



IJPPR

INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals

ISSN 2349-7203



Human Journals

Research Article

June 2022 Vol.:24, Issue:3

© All rights are reserved by P. SOUMYA, et al.

A Survey on Post-COVID 19 Complications



IJPPR
INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals



ISSN 2349-7203

***1P. SOUMYA, 2C. SATISH KUMAR, 3M. BINDU
BHASINI, 4G. SAHITHYA, 5T. CHANDU, 6M. SAI
CHANDANA, 7GOHAR JAMALI, 8NEHA TABASSUM**

*¹Assistant professor, Smt. Sarojini Ramulamma College
of Pharmacy, Mahabubnagar, Telangana. India.*

Submitted: 20 May 2022
Accepted: 25 May 2022
Published: 30 June 2022

Keywords: Post-Covid 19 Complications, COVID-19, physiological mental disorders, GIT-related problems, and respiratory problems

ABSTRACT

In less than 2 years, the COVID-19 pandemic has created an emergency state globally. This contagious virus has not only raised concerns over general public health but has also caused a number of physiological mental disorders, GIT-related problems, and respiratory problems. According to our analysis, it can be concluded that the COVID-19 pandemic in affects mental and physical health in individuals. Therefore, in the current crisis, it is vital to identify individuals prone to diseases or disorders from different groups and had different layers of promotion, so that with appropriate treatment strategies, techniques, and interventions, the general population's health is preserved and improved.



HUMAN JOURNALS

www.ijppr.humanjournals.com

INTRODUCTION:

The **COVID-19 pandemic** is an ongoing global pandemic of coronavirus disease 2019 (COVID-19), caused by severe respiratory syndrome coronavirus 2 (SARS-CoV-2), declared by the World Health Organization (WHO) in March 2020. The novel virus was identified in Wuhan, China, in December 2019; a lockdown in Wuhan and other cities in Hubei province failed to contain the outbreak, and it spread to other parts of mainland China and around the world. The WHO declared the outbreak a Public Health Emergency of International Concern on 30 January 2020, and later a pandemic on 11 March 2020. Since 2021, Variants of the virus have resulted in further waves in several countries, with the Delta, Alpha, and Beta variants being the most virulent. As of 23 July 2021, more than 192 million cases have been confirmed, with more than 4.13 million confirmed deaths attributed to COVID-19, making it one of the deadliest pandemics in history (1).

Who first discovered coronaviruses?

Avian infectious bronchitis was first described in newborn chicks in 1931 by Schalk & Hawn (J Am Vet Med Ass 1931; 78:413-23) and by the Bushnell & Brandly in 1933 (Poultry Science 1933; 12:55- 60). These papers were both cited by Beach & Schalm, 1936, who confirmed that the infection was due to a filterable virus and identified two strains, with cross-immunity.

Why are they called coronaviruses?

As the journal nature reported in 1963, "these viruses are members of the previously unrecognized group which (the virologists) suggest should be called the coronaviruses, to recall the characteristic appearance by which these viruses are identified in the electron microscope."

The word "corona" has many different meanings, but it was a sun that the virologists had in mind when they choose the name coronaviruses. As they wrote, they committed "the characteristic 'fringe' of projections" on the outside of the virus with the solar corona (not, as some have suggested, the points on a crown).

EPIDEMIOLOGY:

The COVID-19 pandemic has exploded since cases were first reported in China in December 2019. As of July 1, 2021, more than 182 million cases of COVID-19 -caused by SARS-CoV-2 infection-have been reported globally, including more than 3.9 million deaths.¹ Individual of all ages is at risk for SARS-CoV-2 infection and severe disease. However, the probability of serious COVID-19 disease is higher in people aged ≥ 60 years, those living in a nursing home or long-term care facility, and those with chronic medical conditions. In an analysis of more than 1.3 million laboratory-confirmed cases that were reported in the United States between January and May 2020, 14% of patients required hospitalization, 2% were admitted to the intensive care unit, and 5% died.² The percentage of patients who died was 12 times higher among those with reported medical conditions (19.5%) than among those without medical conditions (1.6%), and the percentage of those who were hospitalized was six times higher among those with reported medical conditions (45.4%) than among those without medical conditions (7.6%). The mortality rate was highest in those aged > 70 years, regardless of the presence of chronic medical conditions. Among those with available data on health conditions, 32% had cardiovascular disease, 30% had diabetes, and 18% had chronic lung disease. Other conditions that may lead to a high risk for severe COVID-19 include cancer, kidney disease, obesity, sickle cell disease, and other immunocompromising conditions. Transplant recipients and pregnant people are also at a higher risk of severe COVID-19.³⁻¹⁰ Data from the United States suggest that racial and ethnic minorities experience higher rates of COVID-19 and subsequent hospitalization and death.¹¹⁻¹⁵ However, surveillance data that include race and ethnicity are not available for most reported cases of COVID-19 in the United States.^{4,16} Factors that contribute to the increased burden of COVID-19 in these populations may include over-representation in work environments that confer higher risks of exposure to COVID-19, economic inequality (which limits people's ability to protect themselves against COVID-19 exposure), neighborhood disadvantage,¹⁷ and lack of access to healthcare.¹⁶ Structural inequalities in society contribute to health disparities for racial and ethnic minority groups, including higher rates of comorbid conditions (e.g., cardiac disease, diabetes, hypertension, obesity, pulmonary diseases), which further increases the risk of developing severe COVID-19.

