

EXAMINING THE SHORT-TERM AND LONG-TERM IMPACTS OF COVID-19 ON QUALITY OF LIFE AND PSYCHOLOGICAL OUTCOMES

Parvathy Rajeev¹, Dr. R. Kannan²

1. Research Scholar, Department of Languages (English), Hindustan Institute of Technology and Science (HITS), Padur, Chennai-603103. Email ID: parvathyrv2000@gmail.com.
2. Associate Professor, Department of Languages (English), Hindustan Institute of Technology and Science (HITS), Padur, Chennai-603103. Email ID: rkannan@hindustanuniv.ac.in.

KEYWORDS	ABSTRACT
COVID-19, Psychological Outcomes, Quality of Life, Anxiety, Depression, PTSD, Long COVID, Social Support, Sleep Disturbances, Work Productivity, Academic Performance	The COVID-19 pandemic has had a significant impact on public health globally, affecting people's living situations and mental health both immediately and over time. By combining quantitative and qualitative data from a sample of 100 individuals, this study used a mixed-methods approach to investigate these consequences. Some of the important areas that are analyzed in relation to COVID-19, both favorably and adversely, include mental health distress, PTSD, sleep issues, work productivity, academic success, and social support. Those who tested positive for COVID-19 had higher rates of depression (19.2 ± 5.4 vs. 13.5 ± 4.7 , $p = 0.002$), anxiety (16.1 ± 4.5 vs. 11.2 ± 3.8 , $p = 0.001$), and PTSD prevalence (33% vs. 14%, $p = 0.002$), according to the data. Furthermore, patients with COVID-19 reported lower quality of life across all domains of functioning, including social, psychological, and physical. Additionally, the sleep quality scores of infected individuals were lower (6.5 ± 1.9 vs. 5.0 ± 1.4 , $p = 0.002$), and the main long-term COVID symptoms were depression (26%), brain fog (32%), and exhaustion (48%). Significant economic and social ramifications resulted from the major decline in labor productivity (up to 45% for the unemployed) and academic performance (42% reduction in high school students). According to the report, online counseling in particular has increased by 62% (62% rise, $p = 0.001$). These findings demonstrate the ongoing need for social support initiatives, healthcare policies, and psychiatric therapies to mitigate the long-term impacts of COVID-19 on mental health and well-being.

1. INTRODUCTION

The COVID-19 pandemic has had a profound impact on individuals and communities, causing significant changes in a number of areas, including mental health, social connections, and economic stability. As an international pandemic, the pandemic had a catastrophic effect on people's physical and mental health as well as their general quality of life. Because of sudden lifestyle changes, uncertainty about the future, and prolonged periods of seclusion, COVID-19 caused short-term impacts such as elevated stress, anxiety, and depression [1]. Lockdowns and broad social isolation enforced by governments to prevent the epidemic led to increased mental health problems and loneliness among people [2]. Furthermore, the fear of contracting the virus and the high workloads experienced by basic service providers and healthcare workers increased professional stress, exacerbating physical and mental exhaustion and burnout [3].

Among those most affected by the pandemic were children, the elderly, and people with preexisting mental health conditions. For those who previously suffered from anxiety and sadness, researchers have discovered that the outbreak made their symptoms worse [4]. Elderly people, who were already more likely to experience severe COVID-19 issues, also had greater rates of social isolation, cognitive decline, and emotional distress [5]. The disturbance of daily patterns brought about by school closures resulted in significant social and academic challenges for children and adolescents, which subsequently led to increased stress and emotional instability [6]. Individuals were already struggling to balance their personal and professional lives and adapt to new communication channels, and now they had to cope with the additional strain of remote work and online education [7]. COVID-19's long-term effects on mental health and quality of life are beginning to manifest beyond these short-term effects. Following the pandemic, PTSD, depression, and anxiety continue to plague many people as they attempt to resume their normal lives [8]. Massive layoffs, corporate closures, and financial instability are only a few of the economic effects of the pandemic that have contributed to long-term stress and declining mental health [9]. Additionally, the epidemic has exacerbated previously-existing disparities in mental health treatment, making it much harder for populations that are already at risk to obtain mental health services and medical resources [10].

The emergence of "long COVID," a disease characterized by enduring symptoms like tiredness, depression, and brain fog, has exacerbated the pandemic's long-term psychological effects [11]. Symptoms of prolonged COVID include emotional distress, reduced productivity, and disruptions to both private and public life [12]. Furthermore, the pandemic has highlighted the deficiencies of mental health systems around the world, emphasizing the need for preventative actions that prioritize psychological well-being in the wake of a pandemic [13].

To combat the mental health crisis that COVID-19 has exacerbated, long-term initiatives are required, including more funding for mental health services, digital mental health solutions, and community-based support structures. The epidemic is taking a psychological toll, making it critical to promote resilience and make sure that everyone, especially those most affected, has access to mental health care. As our knowledge of the long-term effects of the virus increases, we require evidence-based efforts to lessen psychological distress and enhance quality of life after the COVID-19 pandemic. Research is still being done on the potential impact of children with chronic obstructive pulmonary disease (COPD) on their quality of life in the future [14]. Chronic COVID can make it difficult for kids to resume their normal activities, such as attending school, participating in sports, and hanging out with friends. Long-lasting physical health issues as well as mental health issues including anxiety and sadness might affect social and emotional development [15]. Long-term effects on performance may also result from academic losses brought on by inattention or missing class days [16]. In youngsters, severe cases of the persistent illness known as postural orthostatic tachycardia syndrome (POTS) can occur. Fainting, dizziness, and weakness are signs of POTS [17, 18]. Reduced physical activity and exercise tolerance in individuals with chronic respiratory symptoms may lead to deconditioning and other health problems [19]. The likelihood of a full recovery is made more concerning by the fact that children with chronic COVID can develop health issues that are difficult to predict because the illness can flare up and go away over time. While many kids with long-term COVID recover over time, it may take some time for them to fully recover. In addition, some children may experience relapses or persistent health problems as adults [20].

2. LITERATURE REVIEW

Liang et al. (2025) [21] assessed the postoperative clinical outcomes and perioperative functional skills of liver cancer patients who had hepatectomy as part of a brief exercise-focused prehabilitation program. This open-label, randomized controlled experiment was carried out in the future and involved 205 participants in all. A week before surgery, 104 patients in the prehabilitation group were required to complete an activity intervention program. This program included respiratory, resistance, and cardiovascular exercise. The control group consisted of 101 patients who received standard clinical care. There was no method for the assessors to determine which patients were in which groups. The incidence of postoperative pulmonary problems during hospitalization was one of the primary outcomes that the multivariate logistic regression model looked at. The average prehabilitation period was eight days. There was no difference between the groups, and the adjusted hazard ratio for postoperative pulmonary problems was 0.70 (95% CI, 0.37-1.29; $P = .249$). Except for the 6-minute walk distance, which was 33.36 meters longer in the prehabilitation group (95% CI, 22.02-44.70; $P < .001$), there was no difference in postoperative clinical outcomes or patient-reported outcomes.

