ISSN: 2755-0192

Journal of Psychiatry Research Reviews & Reports

SCIENTIFIC Research and Community

Review Article

Open Access

Long-Term Psychosocial Issues among COVID-19 Survivors in Kathmandu Valley

Nabin Prasad Joshi

Counseling Psychologist, Faculty at Master Program in Counseling Psychology, Tribhuvan University and Founder CEO, PICS, Nepal

ABSTRACT

Since its emergence in December 2019, Corona Virus disease has impacted several countries, affecting many people. The first cases were recorded in Wuhan, China, between December 2019 and January 2020. Italy is one of the affected countries in Europe. The relations between India and Nepal have reverted to the pre-pandemic period as both countries have open borders.

The study focused on the overall psychosocial impact among COVID-19 survivors in their life what are the changes they are facing after covid also how are their relations with friends and relatives after they have covid in different municipalities of Kathmandu Valley, where people from different regions are living in rent and have their own houses.

Support from friends and family during a pandemic can prevent it if it is strong enough. Nonetheless, there were risk factors for psychosocial damage, including a lack of or insufficient family and social support, psychiatric assistance, and inadequate insurance or compensation. Poorer mental health outcomes were inversely correlated with social rejection or isolation.

***Corresponding author**

Nabin Prasad Joshi, Counseling Psychologist, Faculty at Master Program in Counseling Psychology, Tribhuvan University and Founder CEO, PICS, Nepal.

Received: August 17, 2023; **Accepted:** August 29, 2023; **Published:** August 31, 2023

Keywords: Mental Health, Stress, Anxiety, Depression, Kathmandu, Nepal

Introduction

The case first appeared in China at the end of December 2019, reported as an unknown virus causing severe pneumonia and respiratory problem in the Wuhan Province of China. As there wasn't any research on it, doctors observed it to be a new type of virus that caused severe harm to the human body and gave it the name of novel Coronavirus. The virus-causing Coronavirus disease (COVID-19) is not the same as the Coronavirus that commonly circulates among human beings and causes mild illnesses like the common cold. On February 11, 2020, the World Health Organization announced an official name for Coronavirus disease 2019, abbreviated as COVID-19. CO stands for Corona, VI for Virus, D for disease, and 19 for 2019. Formally it was renamed and referred to as SARS-COV-2 (severe acute respiratory syndromes coronavirus disease -2) [1].

Fever, dry cough, and exhaustion are the most typical COVID-19 symptoms. Aches and pains, nasal congestion, headache, conjunctivitis, sore throat, diarrhea, loss of taste or smell, or a rash on the skin or coloring of fingers or toes are some less typical symptoms that may affect some people. The majority of people (about 80%) recover from the condition without the need for hospitalization. Around one out of every five people infected with COVID-19 became extremely unwell and had trouble breathing. People over the age of 65, as well as those with underlying medical conditions such as high blood pressure, heart and lung disease, diabetes, or cancer, were more likely to develop serious illnesses [2]. In COVID-19 survivors, a relatively high number of long-term symptoms have been observed. Besides the impact on quality of life, these symptoms (now called Post-COVID-Syndrome) may impact functioning and hinder participation in affected people's social settings [3].

COVID-19 is mainly spread through respiratory droplets expelled by someone coughing or has other symptoms such as fever or tiredness, shortness of breath, headache, fatigue, muscle ache, nausea, and vomiting (WHO, 2020). Many people with COVID-19 experience only mild symptoms. The symptoms like dizziness, chest pain, fever, dry mouth, shortness of breath, vomiting, and headache are related to anxiety, stress, and grief, which people can feel during the pandemic. The article 'Stress and coping' published by the Centers for Disease Control and Prevention mentioned that a person might feel overwhelmed and experience high anxiety during a pandemic [4]. Anxiety can cause chest pain and other physical symptoms. For this reason, a person may be concerned that their symptoms might mean they have COVID-19. It can be seen that it not only has a physical impact on human beings but also has a relation with mental health.

According to the Ministry of Health, there are currently 3,585 Omicron infections, with 14,340 active cases as of Thursday (date). Nepal reported 3,553 new cases on Thursday, 2,922 of which were found in 10,498 polymerase chain reaction tests and 31 in 4,583 antigen testing. The total number of Omicron infections is 888. Dr. Runa Jha, director of the National Public Health Laboratory, said to the Post, "S-gene dropout has been observed in 25% of the total samples." "Those samples with S-gene target failure are Omicron infections," said the researcher.

