients. Along with physical exhaustion person will

be mentally stressed. As it's a feeling of stigma to be contracted by the corona virus patient and family members are afraid of the society imagining the way they will be looked and treated as aliens.

Talk therapy and a bit of counselling to the patient and family would help to overcome the after effect. Though there is more motivating speech which is circulated in social media from covid-19 survivors and getting immunity or helping others by donating convalescent plasma to affected needy patients, people still are afraid and reluctant in getting them checked or in denial. This aspect people need more education. Emphasis on hand hygiene and wearing masks needs to be reinforced in all social media to avoid spreading the infection.

## 3. Aim and Objective

1. To know the impact of psychological disorders on covid patients.
2. To identify the severity of mental disorders.
3. The study the relationship between mental illness and covid-19.
4. To identify the severity of corona disease.

## 4. Hypothesis of the Study

HO1: There is no relationship between mental disorders and corona disease.

HA1: There is relationship between mental disorders and corona disease.

## 5. Scope of the Study

This study is based on the responses of the covid-19 positive patients of all age groups post recovery from Sunrise Hospitals, a multi-speciality hospital in Vijayawada.

The data collected will show the severity of depression, anxiety and insomnia. The severity of depression, anxiety and insomnia are measured using valid scales such as PHQ-9, GAD-7 and Insomnia severity index-7.

## 6. Statement of the Problem

Covid-19 patients, affected by the main mental health disorders such as depression, anxiety and insomnia leading to hospitalisation with the fear of dying. In this study I am concentrating about the mental status of covid-19 patients and how to alleviate them from suffering. The problem statement of the research stated as "to find out the severity of anxiety, depression and insomnia" in my selected sample.

## 7. Intervention

In this study efforts are put in to encourage covid-19 patients to deal with their physical illness positively, by evaluating the mental status finding out whether they are suffering from any anxiety, depression or insomnia? If yes, the severity of anxiety, depression and insomnia are measured. Good rapport is established with patient and family by asking questions related to their personal data such as name, age, place where they belong to etc. Then they were asked to fill in the questionnaire

and the instructions which are explained in detail as per the questionnaire.

### 8. Research Methodology

The goal is to clarify the design of the study, instruments used, sample selection, data collection, instruction, procedure, and scoring, statistical analysis. The data collected from the questionnaire is tabulated for further analysis. This study is carried out in covid-19 wing of Sunrise multi-speciality hospital in Vijayawada.

Respondents are aware of the research as it is explained clearly that it is University based research, designed to evaluate the severity of anxiety, depression and insomnia. Consent is taken from every participant and they can discontinue from this research at any time. Assurance about confidentiality and anonymity were given to the respondents. The cooperation from patient and family are considered making sure not to cause any inconvenience or discomfort while collecting data.

The research design refers to the overall strategy that one chooses to integrate the different components of the study in a coherent and logical way. Effective addressing of the research problem constitutes the blue print for collection, measurement and analysis of data. The use of descriptive exploratory survey design by recruiting available purposive sample of covid patients is undertaken.

### 9. Sampling

In order to collect data for the study purpose, covid-19 patients were interviewed during their review post discharge from the hospital. At that time, they were having COVID-RTPCR negative reports. The stratified random sampling technique is used. A total number of 100 covid-19 patients N=100, post recovery was selected between August and December 2020. Selection of hospital was also done randomly. Consent was taken before collecting the data and confidentiality maintained. Only interested candidates are considered to fill in the data. The duration was four months. Area of sampling was Sunrise Hospitals Vijayawada.

### 10. Data Collection

The data collection was done using primary data that means the researcher collected data herself from the sample. Having defined the research problem and the objectives, the data collection method determined. The research instruments used to measure the severity of anxiety, depression and insomnia are GAD-7 item scale, PHQ-9 item scale and Insomnia Severity Index -7 item scale.

*GAD-7*: This instrument has seven items and measures the anxiety over last two weeks. Scoring is done by calculating the total scores. If the score is more than 5 and less than 10 which is considered as mild level of anxiety; more than 10 and less than 15 considered as moderate; more than 15 score is considered as severe level of anxiety. Total score is 21.

*PHQ-9*: This instrument measures levels of depression 0-4 score is for minimal depression; 5-14 score is considered as mild to moderate depression and greater than 14-27 warrants

treatment showing moderately severe to severe depression. Total score is 27.