Basaca et al. (2025) found that the most often reported symptoms included cognitive impairments, gastrointestinal irregularities, excessive fatigue, headaches, muscle soreness, respiratory issues, and challenges with everyday job, education, and social interactions [22]. In children with chronic COVID, psychological symptoms such as anxiety, depression, irritability, and mood swings are prevalent. It is probable that the length of the illness and the challenges it presents in their day-to-day lives exacerbate these symptoms. Childhood obesity, asthma, and neurological abnormalities are among the conditions that raise the risk of chronic obstructive pulmonary disease (COPD), and it seems that the risk is significantly higher for girls and teenagers. Chronic autonomic nervous system abnormalities, mitochondrial dysfunction, persistent virus particles that cause inflammation, and long-term immunological dysregulation are some of the factors that might lead to chronic obstructive pulmonary disease (COPD). Chronic obstructive pulmonary disease (COPD) has unknown long-term implications, but short-term viral exposure has been linked to school absenteeism, reduced cognitive development, and social disengagement. Severe occurrences may result in chronic health issues such post-operative tiredness syndrome (POTS) and decreased activity tolerance.

Steed et al. (2025) [23] examined how living with a sister who is physically or intellectually disabled affected mental health and the perception of support services' accessibility. As part of a mixed-method study, young adults ($N = 13$) or those who have a sibling with a physical or cognitive disability ($N = 63$) participated in one-on-one Zoom interviews or online surveys. While Braun and Clarke's six-step theme analytic approach was used to assess the qualitative data, linear regression was used to analyze the numerical data. While the qualitative results indicated that there were issues with the child's relationships with their parents and siblings, including not receiving enough attention from their parents, not understanding their diagnosis, and even acting as a parent themselves, the quantitative results indicated that there were only minor short-term effects and no long-term effects on psychological health. Both quantitative and qualitative study indicated that having supportive parents, having a close sibling relationship, and obtaining educational aid were the most significant factors impacting psychological well-being.

Rafsanjani et al. (2025) [24] stated that adjunctive treatments should still be taken into consideration. Because statins have pleiotropic effects, researchers are investigating their potential value in lowering COVID-19 challenges. As required by the Consolidated

Standards of Reporting Trials, the study was conducted in a single referral hospital. Every eligible patient was randomly allocated to the rosuvastatin and control groups in a 1:1 ratio. Clinical outcomes, test results, vital signs, and patient symptoms were the metrics used to assess the findings. Statistical analysis was conducted using SPSS version 26.0, which was created by IBM Corp. of Armonk, New York. There were a total of 100 patients. On the first and fifth days, rosuvastatin-treated patients had lower C-reactive protein levels than controls (38.1 ± 16.3 vs. 50.5 ± 25.3), but there was no significant difference between the two groups in terms of baseline characteristics or laboratory results. Regarding the clinical outcomes that were measured, there were no appreciable variations between the two groups. These outcomes include things like the need for intubation, length of hospital stay, admission to the critical care unit, and mortality one month following release. The Borg Rating of Perceived Exertion and the symptom-gauging Leicester Cough Questionnaire were significantly better completed by the rosuvastatin group than by the other group.

Kim et al. (2025) [25] examined the managing mental health during the COVID-19 pandemic. Using claims data from universal health insurance in an individual fixed effects model, this study investigates how the pandemic has affected the diagnosis and treatment of mental illness. During the pandemic, the number of patients receiving a mental health diagnosis has significantly increased, and subjective indicators of mental health also show a negative trend. While the number of follow-up treatments decreased for those with pre-existing conditions, the number of new diagnoses increased dramatically for those without pre-existing conditions. The number of diagnoses for people over 60 has significantly decreased, although there is no appreciable difference in the outcomes by gender or income level.

Althomali et al. (2024) investigated the short- and long-term effects of COVID-19 on psychological outcomes and HRQoL in the Saudi population [26]. The researchers used the Arabic version of the SF-36 questionnaire to measure health-related quality of life (HRQoL), and the Hamilton Anxiety Scale (HAM-A) to measure anxiety and depression. Of the 292 participants, 134 had never contracted the virus, 43 had had it for a year, and 115 had had it for more than a year. In this study, there were no controls. Descriptive statistics were presented using numerical values and frequencies. The groups were compared using a one-way ANOVA test. Most SF-36 domains had lower values for those who were ill last year than for those who were healthy the entire year; nevertheless, HAM-A and HDRS had higher values. On the social functioning subscale of the SF-36, there was a statistically significant difference between the groups ($F(2,289) = 6.094, p = 0.01$), with an effect size of $d = 0.95$. The social functioning component of the SF-36 appeared to be significantly lower in the "one-year group" (mean difference $-13.58 (4.40-22.76) p < 0.01$) and the "more than one year infected" groups (mean difference $-10.80 (1.44-20.16) p = 0.02$) than in the "never-been-infected" and "more than one year infected" groups. All groups showed a low anxiety subtype (less than 17) and HDRS scores ranging from 8 to 16.

Poletti et al. (2022) [27] examined quality of life, depression, and cognitive performance six months following hospitalization for COVID-19. In all, 102 COVID-19 survivors were evaluated at one month, 122 at three months, and 98 at six months. They were all tested cognitively and psychiatrically, and their results were compared to those of 165 individuals in a healthy control group (HC) and 165 patients with major depressive disorder (MDD). Age, sex, and education level were taken into account while adjusting the cognitive performances. At one month, 79% of COVID-19 survivors showed impairment in one or more cognitive skills, 75% at three and six months, and 75% overall. No discernible

changes were observed in cognitive performance during the 1-, 3-, and 6-month follow-ups. COVID-19 patients performed better than MDD but slower than HC in terms of information processing speed and psychomotor coordination. Both COVID-19 survivors and MDD had worse verbal fluency and executive skills than HC, although the two groups did not vary. Finally, HC and COVID-19 survivors were comparable in terms of verbal and working memory. Cognitive performance was most significantly impacted by depressive psychopathology, which interacts with cognitive processes to influence quality of life. Our results add to the body of literature showing that cognitive impairment is a COVID-19 aftereffect that can affect quality of life up to six months after hospital discharge.

