

Post-Covid Symptoms and Quality of Life among Covid-19 Survivors

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Abstract

The study aimed to identify the post-COVID symptoms and quality of life of COVID-19 survivors. A descriptive survey design was adopted. A cohort of 200 participants who sought treatment from Govt Medical College Hospital, Kozhikode, was selected by purposive sampling technique based on sampling criteria. Tools included socio-personal and clinical variables, post-COVID symptoms checklist, and a standardised tool euro QoL 5D -5L tool. The relationship between QoL of COVID-19 survivors with post-COVID symptoms was tested with an independent t-test and the relationship between QoL of COVID-19 survivors with selected variables tested with ANOVA and independent t-test. The mean index score of QoL was 0.839. Among the study participants, 69.5 percent had fatigue, 61.5 percent had palpitation, and 49.5 percent had numbness as major post-COVID symptoms. A significant association was found between quality of life and post-COVID symptoms (shortness of breath, cough, palpitation, chest pain, discoloration of finger and toe, swelling of foot, fatigue, headache, weakness, numbness, rashes, vision problems, muscle/joint pain, urinary elimination issues, decreased sleep, and anxiety). A significant relationship was found between quality of life and education, category of COVID-19 infection, and institutionalisation during COVID-19 infection. The study concluded that quality of life is compromised among COVID-19 survivors. Thus, healthcare professionals must adopt a more individualised approach towards survivors of COVID-19 for symptom management, health promotion, meeting specific psychosocial needs, and surveillance for recurrence and specific late effects of infection with a view to adding life to days rather than days to life.

Key words: COVID-19 survivors, Quality of Life (QoL), Post-COVID symptoms

Pandemics are outbreaks of infectious diseases that can greatly increase morbidity and mortality over a wide geographic area and cause significant economic, social, and political disruption (Cheval et al, 2020). Severe acute respiratory syndrome Corona Virus 2 (SARS-CoV-2) has resulted in a global pandemic and an unprecedented public health crisis. It has infected more than 75 million people worldwide. Clinical features vary from a mild asymptomatic state to a severe state with respiratory dysfunction, thrombotic complications, and multi-organ failure.

Recent literature suggests the emergence of a novel syndrome known as long COVID/Post-COVID-19 syndrome, a term used to describe a diverse set of symptoms that persist after a diagnosed COVID-19 infection. Although most people with COVID-19 get better within weeks of illness, some people experience post-COVID conditions. Post-COVID conditions are a wide range of new,

returning, or ongoing health problems people can experience more than four weeks after first being infected with the virus that causes COVID-19. Even people who did not have symptoms when they were infected can have post-COVID conditions (Taribagil et al, 2021).

Need and significance of the study: Patients with persisting symptoms after recovery from COVID-19 infection are common now-a-days. Various manifestations are present after COVID-19 infection that were not present before COVID-19. Multiple studies have provided variable estimates regarding post-acute COVID-19 symptoms. The prevalence of these symptoms ranges from 10 percent to 87.4 percent across various studies. A recent report from the CDC suggested that 35 percent of individuals suffering from COVID-19 did not fully recover and had some lingering symptoms. Variability in the numbers reported in the literature may be due to the small sample size of the studies, recall as well as selection bias among participants in these studies, and difference in time period for defining Post-COVID sequelae/symptoms across studies (MoHFW, 2021).

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Objectives

The study was set out with the objectives to:

- Assess post-COVID symptoms among COVID-19 survivors.
- Assess the Quality of Life among COVID-19 survivors.
- Find out the relationship between Quality of Life (QoL) and post-COVID symptoms among COVID-19 survivors.
- Find out the relationship between Quality of Life (QoL) and selected socio-personal variables among COVID-19 survivors.

Hypotheses

H₁: There is a significant relationship between QoL and post-COVID symptoms among COVID-19 survivors.

H₂: There is a significant relationship between QoL and selected socio-personal variables among COVID-19 survivors.

Review of Literature

A study (Taquet et al, 2021) on Incidence, co-occurrence, and evolution of long-COVID features with their relationship to age, sex, or severity of infection and the extent to which they are specific to COVID-19 conducted among 273,618 COVID-19 survivors indicated that 57 percent had one or more long COVID feature recorded during the whole six month period (including the acute phase), and 36.55 percent between three and six months. Common symptoms were abnormal breathing, fatigue/malaise, chest/throat pain, abdominal symptoms, and myalgia.