COVID-19 is a recently identified highly infectious disease caused by SARS-CoV-2. It has spread to practically every country, including Nepal, resulting in a pandemic. Most SARS-characteristics of CoV-2's are unknown and still being investigated. Due to the high mutation rate, it reappeared in several nations as a new variety. The newly discovered delta version of SARS-CoV-2 is primarily responsible for COVID-19's second-wave impact in Nepal. In this scenario, mathematical modeling has indicated a crucial role in understanding coronavirus management tactics [5].

Most people infected with coronavirus disease 2019 (COVID-19) recover fully within a few weeks. However, some people, even those with minor forms of the condition, continue to have symptoms even after they have recovered. These individuals are known as "long haulers," and their conditions are referred to as "post-COVID-19 syndrome" or "long COVID-19." Post-COVID-19 conditions are a term used to describe these health concerns. They're typically thought to be COVID-19 side effects that last longer than four weeks after one has been diagnosed with the virus. COVID-19 symptoms are most common in the elderly and those with various severe medical conditions, including the young ones. Likewise, healthy people can feel unwell for weeks to months after the infection [4]. Common signs and symptoms that linger over time, including but not limited to are:

- Fatigue
- Shortness of breath or difficulty breathing
- Cough
- Joint pain
- Chest pain
- Memory, concentration, or sleep problems
- Muscle pain or headache
- Fast or pounding heartbeat
- Loss of smell or taste
- Depression or anxiety

Post-COVID

Long-term consequences also called post-COVID conditions (PCC) or protracted COVID, can occur in some COVID-19-affected individuals. Long COVID, long-haul COVID, post-acute COVID-19, post-acute sequelae of SARS CoV-2 infection (PASC), long-term consequences of COVID, and chronic COVID are only a few of the terms used to describe post-COVID problems [5].

A wide range of persistent health issues that can endure for weeks, months, or years can be considered post-COVID disorders. Those with severe COVID-19 sickness are more likely to develop post-COVID problems. Even those who have a mild sickness or show no signs of COVID-19 can develop post-COVID problems if they are infected with the virus that causes COVID-19. Individuals who are not immunized against COVID-19 and contract the disease may also be more likely to suffer from post-COVID problems than those who were immunized before contracting the disease. Although most patients with post-COVID problems have signs of infection or COVID-19 disease, it is possible for such a person to have neither tested positive for the virus nor been aware that they were infected.

Those who have been exposed to the virus that causes COVID-19 may develop a variety of new, recurring, or ongoing health issues. These disorders are known as post-COVID conditions. The onset of post-COVID problems could be initially noticed at least four weeks after the infection because most COVID-19 patients recover within a few days to a few weeks of infection. Post-COVID symptoms can affect anyone who contracted the infection. When they discovered they had COVID-19, most persons with post-COVID problems began to exhibit symptoms days after contracting SARS-CoV-2; however, some of these individuals may not have been aware of their initial infection.

There is no test to identify post-COVID issues, and persons may exhibit a wide range of symptoms that are indicative of other medical conditions. This can make it challenging for medical professionals to identify post-COVID disorders. The medical professional examines a diagnosis of post-COVID problems based on the patient's health history, including if COVID-19 was previously identified through a positive test result, symptoms, or exposure, as well as doing a physical exam.

The COVID-19 pandemic has affected mental health on a large scale. According to a study, many people experienced increased stress, anxiety, sadness, and sleep difficulties in response to the pandemic [6]. These encounters can have a lasting effect, mainly if the person involved has dealt with severe or ongoing distress. Post-traumatic stress disorder or psychological trauma may result from this.

According to a study conducted by, around 30% of people who recovered from severe SARS or MERS had long-term lung abnormalities [7] . A 2019 study found that 40% of people who survived SARS still experienced chronic fatigue about 3.5 years later, on average. Still, while viruses from the same family cause SARS, MERS, and COVID-19, there are key differences among them, as the study highlights. Due to this reason, the other two diseases do not provide a reliable way to predict COVID-19's long-term effects. Research into the impact of COVID-19 is still ongoing. Initiatives such as the COVID Symptom Study track peoples' symptoms and the long-term consequences of the disease via a mobile app [8].