Infectiousness/Transmissibility of SARS CoV2

The reproduction number (R_0) is the expected number of secondary cases that could arise from 1 case in a susceptible population. R_0 is the essence of infectious disease epidemiology and indicates the risk of an epidemic spread. Most studies have estimated the R_0 for SARS-CoV2 to be within a range of 2.0 to 3.0. The other parameter which determines infectivity is the secondary attack rate. It is defined as the probability of an infection occurring in a specific group of susceptible people exposed to a primary case (e.g., household contacts or closed contacts). The secondary attack rate provides an insight into how social behaviors affect transmissibility. The secondary attack rates among household contacts were similar in South Korea and the United States (7.5% and 10.5%, respectively).⁴

Incubation period and serial interval

The mean or median incubation period of the disease ranges from 5 to 6 days. Lauer *et al* estimated that 2.5% of the patients will develop symptoms within 2.2 days (95% CI, 1.8-2.9 days) and 97.5% of patients will develop symptoms within 11.5 days (95% CI, 8.2-15.6 days). Serial interval refers to the time interval between the onset of symptoms in the primary case and the second case. The mean serial interval is estimated to be approximately 4 to 5 days.

Clinical manifestations:

Fever is probably one of the most common manifestations of the disease. In a large study from China, although fever was present in 44% of patients at admission, but after admission, 88% developed fever. Dry cough is reported in approximately 65 to 70% of patients. Among patients from Europe, anosmia or hyposmia and loss of taste have been reported in 85% to 88% respectively. Anorexia is also a frequent complaint. Myalgia and dyspnea were seen in approximately 30% of patients. In a meta-analysis of 60 studies including 4243 patients, the prevalence of gastrointestinal symptoms was 17.6% (95% CI 12.3-24.5%). Gastrointestinal symptoms include diarrhea, abdominal pain, and vomiting/nausea in 13%, 9%, and 10% respectively. The clinical course of the disease varies widely. In the study of Wang *et al*, the median time from the first symptom to dyspnea was 5 days, to hospitalization 7 days, and acute respiratory distress syndrome (ARDS) 8 days. ICU admission was required for patients who developed ARDS (61%), arrhythmia (44%), or shock (30%). Patients treated in

ICU are older (median age 66 years) and more likely to have comorbidities (72%).

Risk factors associated with adverse outcomes.

Although the disease can affect any age group, the elderly and patients with comorbidities are at risk for severe disease. Data from the China and the United States indicate that the hospitalization rates, ICU admissions, and mortality rates are higher in older adults. The Chinese center for disease control and prevention identified comorbidities such as cardiovascular disease, diabetes mellitus, chronic respiratory disease, hypertension, and cancer to be associated with adverse outcome.

SYMPTOMS:

People with COVID-19 have had a wide range of symptoms reported-ranging from mild symptoms to severe illness. Symptoms may appear 2-14 days after exposure to the virus. Anyone can have mild to serious symptoms. People with the symptoms may have COVID-19.

- Fever or chills
- Cough
- Shortness of breath or difficulty breathing
- Fatigue
- Muscle or body aches
- Headache
- New loss of taste or smell
- Sore throat
- Congestion or runny nose
- Nausea or vomiting
- Diarrhea

When to seek emergency medical attention

- Trouble breathing
- Persistent pain or pressure in the chest
- New confusion
- Inability to wake or stay awake
- Pale, gray, or blue-colored skin, lips, or nail beds, depending on skin tone.

MODE OF TRANSMISSION:

The Transmission of COVID-19 is the passing of coronavirus disease 2019 from person to person. The disease is mainly transmitted via the respiratory route when people inhale droplets and particles that infected people release as the breath, talk, cough, sneeze, or sing. Infected people are more likely to transmit COVID-19 when they are physically close to others. However, the infection can occur over long distances particularly indoors.

Infectivity begins as early as three days before symptoms appear and people are most infectious just before and during the onset of symptoms. It declines after the first week, but infected people remain contagious for up to 20 days. People can spread the disease even if they are asymptomatic.