Carenzo et al. (2021) [28] assessed the prevalence of PTSD, physical function, and short-term health-related quality of life (HRQoL) in COVID-19 patients receiving treatment in our intensive care unit (ICU). research involves a group of individuals who will be observed in a clinic for follow-up. Patients completed the EQ-5D-5L questionnaire to gauge their quality of life six months after discharge from the hospital, and the anonymous web-based Impact of Event Scale-Revised (IES-R) to gauge PTSD symptoms two months later. At the early follow-up visit, patients also finished a 6-minute walking test (6MWT) to assess their cardio-pulmonary performance. Our follow-up program included 47 patients with an average age of 59 ± 10 years and a median pre-morbid CFS score of 2 [2–3]. In 6 minutes, walking 470 [406-516] meters was 83% of the projected total, falling between 67 and 99.99 percent. Prior to COVID-19, 4/18 (22%) of patients with a strong functional baseline (CFS of 1 or 2) had a lower 6MWT than anticipated (84%). Overall, 1 out of 3 patients experienced this. The EQ-5D-5L quality of life VAS score at the time of the early follow-up was 80 [70-90] out of 100; at six months, it slightly improved to 85 [77.5-90]. Between the two points in time, mobility, self-care, and regular activities all improved, in contrast to the improvements or deteriorations in pain/discomfort and depression/anxiety. The IES-R total scores of 27 out of 41 respondents were greater than the worry level of 1.6 (66%).

Mendez et al. (2021) evaluated the quality of life, psychiatric symptoms, and neurocognitive function of COVID-19 survivors shortly after their hospital discharge [29]. Data from a prospective cohort of COVID-19 survivors who were monitored for two months following hospital release were examined in this study. A series of standardized tests measuring mental illness, neurocognitive function, and quality of life (both mental and physical) were administered to individuals over the phone. Out of the 229 screened people, 179 are included in the final analysis. Of the individuals who were able to flee, 6.1% had working memory (executive function), 38% had immediate verbal memory and learning impairments that were moderate, 11.8 percent had delayed verbal memory, and 34.6 percent had verbal fluency. Furthermore, cognition impairments in all domains were observed in 58.7% of individuals. The percentage of those who tested positive for anxiety was 29.6%, sadness was 26.8%, and PTSD was 25.1%. Additionally, 39.1% of the patients had psychiatric morbidity. 39% of patients reported having a bad mental health quality of life, and 44.1% reported having a poor physical quality of life. Deficits in neurocognitive function were linked to psychological disease and delirium, and being female was linked to the occurrence of psychiatric morbidity.

Ambrosetti et al. (2021) [30] found that psychiatric emergency department (ED) admissions varied between two 8-week periods: during and shortly after the lockdown was lifted. In order to gather clinical and sociodemographic information, the University Hospital of Geneva (HUG) performed a retrospective analysis of 1477 mental emergency department (ED) consultations. Remarkably, when we compared the two groups based on

the dates of admission, the post-lockdown group exhibited more severe clinical issues (measured by an urgency degree index) than the lockdown group. Surprisingly, we observed a statistically significant rise in psychomotor agitation and suicidal conduct when the lockdown was lifted, along with a decrease in behavior disorder diagnoses. Additionally, more migrants arrived at the HUG ED as a result of the lockdown limits being lifted. According to logistic regression analysis, diagnoses of psychomotor agitation, suicidal conduct, behavioral disorders, migrant status, involuntary admission, and private resident release were associated with a prediction of a post-lockdown hospitalization.

3. RESEARCH METHODOLOGY

3.1 Research Design

This study employed a mixed-methods research design, combining quantitative and qualitative techniques, to fully assess the immediate and long-term impacts of COVID-19 on psychological outcomes and quality of life. Data is gathered at multiple times in time using a longitudinal study design in order to better understand the evolving psychological effects of the epidemic. In order to determine how the general public fared in relation to those who had direct contact with COVID-19, such as infected individuals and medical personnel, researchers also employed a comparative analysis.

3.2. Data Collection Methods

3.2.1 Primary Data Collection

To measure significant psychological variables like anxiety, depression, stress, and general quality of life, survey-based primary data collection uses standardized scales like the Hamilton Anxiety Scale (HAM-A), the Hamilton Depression Rating Scale (HDRS), and the SF-36 Health Survey for health-related quality of life (HRQoL). Healthcare workers, mental health experts, and COVID-19 survivors are interviewed in semi-structured interviews and focus groups to gain qualitative insights into coping strategies, long-term psychological suffering, and social changes. Psychometric testing is performed to assess the prevalence of PTSD and emotional distress using the Impact of Event Scale-Revised (IES-R) in order to provide a more comprehensive knowledge of the mental repercussions of the epidemic.

3.2.2 Secondary Data Collection

To gather secondary data, we searched peer-reviewed literature, clinical research, and meta-analyses to learn more about the psychological and social impacts of COVID-19. The medical and health records of healthcare facilities and national health organizations are also examined for information on hospitalizations, mental health consultations, and long-term COVID cases. As a result, we can observe trends in the results of mental health care. Furthermore, trends in mental disease diagnosis and treatment in health insurance claims from before, during, and after the pandemic can be used to better understand COVID-19-induced mental health problems.

3.3 Sampling Strategy

Stratified random sampling was employed by researchers to ensure a representative sample across all demographic categories in order to get data on the diverse psychological effects and experiences of COVID-19. Study participants range in age from 18 to 65 and come from a variety of backgrounds. Doctors, nurses, and emergency responders are among the healthcare professionals who are involved. The last category of COVID-19 survivors is short-term (within three months) and long-term (with symptoms that last longer than three months). To assess the pandemic's educational and developmental impacts, we also take into account students who experienced prolonged social isolation and school closures. We can make firm conclusions regarding how COVID-19 affects people's mental health and

quality of life, as well as uncover any differences between the groups, with an estimated total sample size of $n = 100$.

3.4 Data Analysis Techniques

3.4.1 Quantitative Analysis

Descriptive and inferential statistical methods are being used in the data analysis to examine how COVID-19 affects mental health and quality of life. Descriptive statistics like frequency distribution, standard deviation, and mean can help us better understand factors like stress, melancholy, and worry. P-tests and SPSS are examples of inferential statistics methods that are used for comparing groups of persons with different psychological health markers, such as infected vs. non-infected people.

3.4.2 Qualitative Analysis

In qualitative data analysis, theme and content analysis help us better understand the social and psychological effects of COVID-19. We can identify similarities in the challenges, coping mechanisms, and experiences of COVID-19 survivors, healthcare professionals, and affected individuals by applying thematic analysis to interview transcripts using Braun and Clarke's six-step methodology. By examining public narratives from sources such as social media, online forums, and support groups, content analysis is also utilized to assess evolving psychological health, societal shifts, and changes in mental health issues. Together with the quantitative findings, these qualitative approaches provide a more nuanced understanding of the epidemic's behavioral and psychological impacts.

4. RESULT AND DISCUSSION

Table 1 illustrates the wide age range within the sample, with the average age of the participants being 35.6 ± 9.8 years. There were 52% female participants and 48% male participants, indicating a well-balanced gender distribution. The educational backgrounds of the respondents revealed a variety of achievements: 20% had obtained master's degrees, 30% had finished high school, and 50% had achieved bachelor's degrees. In terms of the participants' work status, 40% were unemployed and 60% were employed. This indicates that a sizable portion of the sample might have experienced financial hardship, particularly during the epidemic.