The Rationale of the Study

For the past two years, the covid-19 epidemic has had various effects on human beings. A single virus has various effects within the same community or even within a family. It was only a virus that caused mild to moderate illness for many people, but it became a serious health issue for others. Due to this, people have been affected by various psychological issues. Overall long-term consequences are connected with psychological and psychiatric symptoms such as anxiety, tension, sadness, post-traumatic stress disorder, and sleep difficulties among covid-19 survivors, according to a recent study conducted by [9].

Some people who had COVID-19 and recovered from the infection still suffer from covid-19 differently. Due to the deadly disease infection rate and stigma regarding the covid-19, it still affects people in society [10]. Stigma, such as not contacting a covid-19 infected person or wearing a mask while meeting someone who had covid-19 previously, is a common type of stigma that the researcher has been seeing in the society where he has lived. As a psychologist and a counselor, the researcher can see and feel that

something is lacking after the covid-19 pandemic. People have been facing everyday problems like stress, anxiety, irritation, and sleep issues, but it is hard to generalize them without research. Therefore, this research will incorporate all the issues of covid-19 survivors in the Kathmandu Valley in different Municipalities.

This research will answer these questions.

- What are the long-term psychological issues people have been facing?
- How have their lives been after they had covid-19?
- What are the social issues or difficulties they have been facing?

Objectives of Study

- To identify the psychological issues, including stress, anxiety, and depression among covid-19 survivors.
- To explore the social issues among covid-19 survivors and
- To assess the relationship between social and psychological issues among covid-19 survivors.

Importance of Study

Coronavirus is a very common word in today's world; no one is unaware of it, but not everyone understands it similarly. Individual perceptions influence how they react to the stimulus, and the outcomes impact them. A new virus is causing havoc around the planet. Researchers are working on determining the influence of coronavirus on many layers and parts of society, and discoveries are being made every day. The contagious virus transmits the COVID-19 sickness from one person to another, infecting them both. Some people die due to the contagious disease, while others fight for their lives. After the recovery or victory over the covid-19, still, they have some kind of fear inside. Who knows who has an infection until one sees the symptoms of the infectious person? Nobody can distinguish who is fine and who is carrying the virus. Because of it, covid-19 survivors, who reached a severe condition, have been afraid of meeting people and going outside.

In some countries, people have already faced 4th wave of the pandemic; however, Nepal has been facing the third wave. It's already been two years of the pandemic, and during this time, so many things have happened due to covid-19 [11]. Meanwhile, different people are experiencing the impact of covid-19 in different ways, so it is essential to document the several experiences of covid-19 survivors. Understanding the long-term psychological impact among them will contribute to the readers' understanding of the real situation and its consequences. It will also be necessary for the upcoming students in the mental health field. The researcher will collect the different experiences of covid-19 survivors, which will help the researcher understand the social issues in society.

It's been three years and more since the pandemic started, and people have been facing several issues with time in the midst of the pandemic. A single virus has been traveling around the globe along with different social issues, including joblessness, economic crisis, loss of the nearest one, and failure in business. Not only the social issues but anything untreated for a long time affects largely. Similarly, unresolved issues may lead people towards uncertainty, irritation, and fear of their careers and life. This research has examined the social issues and their consequences among diverse people in the municipalities of Kathmandu district.

Research Gap

Coronavirus disease 2019 (COVID-19) is the third deadly coronavirus infection of the 21st century. It has proven significantly more lethal than its predecessors, with the number of infected patients and deaths increasing daily. From December 2019 to July 2021, this virus infected nearly 200 million people, leading to more than 4 million deaths. People's understanding of COVID-19 is constantly progressing, giving better insight into the heterogeneous nature of its acute and long-term effects. People worldwide have interpreted the virus differently, and as a result, they have experienced its effects differently. For some, it has been just a common virus, and they have nothing to do with it, but for others, it has caused catastrophic consequences. They had been hospitalized for months.