Anaya et al (2021) conducted study among patients who had COVID-19 infection and also had post-COVID symptoms. It revealed that common post-COVID symptoms manifestations were fatigue/muscle weakness, dyspnoea, pain and discomfort, anxiety/depression, and impaired concentration.

The results of a study to identify the QoL in patients with COVID-19 infection after recovery using Bangla version of the World Health Organization Quality of Life Brief (WHOQOL-BREF) showed that mean scores of QoL were 68.25 ±14.45 in physical domain, 65.10±15.78 in social domain, 63.28±15.48 in psychological domain, and (62.77±13.07) in environmental domain. Quality of life was lower in persons having a chronic disease (Hawladar et al, 2022).

Materials and Methods

A quantitative non-experimental descriptive survey design was adopted for the study. The study

was conducted among 200 COVID-19 survivors having sought treatment from Post-COVID OPD, Govt Medical College Hospital Kozhikode during 02/03/2022 to 02/04/2022. Purposive sampling technique was used to select the sample. Ethical clearance was obtained from the institutional scientific review committee and institutional ethics committee of the College. Self-prepared tool was used to collect socio-personal data and post-COVID symptoms. The QoL was assessed using standardised tool EQ 5D -5L tool. The reliability of tool 2 (Check list to identify post-COVID symptoms) was checked by the Kappa coefficient, and the value was between 0.6 to 1 for all the items. After explaining the purpose of the study and assuring confidentiality of the data, informed consent was obtained from the study participants.

Results

Most of the participants belonged to 41-50 years of age group (29.5%) and majority of study participants were females (58%). Most of the participants belonged to category A COVID-19 infection (70%). Participants hospitalised during the COVID-19 infectious period were 33 percent, among them, 6 percent received oxygen via invasive mode (Table 1).

Most reported post-COVID symptoms (Table 2) were: fatigue (69.5%), palpitation (61.5%), numbness (49.5%), shortness of breath (42.5%), and muscle or joint pain (42.5%), decreased sleep (31%), weakness (21%), swelling on foot (19%), hair loss (17.5%) rashes (12%).

The QoL was assessed using the EQ 5D 5L tool. The total quality index score of the tool is between 0 to 1 and EQ VAS score is between 0 to 100. The mean index score and EQ VAS among the participants were 0.839 with SD 0.133 (which indicate good quality of life, since maximum score was 1 and 72.23 with SD 14.37, respectively. Most of the participants had quality index scores less than 0.50 (37.5%), and 36.5 percent had quality index scores between 0.51-0.75.

In the mobility domain, 70 percent had problems in walking; 2.5 percent had severe problems in walking, and 18 percent had moderate problems in walking (Fig 1); 52.5 percent had problems in self-care domain, 8.5 percent had moderate problems and 44 percent had slight problems in self-care (Fig 2). Approximately, 70 percent had issues in usual activities; 2 percent had severe problems in usual activities (Fig 3); 40 percent had slight pain or discomfort in the pain/ discomfort domain; (Fig 4). Among the participants 27 percent had slight anxiety/depression, and 2 percent had moderate anxiety/depression (Fig 5).

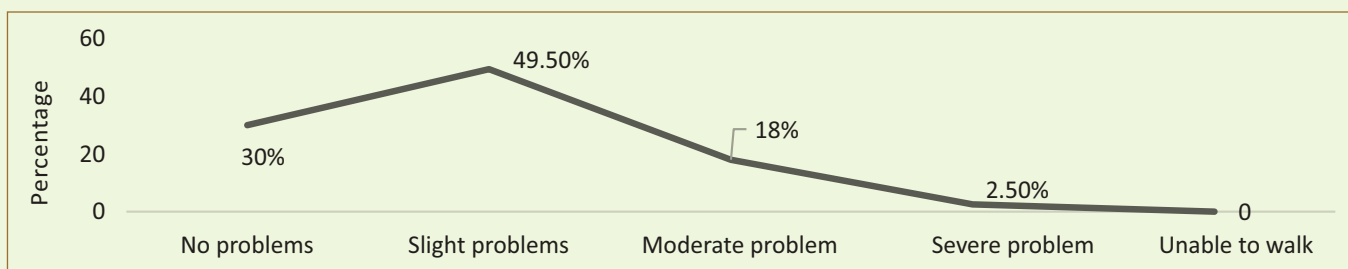


Fig1: Percentage distribution of participants based on mobility domain.