Table 1: Demographic Characteristics of Participants

Variable	Category	Frequen cy (n)	Percenta ge (%)	Mea n $\pm$ SD
Age (years)	-	-	-	35.6 $\pm$ 9.8
Gender	Male	48	48%	-
	Female	52	52%	-
Education Level	High School	30	30%	-
	College	50	50%	-
	Graduate	20	20%	-
Employme nt Status	Employed	60	60%	-
	Unemploy ed	40	40%	-

Table 2 and Fig. 1 show the participants' levels of psychological distress based on their exposure to COVID-19 as assessed by the Hamilton Anxiety Scale (HAM-A) and the Hamilton Depression Rating Scale (HDRS). As compared to those who were not infected,

the results indicate that anxiety and depression were significantly more common in those who tested positive for it. In the COVID-19 positive group, the average anxiety score was 16.1 ± 4.5 , with a p-value of 0.001, whereas in the COVID-19 negative group, it was 11.2 ± 3.8 . The average depression score for the infected group was 19.2 ± 5.4 , while the non-infected groups was 13.5 ± 4.7 , confirming the substantial psychological load among virus-affected individuals. This comparison's p-value was 0.002.

Table 2: Psychological Distress Levels by COVID-19 Exposure

Group	Anxiety (HAM-A) Mean $\pm$ SD	Depression (HDRS) Mean $\pm$ SD	p-value
COVID-19 Positive	16.1 ± 4.5	19.2 ± 5.4	0.001
COVID-19 Negative	11.2 ± 3.8	13.5 ± 4.7	0.002

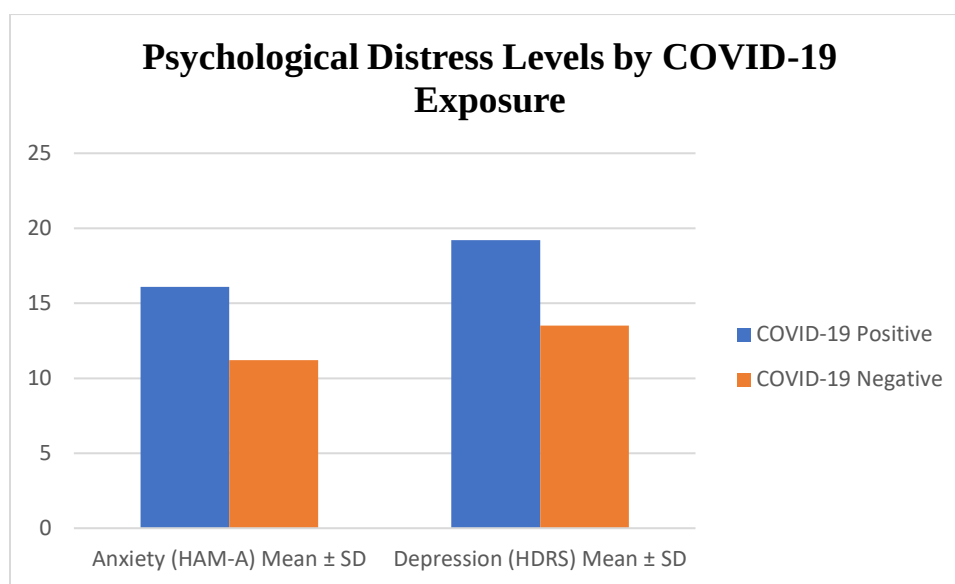


Fig. 1: Psychological Distress Levels by COVID-19 Exposure

Table 3 and Fig. 2 show that individuals who tested positive for COVID-19 performed worse in all categories than those who were healthy. The physical health scores of the COVID-19 positive group were substantially lower (60.5 ± 11.8) than those of the COVID-19 negative group (74.8 ± 10.5) ($p = 0.003$), suggesting that the infection had long-lasting physical effects. The mental health evaluations of infected individuals were lower (55.9 ± 10.7), indicating a higher incidence of psychological distress, similar to those of non-infected individuals (70.4 ± 10.8 , $p = 0.004$). The social functioning was also negatively impacted; the COVID-19-infected individuals scored 54.2 ± 12.5 on the scale, while the uninfected individuals had a significantly higher mean score of 69.1 ± 12.0 ($p = 0.002$), reflecting the interpersonal challenges and social isolation that were encountered both during and after the illness. Last but not least, the infected group's general well-being score (59.3 ± 11.6) was lower than that of the non-infected group (71.9 ± 10.9 , $p = 0.005$), indicating a substantial decline in overall life satisfaction.

Table 3: Quality of Life Scores by COVID-19 Status

Domain	COVID-19 Positive (Mean $\pm$ SD)	COVID-19 Negative (Mean $\pm$ SD)	p-value
Physical Health	60.5 $\pm$ 11.8	74.8 $\pm$ 10.5	0.003
Mental Health	55.9 $\pm$ 10.7	70.4 $\pm$ 10.8	0.004
Social Functioning	54.2 $\pm$ 12.5	69.1 $\pm$ 12.0	0.002
General Well-Being	59.3 $\pm$ 11.6	71.9 $\pm$ 10.9	0.005

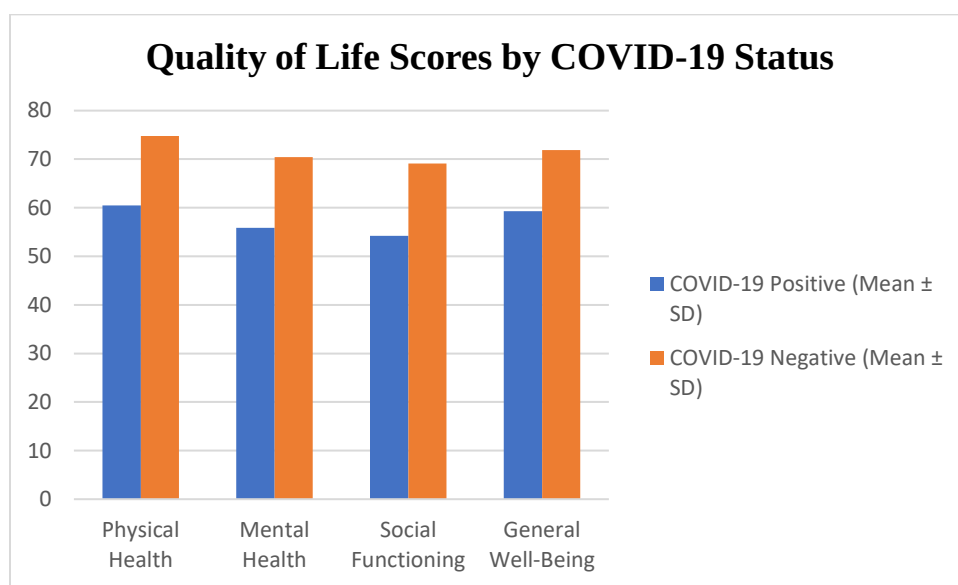


Fig. 2: Quality of Life Scores by COVID-19 Status

Table 4 and Fig. 3 show that the psychological burden was higher among those who experienced the infection, with 33% of COVID-19 positive patients exhibiting PTSD symptoms, compared to only 14% in the COVID-19 negative group. Additionally, with p-values of 0.002 and 0.001, respectively, indicating statistical significance, the infected group's Impact of Event Scale-Revised (IES-R) scores were substantially higher (27.5 ± 6.3) than those of the non-infected group (17.9 ± 5.2). These findings suggest that, in addition to physical health issues, COVID-19 induced long-term psychological distress, primarily in the form of PTSD symptoms. This is most likely due to factors including hospitalization, seclusion, and anxiety about getting really sick.