Every day, researchers are working to gather more information about the many experiences and effects of covid-19. However, because of an individual's unique experiences, there is never enough evidence to generalize the scenario. This study looked into the distinctive experiences of each of the covid-19 survivors in the Kathmandu valley in several municipalities. Understanding and examining the long-term impact of covid-19 on the survivors by putting them within a single circle maybe not cover the entire situation and experiences, so this research has examined and found the real situation and experiences of those who have survived after covid-19 had made them seriously ill.

Data Representation

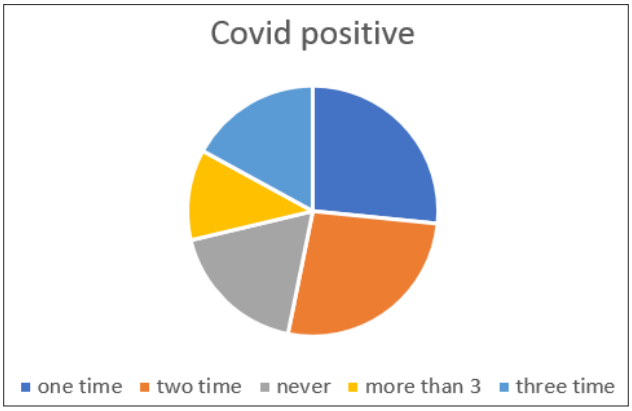

Figure 1: Pie Chart Representing How Frequently Individuals Tested Positive for COVID

As per the data from the pie chart, 50 individuals tested positive only once till the data collection date, 50 more tested twice, and 34 never tested positive. In contrast, 22 tested with Covid more than three times, whereas 32 tested thrice.

Here we can see the mixed result: firstly, only 50 individuals tested positive during the first data collection; again, 50 more were tested twice here; we can see 34 didn't test positive but 22 of them tested Co vid more than 3 times. We can figure it out from this data more than 3 times when the tests were done; we can see a greater number of people testing positive.

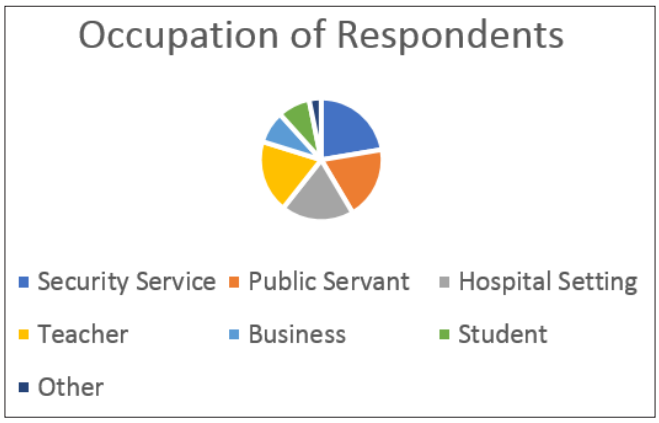

Figure 2: Pie-chart Representing COVID Infection based on the Occupation of the Respondents

In this research, among the total respondents, 45 of them were from the security service, 38 of them served as public servants, and 31 of them worked in a hospital setting. In contrast, 28 of them work as a teacher, 21 are involved in some kind of business, 18 are students, and the remaining 7 identify themselves as others.

Long-term Effect of COVID on Mental Health

Table 1: Mental Health and Post COVID

Raw Labels	Depression	%	Anxiety	%	Stress	%
Minimal	37.0	19.7	7.0	3.7	183.0	97.3
Mild	108.0	57.4	22.0	11.7	5.0	2.7
Moderate	42.0	22.3	135.0	71.8	0.0	0.0
Severe	1.0	0.5	23.0	12.2	0.0	0.0
Extremely Severe	0.0	0.0	1.0	0.5	0.0	0.0
Total	188.0	100.0	188.0	100.0	188.0	100.0

Table 3 represents different levels of depression, anxiety, and stress among the respondents. The levels are minimal, mild, moderate, severe, and extremely severe. Among the 188 respondents, 19.7% had a minimal level of depression; the majority of them showed a mild level of depression, i.e., 57.4% remaining 22.3% showed a moderate level of depression.

Likewise, the majority of the respondent had a moderate level of anxiety (71.8%), 11.7% of them showed a mild level of anxiety, and 12.2% showed a severe level of anxiety. Similarly, 97.3% of them showed a minimal level of stress.

