

A Survey-Based Study on COVID-19 Related Health Complications

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The COVID-19 (Coronavirus Disease) pandemic is a serious global health crisis that has affected numerous nations. COVID has affected the livelihood, economy, and mental and physical health of people all over the world. A survey-based study was carried out in August 2021, to understand the pre and post health complications related to COVID-19. Active research was carried out by conducting a survey about the mental and physical health difficulties pre- and post-COVID. The sample size for the survey consisted of 102 responses from individuals from various age groups and backgrounds. Various factors such as gender, age group, precautions, vaccination status, COVID infection status, mental stress, physical and mental health complications post-COVID were studied and their relation with COVID infection was also considered.

Keywords: COVID- 19, Pandemic, Vaccination, Physical and Mental health complications.

1 Introduction

The sudden eruption of the respiratory ailment known as Coronavirus Disease of 2019 (COVID-19) is the most current hazard to worldwide wellbeing. In December 2019, COVID-19 was recognized [1]. The first established case of COVID was reported on January 27, 2020, in Kerala [2]. The COVID pandemic has caused significant damage to human life around the globe, posing an unparalleled danger to community health [3]. The COVID-19 pandemic has also exposed several flaws in India's healthcare systems, which were unprepared to deal with a high number of patients who needed respiratory care in a short period of time. On the other hand, the disease has forced the scientific section to conjoin to combat this novel infection [4].

A recent study discovered that high levels of signs of stress and depression were found in the common inhabitants and health maintenance experts throughout the pandemic [5].

It is therefore important to carryout research to evaluate the pre and post physical and mental health complications of people due to COVID-19.

This study aimed to investigate various factors such as gender, age group, precautions, vaccination status, COVID infection status, mental stress, physical and mental health complications post-COVID infection and understand their relation and impact on the COVID infection and provide suitable solutions and/or precautions to combat the health problems associated with the pandemic.

2 Literature Survey

Table 1. Literature Survey.

Author(s)	Work Done	Citation
Nelson et al.	Nelson et al. discovered high levels of stress and depressive symptoms among the general population in North America and Europe.	[6]
Son et al.	Conducted an interview survey study to analyze the consequences of coronavirus disease on college pupils' emotional and mental wellbeing in the United States.	[7]
Wang et al.	Studied the consequences of COVID on the mental and physical health of Asians [10]. According to a Kaiser Family Foundation survey, 47 percent of people living in places reported negative mental health consequences as a result of tension or pressure related to COVID-19.	[8]
Belot et al.	Conducted a survey of six countries, namely, China, South Korea, Japan, Italy, the UK, and the four largest states in the US. The data that was collected was related to working and living conditions, income, precautionary behavior towards	[9]

	COVID- 19, and pre-COVID health features.	
Huang et al.	Conducted a survey for the mental wellbeing of medicinal workers in a tertiary infection infirmary for COVID.	[10]
Cruz et al.	Studied the origin, structural characteristics, symptoms, transmission, precautions, and treatment of coronavirus.	[11]
Talevi et al.	Studied the mental well-being outcomes and psychological influences of the corona-virus disease.	[12]
Greenberg	Reviewed the mental healthiness of COVID-19 related healthcare professionals.	[13]
Iyengar et al.	Analyzed the learning prospects and future consequences of COVID-19 on the healthcare system. They conducted a broad study of the present literature to analyze the repercussions of coronavirus disease on the medical system.	[14]

3 Methodology

A survey was carried out to look into various factors such as gender, age group, pre-cautions, vaccination status, COVID infection status, infection symptoms, mental stress, physical and mental health complications post-COVID infection, and to understand their relationship and impact on the COVID infection. The survey included the active participation of multiple people from diverse backgrounds and different age groups to some well-thought-out questions in order to understand their behavioral dynamics. Active research was conducted with a survey through electronic and digital means with a sample size of 102 people from the general public from different age groups and with diverse backgrounds. The questions were made using Google Form and had been spread through the internet to various individuals. The data was analyzed quantitatively using the pandas and matplotlib libraries of the python programming language, to study the effects of various factors, such as gender, age, vaccination, etc., on COVID infection. The dataset that has been used can be found at Ashima-Jain2001. (2021). covidCSV.csv [Data file]. Available at <https://github.com/Ashima-Jain2001/COVID-Survey/blob/main/covidCSV.csv>. The Pandas and Matplotlib libraries were used to analyze and plot the data obtained through the survey.