TREATMENT:

The most common symptoms of COVID-19 are a fever, coughing, and breathing problems. Unless you have serious symptoms, you can most likely treat them at home, the way you would for a cold or the flu. Most people recover from COVID-19 without the need for hospital care. Call your doctor to ask about whether you should stay home or get medical care in person.

Scientists are trying to make new medicine and test some existing drugs to see whether they can treat COVID-19. In the meantime, there are many things that can relieve symptoms, both at home and the hospital.

At-home coronavirus treatment:

If your symptoms are mild enough that you can recover at home, you should:

- Rest. It can make you feel better and may speed your recovery.
- Stay home. Don't go to work, school, or public places.
- Drink fluids. You lose more water when you sick. Dehydration can make symptoms worse and cause other health problems.
- Monitor. If your symptoms get worse, call your doctor right away. Don't go to their office without calling first. They might tell you to stay home, or they may need to take extra steps

to protect staff and other patients.

- Ask your doctor over the counter medicines that may help, like acetaminophen to lower your fever.

METHOD:

The questionnaire was created, Designed, and disseminated using the Google forms platform.

Participants were encouraged to fill out the form and assist in sharing the questionnaire with their family members, friends, and relatives.

Thus, participants were recruited by a snowball sampling technique. Moreover, participants limited to 1 response to avoid duplicated or exaggerated data. Included participants were those currently living in Telangana, speak Telugu, had given an informed consent and successfully completed the questionnaire.

The questionnaire consists of 15 questions related to autonomic nervous system, Central nervous system, gastrointestinal system, cardiovascular system, and respiratory system.

In this questionnaire, YES or NO option was given.

RESULTS:

We conducted online survey aiming to obtain responses from 121 adults in Telangana, India. Respondent sampling was random. We collected 121 eligible questionnaires between August 5th to August 6th, 2021.

During the study period, 121 individuals who recovered from COVID-19 participated in the survey via Google forms. The survey was performed with a total number of 121 individuals irrespective of age and gender.

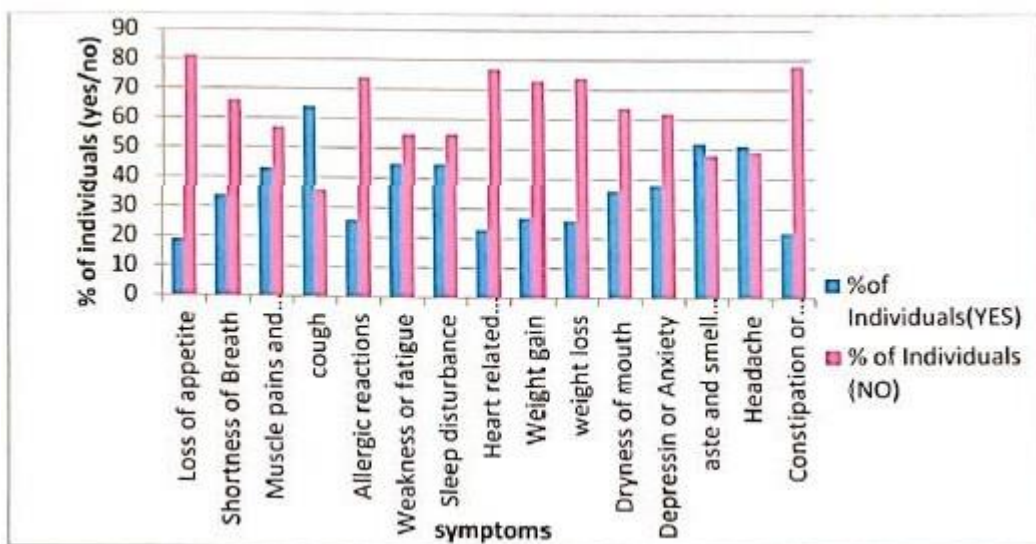


Figure No. 1

Table No. 1

SI. No	% of individuals (yes)	% of individuals (no)
Loss of appetite	19	81
Shortness of breath	34	66
Muscle pains and Joint pains	43	57
Cough	64	36
Allergic reactions	26	74
Weakness or Fatigue	45	55
Sleep disturbance	45	55
Heart-related problems	23	77
Weight gain	27	73
Weight loss	26	74
Dryness of mouth	36	64
Depression or anxiety	38	62
Taste and smell recovery	52	48
Headache	51	49
Constipation or Diarrhea	22	78

DISCUSSION:

Based on results, we found that information about post-COVID-19 complications. There is no big change in the appetite after recovery.

A degree of breathlessness is common after acute COVID-19. Severe breathlessness, which is rare in patient so where not hospitalized, may require urgent referral. Breathlessness tends to improve with breathing exercises. Pulse oximeters may be extremely useful for assessing and monitoring respiratory symptoms after COVID-19, and we could find no evidence that their use in the home leads to increased anxiety.