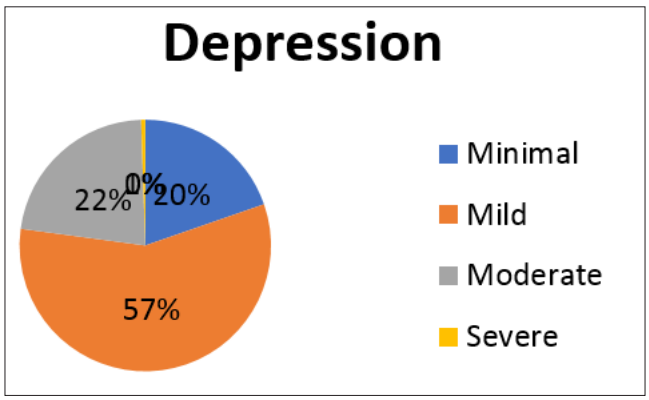

Figure 3: Pie Chart Representing a Different Level of Depression

Among the total of 188 respondents, the pie chart represents 19.7% had a minimal level of depression; the majority of them showed a mild level of depression, i.e., 57.4% remaining 22.3% showed a moderate level of depression.

Here, we can see a severe level of only 1%, which means very few have at least a severe level of anxiety. Here as we can see, the major number of people have severe depression, which is 57% which means the person's depression symptoms are very intense, often enough to interfere with many daily functions.

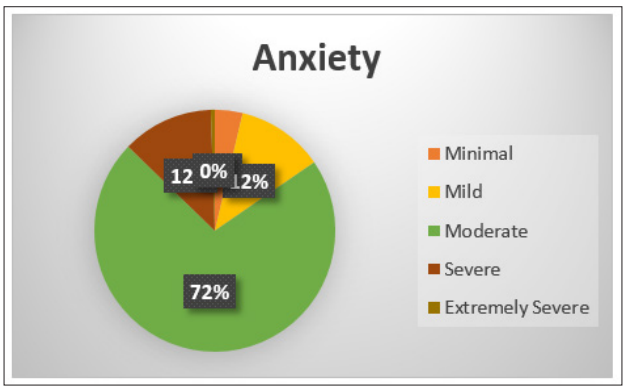

Figure 4: Pie Chart Representing a Different Level of Anxiety

According to the pie chart, the majority of the respondent had a moderate level of anxiety (71.8%), 11.7% of them showed a mild level of anxiety, and 12.2% showed a severe level of anxiety.

In the above pie-chart, we can see that a minimal level of anxiety among the people can be seen at only 4%, which means here the person has the same feelings of worry but is also able to get things done and can focus on tasks. In contrast, extremely severe can be seen only 1 percent, which is very less compared to another different level. Here we can see a large number of people are suffering from a moderate level of anxiety which means the people here have more frequent or persistent symptoms than those with mild anxiety but still have better functioning than someone with severe anxiety.

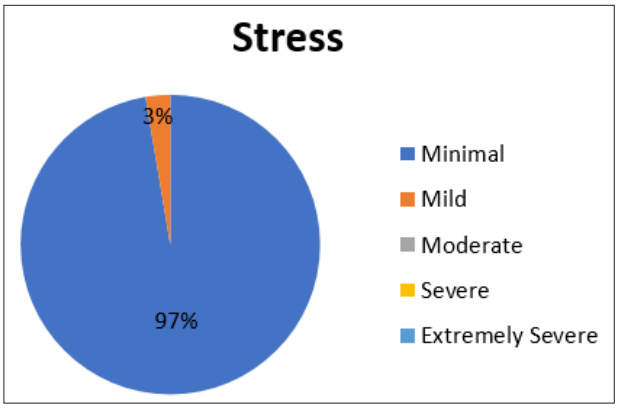

Figure 5: Pie chart representing a different level of anxiety

According to the pie chart, 97% of respondents showed minimal stress.