Table 4: Prevalence of PTSD Symptoms Among Participants

Group	PTSD Prevalence (%)	IES-R Score (Mean $\pm$ SD)	p-value
COVID-19 Positive	33%	27.5 ± 6.3	0.002
COVID-19 Negative	14%	17.9 ± 5.2	0.001

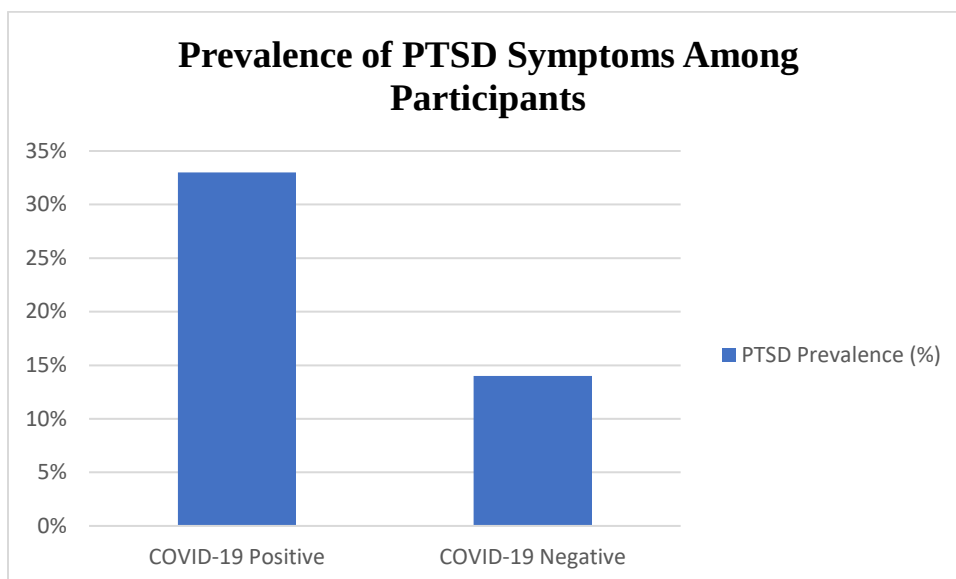


Fig. 3: Prevalence of PTSD Symptoms Among Participants

Table 5 and Fig. 4 show that there was a 22% drop in productivity for full-time employees and a 28% drop for part-time workers, with p-values of 0.004 and 0.002, respectively, indicating statistical significance. The unemployed were hit the hardest, with a productivity loss of 45% ($p = 0.001$). This means that the pandemic not only stopped people from actively working, but it also made it harder for them to find work or stay financially stable. These findings highlight the significant impact of COVID-19 on labor efficiency and economic stability; the most affected groups are those who are unemployed or working part-time, who will have the hardest time maintaining productivity and finding new employment.

Table 5: Work Productivity Loss Due to COVID-19

Work Status	Productivity Loss (%)	p-value
Full-Time	22%	0.004
Part-Time	28%	0.002
Unemployed	45%	0.001

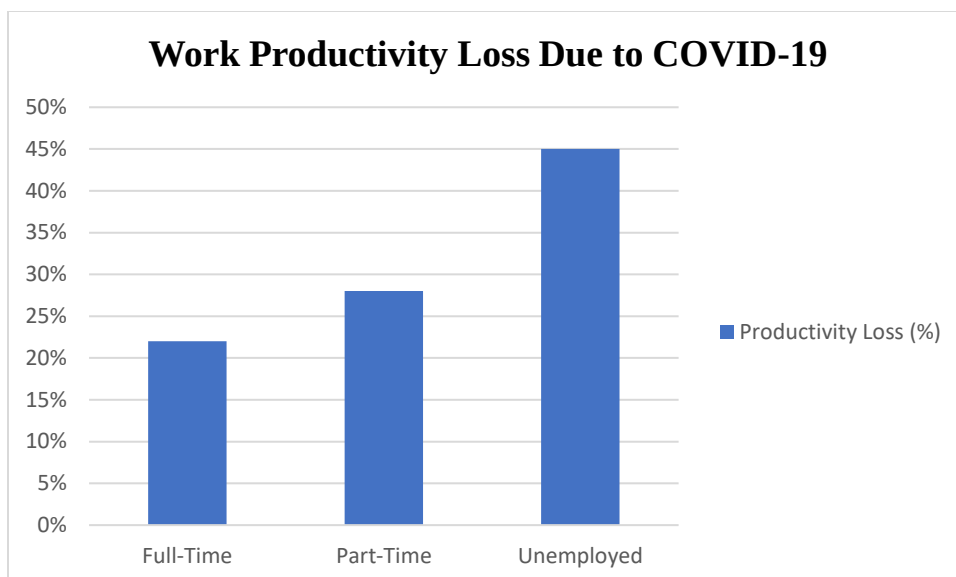


Fig. 4: Work Productivity Loss Due to COVID-19

Table 6 and Fig. 5 show that the participants who tested positive for COVID-19 had an average sleep quality score of 6.5 ± 1.9 , which was considerably higher than the 5.0 ± 1.4 of the non-infected group (p -value = 0.002). Poorer sleep is indicated by a higher score on the sleep quality scale, which is a reflection of more frequent interruptions, insomnia, or other sleep issues. According to these findings, COVID-19 might have disrupted sleep due to stress, anxiety, breathing difficulties, or persistent symptoms.