4 Result and Discussion

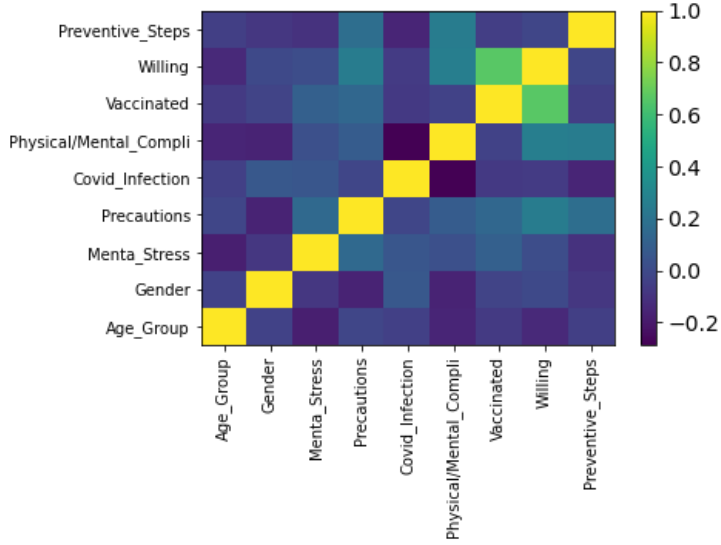


Figure 1. Heatmap showing the correlation between the responses received from the public.

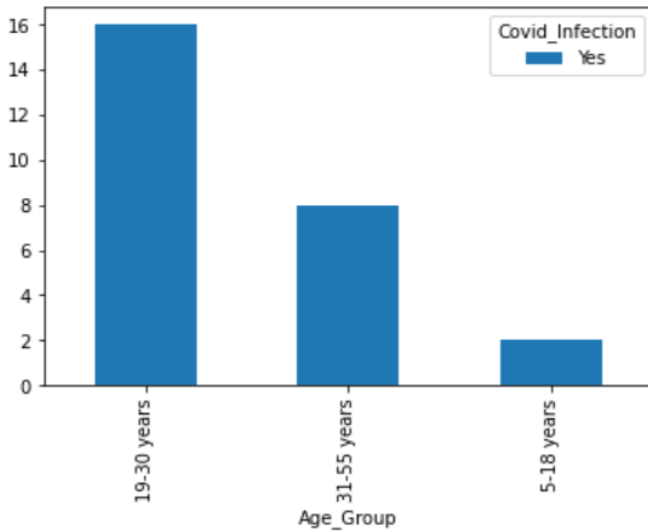


Figure 2. Bar graph illustrating the link between age group and COVID infection.

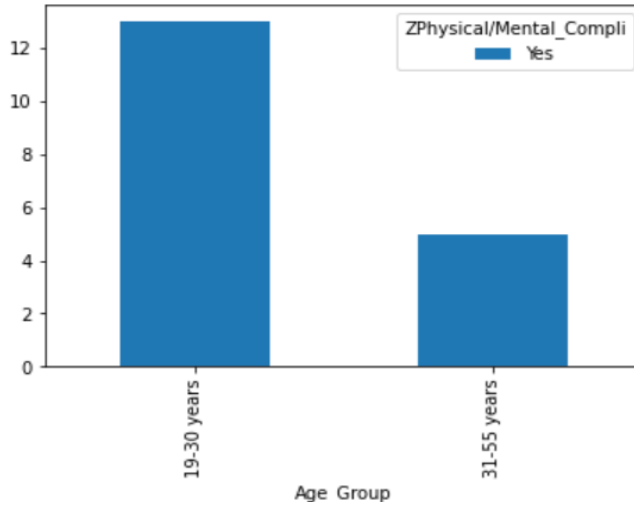


Figure 3. Bar graph depicting the association between age group and post-COVID physical and mental health complications.

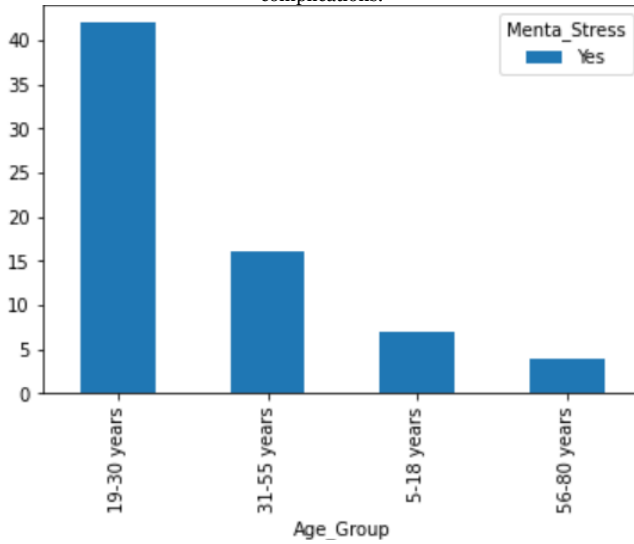


Figure 4. Bar graph displaying the link between age group and mental stress.