Statistical Analysis of Data

Table 2: Statistical data representation of Depression, Anxiety, and Stress

Depression		Anxiety		Stress	
Mean	11.94	Mean	12.12	Mean	10.53
Standard Error	0.20	Standard Error	0.18	Standard Error	0.14
Median	12.00	Median	12.00	Median	10.00
Mode	13.00	Mode	12.00	Mode	10.00
Standard Deviation	2.69	Standard Deviation	2.51	Standard Deviation	1.92
Sample Variance	7.23	Sample Variance	6.32	Sample Variance	3.67
Kurtosis	1.08	Kurtosis	1.54	Kurtosis	0.94
Skewness	0.71	Skewness	0.41	Skewness	0.52
Range	16.00	Range	16.00	Range	11.00
Minimum	7.00	Minimum	7.00	Minimum	6.00
Maximum	23.00	Maximum	23.00	Maximum	17.00
Sum	2245.00	Sum	2278.00	Sum	1979.00
Count	188.00	Count	188.00	Count	188.00
Largest(1)	23.00	Largest(1)	23.00	Largest(1)	17.00
Smallest(1)	7.00	Smallest(1)	7.00	Smallest(1)	6.00
Confidence Level(95.0%)	0.39	Confidence Level(95.0%)	0.36	Confidence Level(95.0%)	0.28

As per the table, statistical data on depression, anxiety, and stress is presented, which consists of mean, median, mode, standard error, and many more. From the information above, the mean value of depression is 11.94 with a standard error of 0.20, with mode as 13 and median as 12. Likewise, the standard deviation of the data is 2.69, with a sample variance of 7.23. The data showed skewness of 0.71 and kurtosis of 1.08.

In the case of anxiety, the mean value of anxiety is 12.12, with a standard error of 0.18. Both the median and mode values are 12.00, with a standard deviation of 2.51 and a sample variance of 6.32. The skewness of the data is 0.41, whereas the kurtosis is 1.54.

The statistical stress data showed the mean value as 10.53 with a standard error of 0.14. Both the median and mode are 10.00, with a standard deviation of 1.92 and a sample variance of 3.67. The skewness of the data is 0.52, whereas the kurtosis is 0.94.

Discussion and Analysis

Coronavirus disease 2019 (COVID-2019) is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was declared a global pandemic in March 2020. The clinical outcome of COVID-19 ranges from mild respiratory failure to severe disease with a high fatality risk, especially in a vulnerable group. Coronavirus can spread from an infected person's mouth or nose in small liquid particles when they cough, sneeze, speak, sing, or breathe. The virus spreads more easily indoors and in crowded settings.

The initial physical symptoms of covid-19 range from fever, cough, and loss of taste and smell to difficulty breathing, headaches, and chest pain. These are accompanied by mental symptoms such as fear, anxiety, and brain fog. With the right treatment, the individual suffering from covid-19 virus recovers, but there have been few lasting psychological shadows that affect an individual even after several months or years.

It has been almost three years; however, the wave of covid-19 is yet to subside completely. This might go on for many more years to come. The long-term effect of covid-19 has been observed in the general population's mental health. Individuals returning to their original routine (before the pandemic) have found many difficulties with which they were initially unfamiliar. Studies have shown that there has been a significant decrease in the self-esteem of people who had been in lockdown with their immediate family members as well as who had been in isolation due to covid-19. This has led to awkwardness in social gatherings or with outsiders, difficulty speaking, and feeling overwhelmed in such settings.

The long-term impact of covid-19 is wide-ranging, including anxiety, anger, depression, post-traumatic stress symptoms, alcohol abuse, and behavioral changes such as avoiding crowded places and cautious hand washing. These are produced due to the combined effect of pandemic fear and lockdown (which caused social isolation).

Many recent studies conducted in different settings have reported comparable findings, with the highest levels of mental distress among women, rural inhabitants, and elderly populations. WHO reports that the burden of distress, depression, and other mental health conditions, such as suicide, is rising globally. The long-lasting mental health problems such as anxiety and depression related to covid-19 have become a serious public health concern.

The post-covid-19 effects on mental health mainly observed in people are symptoms of post-traumatic stress disorder (PTSD), depression, or anxiety [7]. These are most common in people who have recovered from covid-19, especially those who presented a more serious condition in the acute phase of COVID-19. There have been further cases of people suffering from fear and stress due to covid-19. The relapse of pre-existing mental illness has also been observed in many cases [12]. Similarly, many people have reported mental distress with widespread suicidal thoughts and behaviors.