Table 6: Sleep Quality Scores by COVID-19 Status

Group	Sleep Quality Score (Mean $\pm$ SD)	p-value
COVID-19 Positive	6.5 ± 1.9	0.002
COVID-19 Negative	5.0 ± 1.4	0.002

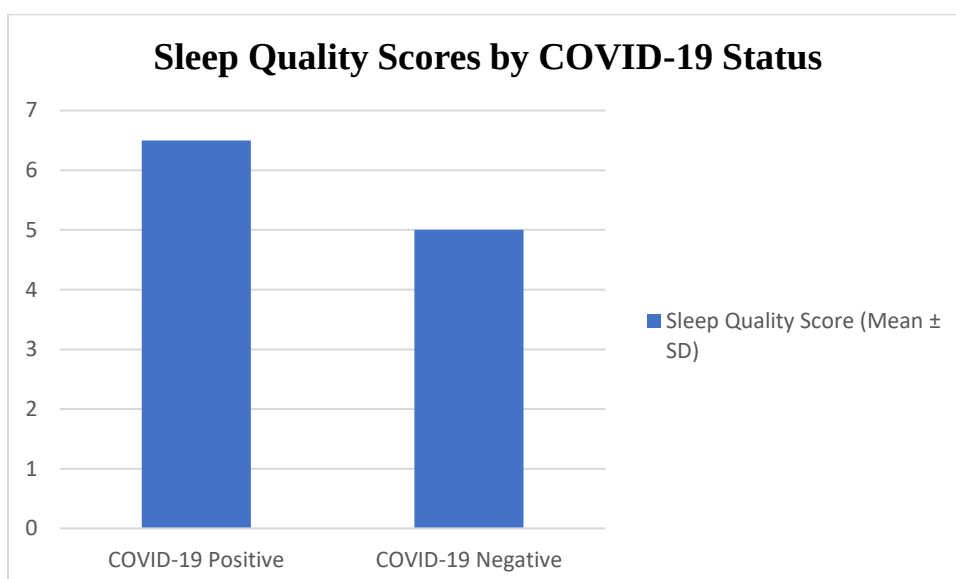


Fig. 5: Sleep Quality Scores by COVID-19 Status

Table 7 and Fig. 6 show that the participants who tested positive for COVID-19 had a significantly lower social support score (43.7 ± 9.9) compared to the non-infected group (59.8 ± 9.4), with a p-value of 0.001. It appears that those who developed COVID-19 were more likely to feel lonely, less involved in their communities, or unsupported emotionally and psychologically both during and after their illness. Quarantine restrictions, the social shame of being sick, or the incapacity to participate in regular social engagements could all be to blame for the decline in perceived social support. Social support and connectivity are important for mental health and rehabilitation; in contrast, those who were not infected had more of both.

Table 7: Social Support Levels Among Participants

Group	Social Support Score (Mean $\pm$ SD)	p-value
COVID-19 Positive	43.7 ± 9.9	0.001
COVID-19 Negative	59.8 ± 9.4	0.001

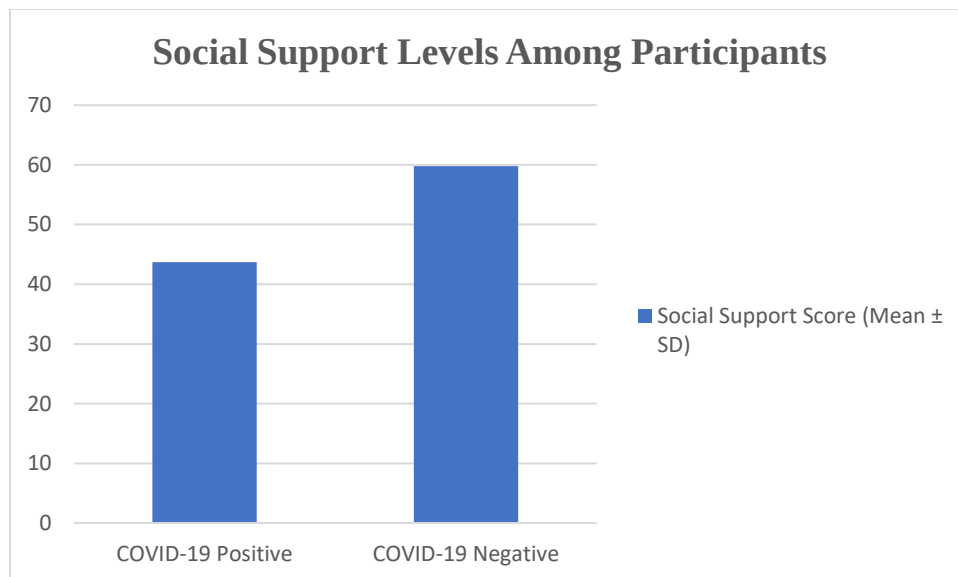


Fig. 6: Social Support Levels Among Participants

Table 8 and Fig. 7 demonstrate that the most often reported symptom, physical fatigue, remained after recovery for 48% of individuals ($p = 0.003$). With cognitive deficits like memory problems and lack of focus, brain fog has a substantial impact on mental clarity and day-to-day functioning, as evidenced by the fact that 32% of participants experienced it ($p = 0.0004$). Depression was experienced by 26% of individuals ($p = 0.002$), which may have been brought on by a lack of social engagement and chronic health issues. Furthermore, breathing difficulties were experienced by 22% of participants ($p = 0.005$), which may suggest ongoing respiratory problems that restrict physical activity and overall health.

Table 8: Prevalence of Long COVID Symptoms

Symptom	Prevalence (%)	p-value
Fatigue	48%	0.003
Brain Fog	32%	0.004
Depression	26%	0.002
Breathing Difficulty	22%	0.005

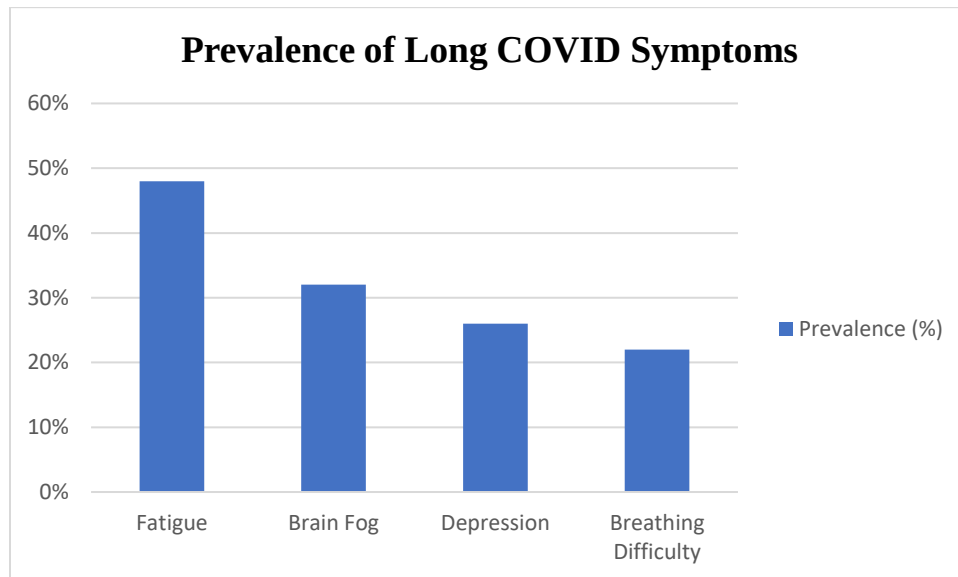


Fig. 7: Prevalence of Long COVID Symptoms

Table 9 and Fig. 8 show the highest decline in academic performance among high school students (42%, $p = 0.002$). Inadequate online learning resources, longer school closures, and fewer peer relationships were most likely the causes of this. Students' academic performance was adversely affected by variables such increased stress, a lack of in-person instruction, and difficulty adjusting to virtual learning, as seen by a 34% decline ($p = 0.003$), even though access to remote education had improved. The smaller but still significant 27% performance decline among graduate students may have been caused by disruptions in research activities, restricted access to laboratory work, and trouble focusing in remote settings ($p = 0.004$).