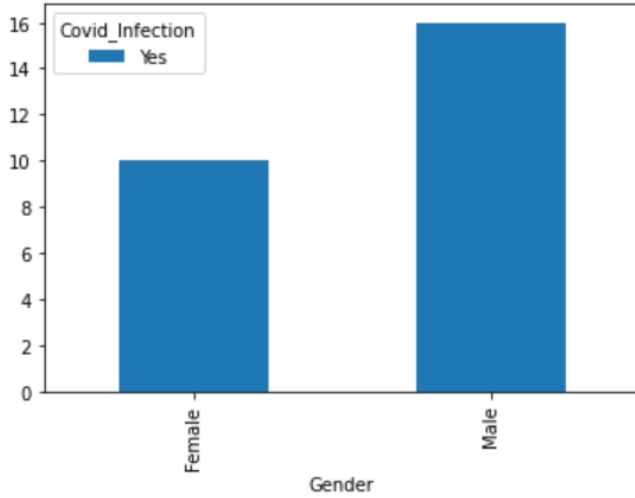


Figure 5. Bar graph illustrating the relationship between gender and COVID infection.

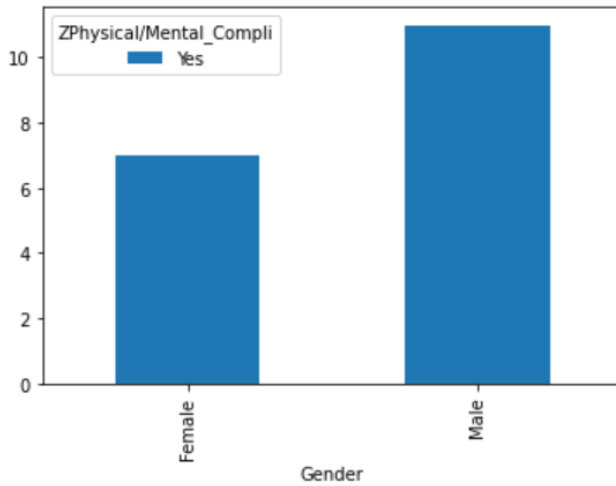


Figure 6. Bar graph presenting the correspondence between gender and physical and mental health complications.

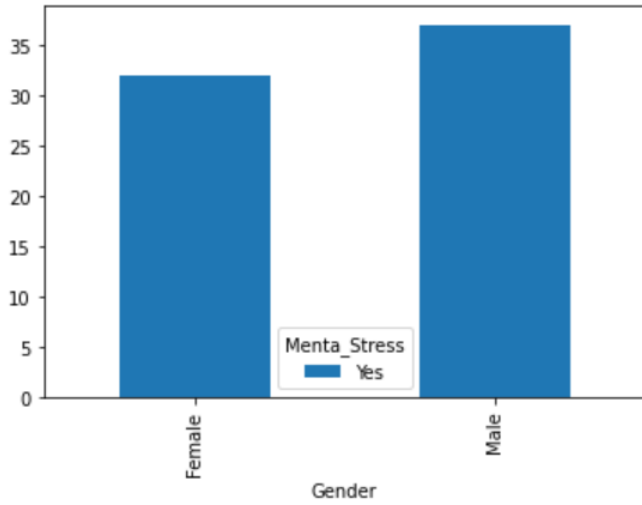


Figure 7. Bar graph displaying the interrelation between gender and mental stress.

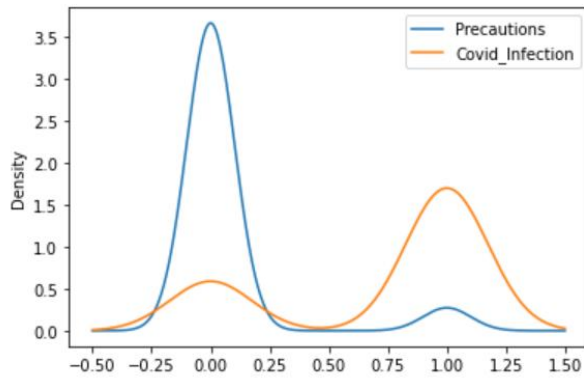


Figure 8. Density graph exhibiting the relation between precautions and COVID infection.