A meta-analysis review of 34 studies published in various journal articles by [9], found mental health problems of anxiety (range 6.5% to 63%), depression (4% to 31%), and post-traumatic stress

disorder (12.1% to 46.9%) post-covid-19. This study found that 19.7% of the respondent had a minimal level of depression; the majority of them showed a mild level of depression, i.e., 57.4%, and the remaining 22.3% showed a moderate level of depression. This is slightly higher in range than the data shown by the previous study. Likewise, the majority of the respondents had a moderate level of anxiety (71.8%), 11.7% showed a mild level of anxiety, and 12.2% showed a severe level of anxiety. This is found to be similar to the previous study.

In another study [13], psychological symptoms, including anxiety, depression, and insomnia, were prevalent in up to 60 % of physicians, nurses, and medical residents during the Covid-19 pandemic, which was likely to persist for several years. There was also a persistent and significantly greater level of psychological symptoms, including anxiety, depression, and post-traumatic stress symptoms, a year later in such populations. This is in range with the present study, where above-average respondents suffered from these mental problems.

In Nepal, a nationwide lockdown was imposed for nearly ten weeks, which helped control the coronavirus spread. However, its impact on mental health also increased. At present, there are a total of 990,625 cases of corona infection and 11,972 deaths.

The disruption to routines, education, and recreation and concern for family income and health had left many frustrated, angry, and concerned for their future and family. On top of that, in recent years in Nepal, there has been an increase in the diagnosis of mental disorders such as anxiety, bipolar disorder, conduct disorder, depression, eating disorders, and so many others, which have a direct impact on people's health, education, life outcomes, and earning capacity.

A study showed that a significant proportion of participants (14%) had anxiety symptoms, while 7% and 5% reported depression and stress, respectively [13]. This study, however, found the prevalence of anxiety and depression higher than the estimated national prevalence rate (3.6% for anxiety and 3.2% for depression) in Nepal reported by WHO in 2017. This study has found that the long-term post-covid-19 effect of being higher, with most of the participants having a moderate level of anxiety (71.8%) and mild level of depression (57.4%). The study also shows that almost all respondents have minimal stress levels [14-24].

Conclusions

The study has shown the occurrence of psychosocial issues among the participants. The coronavirus (Covid-19) is similar for everyone, but its impact is in different layers concerning occupations and the formal education they have received. However, most participants had at least some form of mental problems. They have been affected more by the infodemic than the Pandemic itself, as they said. Excessive news, repeated information everywhere, and restrictions caused them to fear, which made them feel scared, yet after two years of the pandemic gone.

Adequate intervention and evaluation into mental health awareness and psychosocial support focused primarily on individual mental health distress and the problem is needed. Family/friends' support can be a protective factor in a pandemic at adequate levels. However, low levels or inadequate family and social support, psychological support, and inadequate insurance/compensation were risk factors for psychosocial impact. Social rejection or isolation was directly proportionate with poorer mental health outcomes. To understand the psychosocial impact of coronavirus on a considerable population throughout the country, further study is necessary from the government side.

Recommendation

- Based on this study, it can be recommended that.
- The impact of post-covid-19 infections needs to be addressed for mental well-being.
- The awareness of post-covid-19 information on mental health needs to be made.
- Appropriate psychosocial intervention is necessary for people who were previously infected with covid-19.
- Coronavirus harms people physically and mentally in various forms, so government should implement appropriate action.
- This research has not addressed children's issues, so further research on children may be needed in the future.