Table 9: Impact of COVID-19 on Academic Performance

Education Level	Performance Decline (%)	p-value
High School	42%	0.002
College	34%	0.003
Graduate	27%	0.004

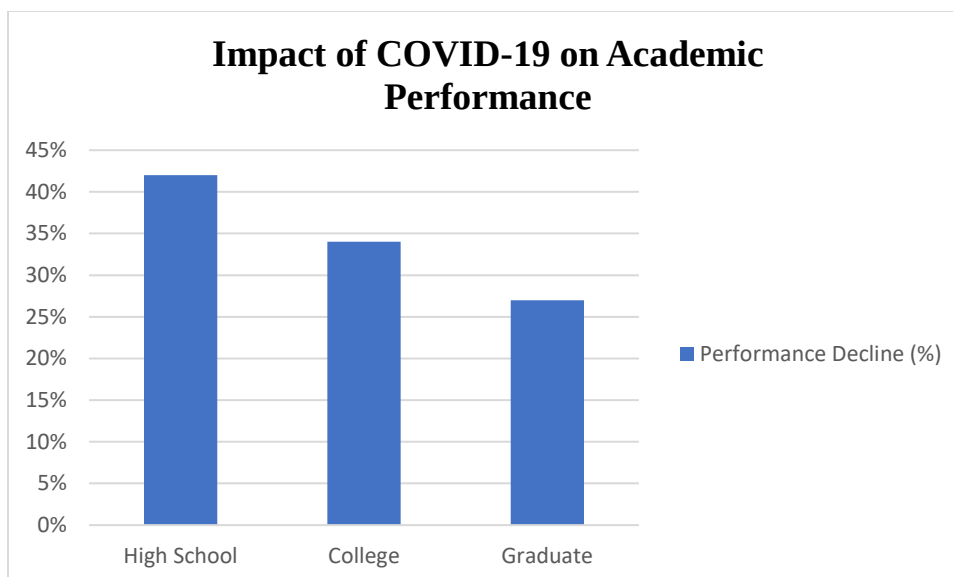


Fig. 8: Impact of COVID-19 on Academic Performance

Table 10 and Fig. 9 show that the highest percentage increase (62%, $p = 0.001$) was for online therapy, suggesting that people used virtual mental health services as a primary coping mechanism during social isolation and lockdowns. Teletherapy's ease of use, affordability, and accessibility most likely contributed to this rise. The 29% increase in their use indicates that there may have been restrictions and safety concerns related to the pandemic that limited their availability, even though some people still preferred face-to-face meetings. The epidemic exacerbated stress-related disorders, anxiety, and depression, increasing reliance on pharmaceutical treatment, resulting in a 41% increase in drug use for mental health issues ($p = 0.002$).

Table 10: Mental Health Service Utilization During Pandemic

Service Type	Utilization Increase (%)	p-value
Online Counseling	62%	0.001
In-Person Therapy	29%	0.003
Medication Use	41%	0.002

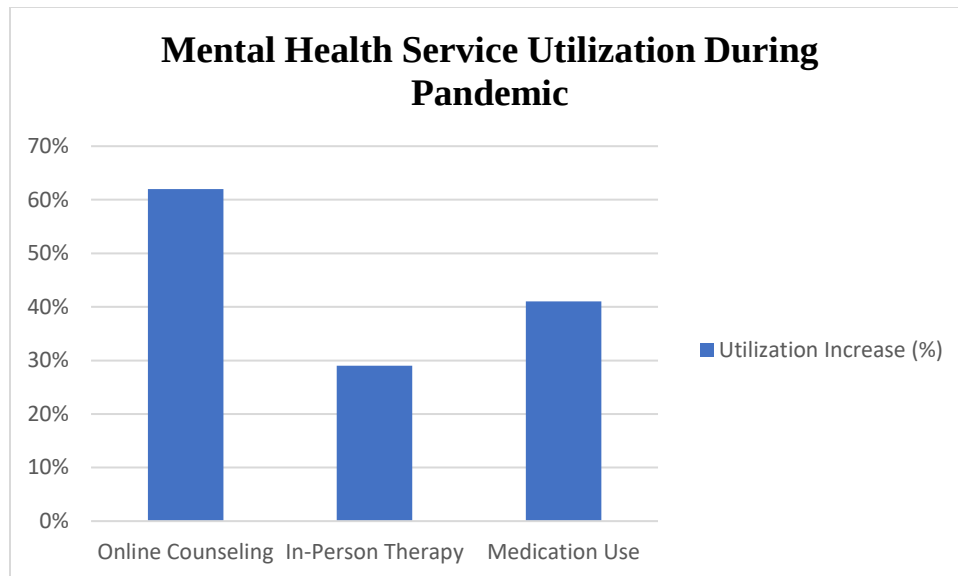


Fig. 9: Mental Health Service Utilization During Pandemic
CONCLUSION

In conclusion, the COVID-19 pandemic has severely impacted people from all areas of life, affecting their quality of life and mental health both immediately and over time. In comparison to those who did not have the virus, researchers discovered that those infected with it had significantly worse mental health, social support, sleep quality, and academic accomplishment. The mental toll that the virus takes is shown by the higher likelihood of anxiety, depression, and post-traumatic stress disorder (PTSD) among those who tested positive for COVID-19. Due to the epidemic's significant effects on both economic stability and workplace productivity, those who were unemployed and part-time employees were the most affected. Long-lasting COVID symptoms like fatigue, mental haze, and respiratory problems necessitate ongoing medical attention and rehabilitation. It is evident that more people require access to psychological treatment since during the epidemic, more people required medication, online counseling, and mental health services. Implementing social reintegration strategies, mental health treatments, and policies that support economic recovery and education are crucial for addressing the long-term consequences of COVID-19 and enhancing general health in the post-pandemic era.

REFERENCES

1. Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The lancet*, 395(10227), 912-920.
2. Holmes, E. A., O'Connor, R. C., Perry, V. H., Tracey, I., Wessely, S., Arseneault, L., ... & Bullmore, E. (2020). Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *The lancet psychiatry*, 7(6), 547-560.
3. Pfefferbaum, B., & North, C. S. (2020). Mental health and the Covid-19 pandemic. *New England journal of medicine*, 383(6), 510-512.
4. Rajkumar, R. P. (2020). COVID-19 and mental health: A review of the existing literature. *Asian journal of psychiatry*, 52, 102066.
5. Wu, B. (2020). Social isolation and loneliness among older adults in the context of COVID-19: a global challenge. *Global health research and policy*, 5(1), 27.