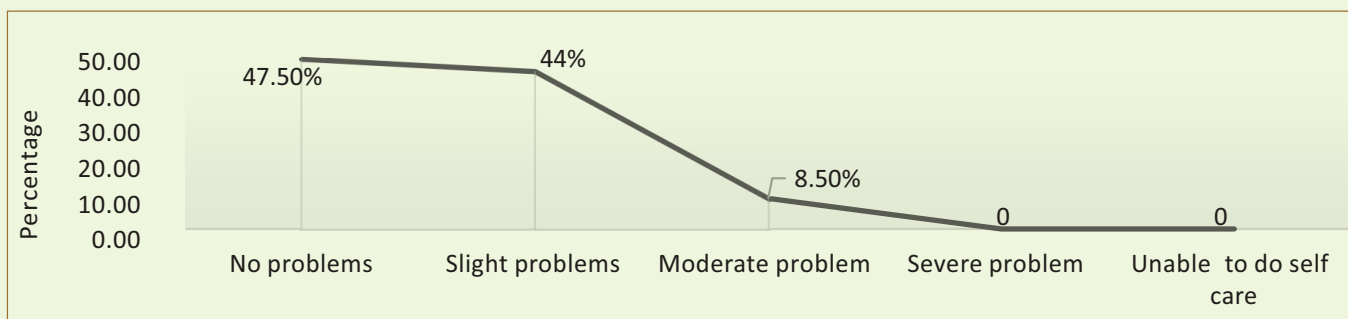


Fig 2: Percentage distribution of participants based on self-care domain.

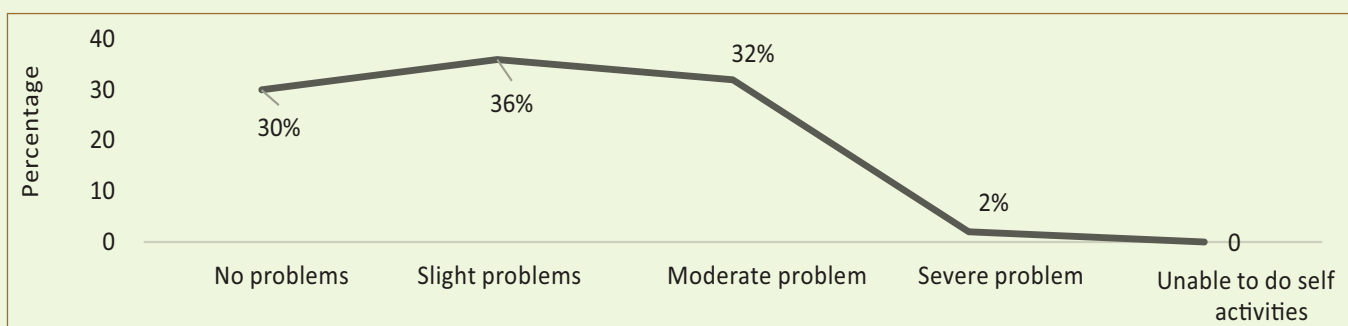


Fig 3: Percentage distribution of participants based on usual activities.

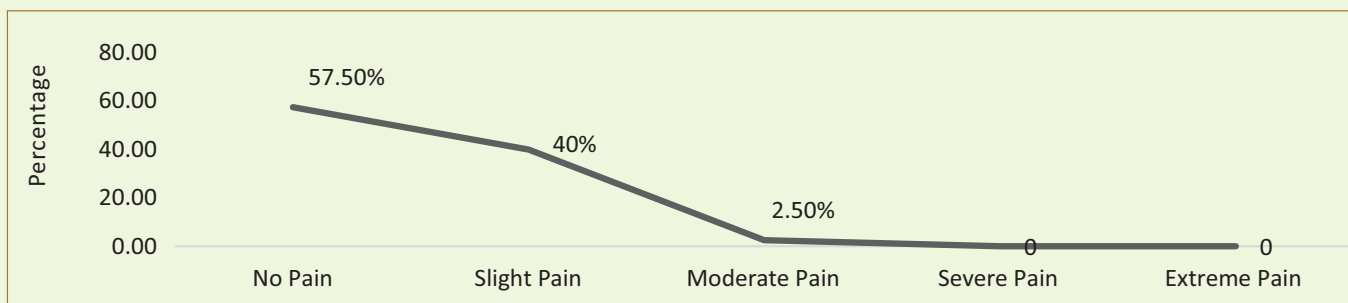


Fig 4: Percentage distribution of participants based on pain/discomfort.