*Insomnia Severity Index*: Total score of this instrument is 28. Score of 0-7 indicates no significant clinical insomnia; 8-14 indicates sub threshold or mild insomnia, 15-21 moderate insomnia and 22-28 severe insomnia.

Keeping in mind the objectives of the study, descriptive statistical analysis is used to explain the variables of the study. Some precautions and considerations were kept in mind during the data collection; good rapport was established and maintained throughout the period of data collection. Clear instructions were given to fill in the form and made sure they understood the concept. Collected data from as many clients as possible and selected only 100 properly filled questionnaire and completed the requirements. Assurance regarding confidentiality was given to clients. Only relevant and valid questions were given.

### 11. Statistical Analysis

Data analysis and interpretation is the main part of the study as it leads to the conclusion. The collected data will be quantified, processed and presented.

Descriptive data analysis is done here which is useful because it allows taking a large amount of data and summarising it. This is one of the fundamental and 'must know' set of data. It gives a general idea of trends in the data including the mean, mode, median and range as well as count, maximum and minimum. The percentage of severity is calculated and comparison is made.

This study provided following data;

Anxiety measured using the following scale.

The calculation of GAD-7 scores out of 100 covid-19 patients.

52% suffered from severe anxiety

34% suffered from moderate anxiety

14% suffered from mild anxiety

This concludes that the percentage of severe anxiety sufferers is highest in number and we seriously need to treat those patients intensely. We could prevent deterioration of the patient by treating as early as possible.

Depression measured using PHQ-9 scale gives the following results with N=100.

29% suffered from severe form of depression.

36% suffered from moderate level.

35% suffered from mild depression.

From the above data we can conclude that even though everyone suffers from depression, the percentage of people suffers from severe depression is less and higher percentage is mild and moderate depression sufferers. As depression is a leading cause of death in any serious illness, priorities taken to treat them. Along with covid-19, mental status puts the patient to grave prognosis and these patients received treatment in intensive care unit along with counselling during the recovery from serious illness.

Insomnia measured using Insomnia Severity Index -7, data gathered from N=100 as follows;

12% suffered from severe clinical insomnia.

60% suffered from moderate insomnia.

28% suffered from mild insomnia.

The data about Insomnia gives an idea of the percentage of insomnia sufferers are more but the severe level of insomnia recorded only in 12% people which is comparatively less than the moderate insomnia sufferers. 60% of them suffered from moderate severity. According to them the above-mentioned clients received sleeping tablets during their hospital stay. Mild insomnia sufferer percentage is also 28% and they are easily manageable.

## 12. Conclusions and Suggestions

As anxiety, depression and insomnia have major impact in everyone's life, when a person suffering from a weird illness such as Covid-19 the severity doubles. The physical illness itself has no guaranteed treatment, and if the client loses hope on recovering then it's a tragic end. The ultimate moral support from health care workers, health education and the family support provided in time saved many lives. The mortality rate in patients suffering from covid-19 along with co-morbidities such as heart disease, diabetes is higher compared to the rest of the population. When these patient's mental status was assessed and treated early, most of the patients showed enormous recovery. Once the initial assessment of psychological disorders was carried out, the psychologist was consulted and complete evaluation was done and managed accordingly. The clients received daily counselling during their hospital stay. In house counsellor would be more beneficial to treat Covid patients; same suggested to the hospital management committee.

While comparing the three variables anxiety, depression and clinical insomnia, the major percentage of severity of anxiety with 52% accommodating the highest severity group. Though anxiety is severe it is not as detrimental as depression when compared between our patients.

If we take depression, severe sufferers come under the category of second highest with 29% and they definitely need total attention with counselling and pharmacology medications. Unless we give extreme care towards these patients, we would lose them. Severe depression may increase fatality rate according to few studies. The impact on the family of covid sufferers also needs to be studied as they also suffer from psychological stress. The post covid recovery infections are

also severe and life threatening, though they recovered from covid the complications are severe. In this context awareness to the family needs to be provided.

Insomnia is indirectly causing depression in most of the patients. The pharmacological medications required temporarily to treat the clinical insomnia. Clients were exhausted with physical illness and were unable to sleep due to depression or anxiety. Most of the time counselling only did not yield much benefit so medications were prescribed to treat them.

## 13. Research Gap

To conduct a study of the mental status of the family members of corona contracted clients.

The methods of counselling which are required specifically related to the recovery of the corona clients.

The effects of socio-economical status on recovery from the disease.

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