6. Loades, M. E., Chatburn, E., Higson-Sweeney, N., Reynolds, S., Shafran, R., Brigden, A., ... & Crawley, E. (2020). Rapid systematic review: the impact of social isolation and loneliness on the mental health of children and adolescents in the context of COVID-19. *Journal of the American Academy of Child & Adolescent Psychiatry*, 59(11), 1218-1239.
7. Van Lancker, W., & Parolin, Z. (2020). COVID-19, school closures, and child poverty: a social crisis in the making. *The Lancet Public Health*, 5(5), e243-e244.
8. Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M., Gill, H., Phan, L., ... & McIntyre, R. S. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of affective disorders*, 277, 55-64.
9. Patel, J. A., Nielsen, F. B. H., Badiani, A. A., Assi, S., Unadkat, V. A., Patel, B., ... & Wardle, H. (2020). Poverty, inequality and COVID-19: the forgotten vulnerable. *Public health*, 183, 110.
10. Vindegaard, N., & Benros, M. E. (2020). COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. *Brain, behavior, and immunity*, 89, 531-542.
11. Rogers, J. P., Chesney, E., Oliver, D., Pollak, T. A., McGuire, P., Fusar-Poli, P., ... & David, A. S. (2020). Psychiatric and neuropsychiatric presentations associated with severe coronavirus infections: a systematic review and meta-analysis with comparison to the COVID-19 pandemic. *The Lancet Psychiatry*, 7(7), 611-627.
12. Davis, H. E., Assaf, G. S., McCorkell, L., Wei, H., Low, R. J., Re'em, Y., ... & Akrami, A. (2021). Characterizing long COVID in an international cohort: 7 months of symptoms and their impact. *EClinicalMedicine*, 38.
13. Torales, J., O'Higgins, M., Castaldelli-Maia, J. M., & Ventriglio, A. (2020). The outbreak of COVID-19 coronavirus and its impact on global mental health. *International journal of social psychiatry*, 66(4), 317-320.
14. Lopez-Leon, S., Wegman-Ostrosky, T., Ayuzo del Valle, N. C., Perelman, C., Sepulveda, R., Rebolledo, P. A., ... & Villapol, S. (2022). Long-COVID in children and adolescents: a systematic review and meta-analyses. *Scientific reports*, 12(1), 9950.
15. Buonsenso, D., Pujol, F. E., Munblit, D., Pata, D., McFarland, S., & Simpson, F. K. (2022). Clinical characteristics, activity levels and mental health problems in children with long coronavirus disease: a survey of 510 children. *Future Microbiology*, 17(8), 577-588.
16. Ha, E. K., Kim, J. H., & Han, M. Y. (2023). Long COVID in children and adolescents: prevalence, clinical manifestations, and management strategies. *Clinical and Experimental Pediatrics*, 66(11), 465.
17. Morrow, A. K., Villatoro, C., Kokorelis, C., Rowe, P. C., & Malone, L. A. (2024). Orthostatic intolerance in children with Long COVID utilizing a 10-minute passive standing test. *Clinical pediatrics*, 00099228241272053.
18. Spera, F. R., Mistrulli, R., Salerno, L., Vannini, F., Muthukkattil, M. L., Falcetti, R., ... & Buonsenso, D. (2024). Post-COVID postural orthostatic tachycardia syndrome and inappropriate sinus tachycardia in the pediatric population. *Current Clinical Microbiology Reports*, 1-11.
19. Centers for Disease Control and Prevention. (2020). National center for immunization and respiratory diseases (NCIRD). *1918 Pandemic Influenza: Three Waves*.
20. Moy, F. M., Hairi, N. N., Lim, E. R. J., & Bulgiba, A. (2022). Long COVID and its associated factors among COVID survivors in the community from a middle-income country—An online cross-sectional study. *PloS one*, 17(8), e0273364.

21. Liang, S., Yuan, L., Wang, A., Li, S., Wei, Y., Wen, T., ... & Wu, M. (2025). Effect of short-term exercise-based prehabilitation program for patients undergoing liver cancer surgery: A randomized controlled trial. *Surgery*, 180, 109115.
22. Basaca, D. G., Jugănar, I., Belei, O., Nicoară, D. M., Asproni, R., Stoicescu, E. R., & Mărginean, O. (2025). Long COVID in Children and Adolescents: Mechanisms, Symptoms, and Long-Term Impact on Health—A Comprehensive Review. *Journal of Clinical Medicine*, 14(2), 378.
23. Steed, L. C., & Langlais, M. (2025). Consider the Siblings: A Mixed-Method Study on the Short-Term and Long-Term Consequences of Having a Sibling With a Physical and/or Cognitive Disability and Perceived Support. *The Family Journal*, 33(1), 140-149.
24. Rafsanjani, K., Ghaseminejad-Raeini, A., Azarboo, A., & Parsa, S. (2025). Short-term efficacy of moderate-intensity rosuvastatin in coronavirus disease 2019 patients: A randomized clinical trial. *Journal of Investigative Medicine*, 73(1), 85-93.
25. Kim, P., & Kim, D. (2025). Impact of the COVID-19 pandemic on mental health management: Evidence from individual-level universal insurance claims data. *Labour Economics*, 92, 102673.
26. Althomali, O. W., Amin, J., Shaik, D. H., Alghamdi, W., Ibrahim, A. A., Hussein, H. M., & Kanwal, R. (2024). Short-Term and Long-Term Impact of COVID-19 on Quality of Life and Psychological Outcomes in Saudi Arabia: A Comparative Cross-Sectional Study. *Journal of Multidisciplinary Healthcare*, 505-515.
27. Poletti, S., Palladini, M., Mazza, M. G., De Lorenzo, R., Furlan, R., Ciceri, F., ... & Benedetti, F. (2022). Long-term consequences of COVID-19 on cognitive functioning up to 6 months after discharge: role of depression and impact on quality of life. *European archives of psychiatry and clinical neuroscience*, 1-10.
28. Carenzo, L., Protti, A., Dalla Corte, F., Aceto, R., Iapichino, G., Milani, A., ... & Humanitas COVID-19 Task Force. (2021). Short-term health-related quality of life, physical function and psychological consequences of severe COVID-19. *Annals of intensive care*, 11(1), 91.
29. Méndez, R., Balanzá-Martínez, V., Luperdi, S. C., Estrada, I., Latorre, A., González-Jiménez, P., ... & Menéndez, R. (2021). Short-term neuropsychiatric outcomes and quality of life in COVID-19 survivors. *Journal of internal medicine*, 290(3), 621-631.
30. Ambrosetti, J., Macheret, L., Folliet, A., Wullschleger, A., Amerio, A., Aguglia, A., ... & Costanza, A. (2021). Psychiatric emergency admissions during and after COVID-19 lockdown: short-term impact and long-term implications on mental health. *BMC psychiatry*, 21, 1-8.