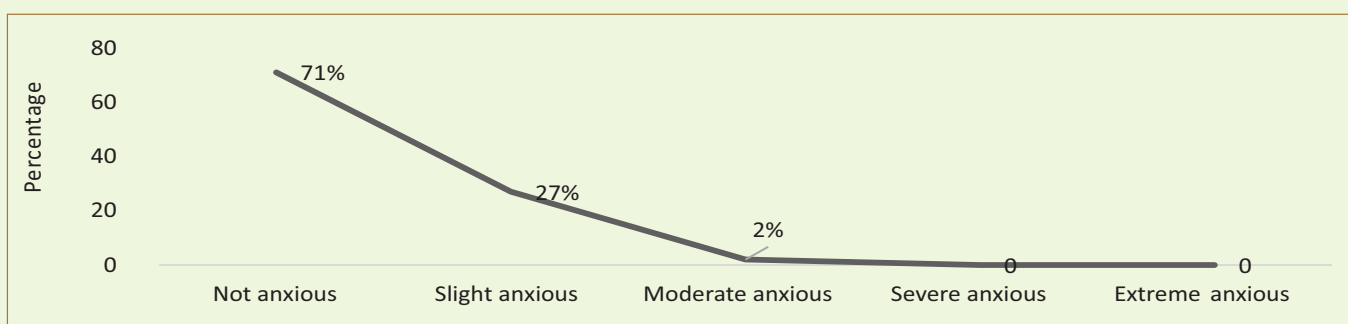


Fig 5: Percentage distribution of participants based on anxiety/depression.

The relationship between QoL and post-COVID symptoms was assessed using an independent t-test, and results are outlined in Table 3. The relationship between QoL and selected socio-personal variables tested using an independent t-test and ANOVA; the results are shown in Table 4.

Significant relationship between post-COVID symptoms and QoL was found for following symptoms: shortness of breath, cough, palpitation, chest pain, discoloration of finger and toe, swelling of foot, fatigue, headache, numbness, rashes, vision problems, muscle/joint pain, urinary elimination problems, decreased sleep, anxiety, and weakness (Table 3). From Table 4 it is evident that there is significant relationship between QoL and selected socio-personal variables such as stay during COVID-19 infection period, educational qualification, and COVID-19 category.

Discussion

The findings of the present study revealed that the most common post-COVID symptoms reported were fatigue (69.5%), palpitation (61.5%), shortness of breath (42.5%), muscle/joint pain (47.5%), chest pain (4.5%), headache (32.5%), decreased sleep (31%), anxiety (14%), hair loss (17.5%), swelling of the foot (19%), cough (25%), loss of taste & smell (7%), and memory loss (3%). While review the literature 3 similar and 2 opposing study were identified. The finding is concordant with the results of a study (Mahmoud et al, 2021). Who, Carfi et al (2020) found fatigue (63.3%), post-traumatic stress disorder (54.0%), and malaise (39.3%). The finding is also concordant with the results of Carfi et al (2020) who reported fatigue (53.1%), dyspnoea (43.4%), joint pain (27.3%) and chest pain (21.7%) among acute Covid-19 patients. A prospective cohort study by Huang et al (2021) shows that fatigue/muscular weakness was the most commonly reported symptom (63%), followed by sleep difficulties (26%) and anxiety/depression (23%). The findings do not support the results of the study by Todt et al (2021) who revealed smell or taste disorder (22%), dyspnoea (16%), headache (12%), memory impairment (11%), hair loss (10%), and sleep disorders (10%). Another contradictory findings from a study in France (Carvalho-Schneider et al, 2021) found fatigue (53.1%), dyspnoea (43.4%), joint pain (27.3%) and chest pain (21.7%) as the most commonly reported symptoms.