According to this survey, 34% of individuals are suffering from shortness of breath.

This study explores most of the individuals are suffering from muscle pains and joint pains after recovery, 64% of individuals are suffering from cough. It is indicated that, even after recovery some respiratory-related symptoms are persistent. Here weight gain and weight loss percentage is equal, it may depend upon the working of metabolic system.

Most publications on COVID-19 and mental health have emphasized individual reactions to the pandemic such as anxiety, stress and conditions related to broken routines, loneliness, and social isolation in unaffected individuals (16). The World health organization has issued guidance on these. The post COVID-19 is often associated with low mood, hopelessness, heightened anxiety, and difficulty sleeping. According to our survey report 45% of the individuals are suffering from sleep disturbances.

Ischemic stroke, seizures, encephalitis, and cranial neuropathies have been described after COVID-19, but these all seem to be rare. A patient suspected of these serious complications should be referred to a neurologist (6). According to our study, 38% of individuals have depression or anxiety.

The Profound and prolonged nature of fatigue in some post-acute COVID-19 individuals shares features with chronic fatigue syndrome described after other serious infections include SARS, MERS and community-acquired pneumonia. We found no published research evidence on the efficacy of either pharmacological or non-pharmacological interventions on fatigue after COVID-19. Here about 45% of the individuals from suffering with fatigue and weakness.

It is too early to say whether these sociodemographic patterns persist in post-acute COVID-19. Our own experience suggests that patients with post-acute COVID-19 are from diverse social and cultural backgrounds. Many have comorbidities including diabetes, hypertension, kidney disease, or ischemic heart disease.

The covid infection not only impacts the respiratory system but-in the second wave- it has also been found to affect the other organs in the body, mainly the digestive system.

It has been seen the digestive issues after covid recovery have become common, with problems of bloating, gaseousness, acidity, acid reflux, constipation and exacerbation of irritable bowel syndrome (IBS) seen in patients. In our study GIT related problems seen in 22% percent of post COVID-19 individuals.

Dryness of mouth (xerostomia) is quite common in covid patients, but even after recovery some of the individuals are having dryness of mouth.

Many people who suffer from allergies may have symptoms that overlap with symptoms of COVID-19, without actually having COVID-19. Conversely, people who have suffer from allergies may have similar symptoms that could be due to COVID-19 and may go unnoticed as allergy symptoms. It is therefore important to distinguish between allergy symptoms and any new symptoms that arise which could be due to COVID-19. Here, 26% of individuals susceptible to allergic manifestations.

CONCLUSION:

In less than 2 years, the COVID-19 pandemic has created an emergency state globally. This contagious virus has not only raised concerns over general public health but has also caused several physiological mental disorders, GIT-related problems, and respiratory problem. According to our analysis, it can be concluded that COVID-19 pandemic in affect mental and physical health in individuals. Therefore, in the current crisis, it is vital to identify individuals prone to diseases or disorders from different groups and had different layers of promotion, so that with appropriate treatment strategies, techniques and interventions, the general population's health is preserved and improved.

REFERENCES

1. Perlman, S., Netland, J. Coronaviruses post-SARS: Update on replication and pathogenesis. *Nature reviews. Microbiology*, 7(6): 439-50.
2. Chang, H-W., Egberink, HF., Halpin, R., Spiro, DJ., Rottier, PJM. Spike protein fusion peptide and feline coronavirus virulence. *Emerging Infectious Diseases*, 2012; 18(7): 1089-95.
3. Laude, H., Van Reeth, K., Pensaert, M. Porcine respiratory coronavirus: Molecular features and virus-host interactions. *Veterinary Research*, 1993; 24(2): 125-50.
4. Zaki, AM., van Boheemen, S., Bestebroer, TM., Osterhaus, ADME., Fouchier, RAM. Isolation of a novel coronavirus from a man with pneumonia in Saudi Arabia. *The New England Journal of Medicine*, 2012; 367(19): 1814-20.
5. Bermingham, A., Chand, MA., Brown, CS., Aarons, E., Tong, C., Langrish, C. et al. Severe respiratory illness caused by a novel coronavirus, in a patient transferred to the United Kingdom from the Middle East, September 2012. *Euro surveillance: Bulletin Européensur les maladies transmissibles = European Communicable Disease Bulletin*, 2012; 17(40): 20290.
6. Buchholz, U., Müller, MA., Nitsche, A., Sanewski, A., Wevering, N., Bauer-Balci, T. et al. Contact investigation of a case of human novel coronavirus infection treated in a German hospital, October-November 2012. *Euro Surveillance: Bulletin Européensur les maladies transmissibles= European Communicable Disease Bulletin*, 2013; 18(8).