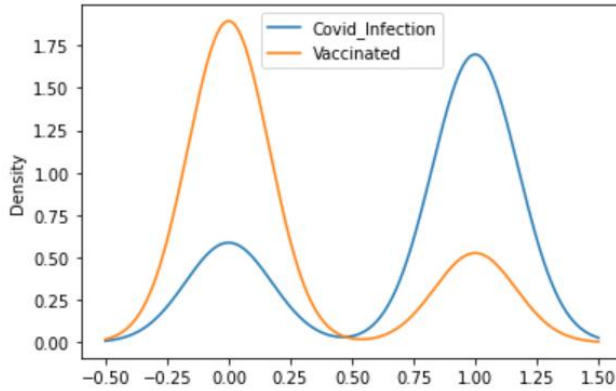


Figure 9. Density graph illustrating the relation between vaccination and COVID infection.

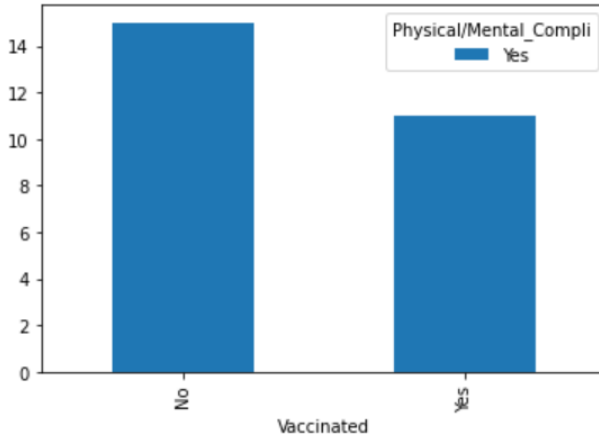


Figure 10. Bar graph exhibiting the correlation between vaccination and physical and mental health complications.

Table 2. Results and discussion.

Factors	Relationship/Observations
Age and COVID infection	The highest COVID infection was seen in the age group of 19-30 years.
Age and Physical and mental health complications	Physical and mental health complications were also found to be maximum in the age group of 19-30 years.

Symptom	Fever was the most common symptom of COVID-19 infection.
Treatment	People who have had COVID infection mostly took allopathic treatment.
Age and Mental stress	Mental stress was also found to be maximum in the age group of 19-30 years and minimum in the age group of 56-80 years.
Gender and COVID infection	COVID infection was more in males than females.
Gender and Physical and mental health complications	Physical and mental health complications were also more common in males than in females.
Gender and Mental stress	Mental stress was also higher in males than in females.
Precautions and infection	People who had taken necessary precautions experienced fewer COVID infections.

The data interpretation shows that the highest rate of COVID infection and health complications were seen in the age group of 19- 30 years. Following appropriate and suitable precautionary steps and getting vaccinated reduces the chances of getting infected with COVID. Also, vaccinated people who were infected with COVID experienced less severity of infection and had fewer physical and mental health complications. Thus, following essential precautions like wearing a mask, following social distancing protocols, sanitizing, and washing hands frequently is very important as it reduces the risk of getting infected. Several people in India are hesitant to get vaccinated, but it was found that vaccination reduces the chances of being infected and it is also effective in reducing the infection symptoms and post-COVID health complications, thus reducing the overall severity of COVID infection. Thus, it is important to get vaccinated because it is the most effective way to deal with the pandemic. Various measures to manage mental stress due to this pandemic are professional help/counselling, following one's hobbies like painting, reading, dancing, cooking, etc., exercising, doing yoga, etc. Various measures to regain health and combat post-COVID complications after recovery from COVID-19 infection are: balanced diet, adequate sleep, rehabilitative support, such as physiotherapy, chest therapy, mental health support, etc., practicing yoga and/or breathing exercises, exercising, walking, etc.

5 Conclusion

In conclusion, the highest rates of COVID infection and health complications were seen in the age group of 19-30 years. Fever was the most common COVID infection symptom. Infection and complications were higher in males than in females. Following precautions like wearing a mask, sanitizing, etc., and getting vaccinated were found to be highly effective in reducing the chances of infection and reducing the severity of infection. Various ways to reduce mental stress amid these pandemic times are exercising, doing yoga, counselling, following one's hobbies like painting, reading, dancing, cooking, etc., and ways to regain health post-COVID are adequate sleep, rehabilitative support, exercising, walking, etc.

The future thought is to study the effect of the various factors, such as gender, age, vaccination on COVID, post-COVID complications, long-term health complications post-COVID, etc., in more detail and provide better and more effective solutions to prevent and fight against COVID infection and provide effective ways to combat post-COVID health complications. We also intend to study the effectiveness of vaccination and its ability to fight against the virus in different individuals.

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