References

1. Guan WJ, Ni ZY, Hu Y, Liang W, Ou CQ, et al. (2020) Clinical Characteristics of Coronavirus Disease 2019 in China. New England Journal of Medicine 382: 1708-1720.
2. WHO (2020) Coronavirus. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-coronaviruses.
3. Lemhöfer C, Sturm C, Loudovici-Krug D, Best N, Gutenbrunner C (2021) The impact of Post-COVID-Syndrome on functioning - results from a community survey in patients after mild and moderate SARS-CoV-2-infections in Germany. Journal of occupational medicine and toxicology (London, England) 16: 45.
4. CDC (2022) Long COVID or post-COVID conditions. Centers for Disease Control and Prevention https://www.cdc.gov/coronavirus/2019-ncov/long-term-effects/index.html.
5. Joshi RK, Bhatt S, Lamichhane TR, Ghimire MP (2021) Analysis of second wave of COVID-19 cases in Nepal with a logistic model. Asian Journal of Medical Sciences 12: 20-26.
6. Carfi A, Roberto Bernabei, Francesco Landi, Gemelli (2020) Against Persistent symptoms in patients after acute COVID-19. JAMA 324: 603-605.
7. Joshee S, Vatti N, Chang C (2022) Long-term effects of COVID-19 Mayo Clinic Proceedings. Mayo Clinic 97: 579-599.
8. Rees M (2020) What are the long-term effects of coronavirus (COVID-19)? Medicalnewstoday.com. https://www.medicalnewstoday.com/articles/long-term-effects-of-coronavirus.
9. Ballering AV, van Zon SKR, olde Hartman TC, Rosmalen J G M (2022) Persistence of somatic symptoms after COVID-19 in the Netherlands: an observational cohort study. Lancet 400: 452-461.
10. Joshi NP (2021) A Psychosocial Impact of COVID-19 Pandemic on frontline workers & general people in Kathmandu valley. International Journal of Scientific & Engineering Research (IJSER) 12: 549-574.
11. WHO (2020) COVID-19 Infodemic. https://www.who.int/health-topics/infodemic#tab=tab_1.
12. Menges, D, Ballouz T, Anagnostopoulos A, Aschmann HE, Domenghino A, et al. (2021) The burden of post-COVID-19 syndrome and implications for healthcare service planning: A population-based cohort study. PloS One 16: e0254523.
13. Poudel A (2022) for some people, Covid-19 causes long-term effects, taking both physical and mental toll. The Kathmandu Post. Retrieved from https://kathmandupost.com/health/2022/07/27/for-some-people-covid-19-causes-long-term-effects-taking-both-physical-and-mental-toll.

14. WHO (2022)Addressing the mental health needs of the Nepali people during the COVID-19 pandemic. https://www.who.int/nepal/news/detail/07-04-2021-addressing-the-mental-health-needs-of-the-nepali-people-during-the-covid-19-pandemic
15. Both Omicron (2022) Delta fuelling the Covid surge in Nepal, experts say (n.d.) Retrieved from The Kathmandu Post https://kathmandupost.com/health/2022/01/14/both-omicron-delta-fuelling-covid-surge-in-nepal-experts-say.
16. Gautam K, Adhikari RP, Gupta AS, Shrestha RK, Koirala P, et al. (2020) Self-reported psychological distress during the COVID-19 outbreak in Nepal: findings from an online survey. BMC Psychology 8: 127.
17. Kyzar EJ, Purpura L J, Shah J, Cantos A, Nordvig AS, et al. (2021) Anxiety, depression, insomnia, and trauma-related symptoms following COVID-19 infection at long-term follow-up. Brain behavior & immunity - health 16: 100-315.
18. Liu,Y, Long Y, Cheng Y, Guo Q, Yang L, et al. (2020) Psychological Impact of the COVID-19 Outbreak on Nurses in China: A Nationwide Survey during the Outbreak. Front Psychiatry 11: 598-712.
19. Lovibond SH, Lovibond PF (1995) Manual for the Depression Anxiety Stress Scales (2nd ed.) Sydney. Psychology Foundation of Australia.
20. Mazza MG, De Lorenzo R, Conte C, Poletti S, Vai B, et al. (2020). Anxiety and depression in COVID-19 survivors: Role of inflammatory and clinical predictors. Brain behavior and immunity 89: 594-600.
21. Munblit D, Nicholson T R, Needham DM, Seylanova N, Parr C, et al. (2022) Studying the post-COVID-19 condition: research challenges, strategies, and importance of Core Outcome Set development. BMC Medicine 20: 50.
22. Sim K, Chua HC (2004) The psychological impact of SARS: a matter of heart and mind. CMAJ: Canadian Medical Association Journal. Journal de l'Association medicale canadienne 170: 811-812.
23. Tonsing K (2014) Psychometric properties and validation of Nepali version of the Depression Anxiety Stress Scales (DASS-21). Asian Journal of Psychiatry 8: 63-66.
24. Zoowa SB, Shrestha, L, Paudel L, Bhandari G, Sapkota S, et al. (2021) Socio-psychological Study of COVID–19 Pandemic among Healthcare Workers in a Medical College of Nepal: A Descriptive Cross-sectional Study. Journal of Nepal Medical Association 59: 160-164.