In the present study, 67 percent of participants were on home quarantine during the COVID-19 infection, and 33 percent were hospitalised during COVID-19 infection period. The finding were similar with the results of Mahmoud et al (2021) who

showed that 49 percent were on home quarantine during COVID-19 infection and 51 percent were hospitalised during COVID-19 infection period. Further, 48 percent were partially vaccinated and 29.3 percent were fully vaccinated. These findings were similar with present study findings, regarding vaccination 13 percent were partially vaccinated and 74.5 percent were fully vaccinated.

In the present study there was no relationship between quality of life and vaccination status supporting a study conducted in UK, which showed no significant worsening in quality-of-life metrics before versus after vaccination (Arnold et al, 2021).

The present study findings revealed that majority of participants (58%) were females and majority of participants in the age group 41-50 years and there was no relationship between quality of life and sex among COVID-19 survivors. This is supported by study of Goertz et al (2020); among the total participants 85 percent were women and about age group majority belonged to age group 39-54 years. The findings not concordant with these of Desgranges et al (2022) which revealed that at three months post-hospital discharge female sex was independently associated with worsening of HRQoL.

The findings of the present study revealed that all domains of QoL were affected but most rated were anxiety/depression (71%); the finding were supported with results of the study conducted among COVID-19 survivors by Desgranges et al (2022) that shows anxiety/depression domain (65.6%) as most rated domain. Another study Alanzai et al, (21023) on impact of COVID-19 on the health-related QoL of patients during infection and after recovery in Saudi Arabia shows anxiety/depression were most affected domain after recovery.

A study on post-discharge persistent symptoms and health-related QoL after hospitalisation for COVID-19 (Garriguez et al, 2020) shows mean EQ-VAS was 70.3 and mean EQ-5D index score was 0.86., while in the present study EQ-5D index score is about 0.84 and EQ-VAS was 72.23.

Nursing Implications

Nursing practice: There are various factors that determine the quality of life of COVID-19 survivors. The nurses working in the field should be aware of Post COVID symptoms and contributing factors to the quality of life of COVID-19 survivors. The present study helps practicing nurses to provide holistic care to patients to improve their quality of life by considering all the factors.

Nursing education: The findings can fill the gap in the body of knowledge and provide scope to include more specific plans of care in the nursing

curriculum. The nursing students must be well trained in the care of COVID-19 survivors. The present study can contribute more to the nursing curriculum focusing on individualized, holistic care of COVID-19 survivors.

Recommendations

- Planned strategies to improve QoL can be organised and further evaluated to find out the effectiveness in improving the quality of life.
- Follow-up studies can be conducted at various time intervals.
- Prevalence of Post COVID issues can be conducted among:
 - Those who receive various vaccines.
 - Males and females.
 - Having comorbidities who were not having comorbidities.

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Conclusion

The study aimed to assess post-COVID symptoms and quality of life among COVID-19 survivors seeking treatment from Govt Medical College Hospital, Kozhikode. Based on the findings, the following conclusions were drawn. Common post-COVID symptoms were fatigue (69.5%), palpitation (61.5%), numbness (49.5%), shortness of breath (42.5%), muscle or joint pain (47.5%), and headache (32.5%). The mean VAS score is about 72.3 with a standard deviation of 14.37, the index score is about 0.839, and the standard deviation is 0.133. There is a significant relationship between quality of life and post-COVID symptoms; the symptoms are shortness of breath, cough, palpitation, chest pain, discoloration of finger and toe, swelling of the foot, fatigue, headache, weakness, numbness, rashes, vision problems, muscle/joint pain, urinary elimination issues, decreased sleep and anxiety. There is a significant relationship in education, category of COVID-19 infection and stay during COVID-19 infection.

Table 1: Frequency and percentage distribution of study participants based on socio personal data (n=200)

Parameters	Frequency	Percentage
<i>Age in years</i>		
Less than 30	26	13
31-40	29	14.5
41-50	59	29.5
51-60	34	17
61-70	28	14
More than 70	24	12

Parameters	Frequency	Percentage
<i>Sex</i>		
Male	84	42
Female	116	58
<i>Category of COVID-19 Infection</i>		
Category A	140	70
Category B	48	24
Category C	12	6
<i>Type of vaccine taken</i>		
Covishield	169	84.5
Covaxin	16	8
Sputnik V	1	0.5
Not received vaccine	14	7
<i>Current Vaccination Status</i>		
Single doe	26	13
Two doses	150	75
Precautionary dose	10	5
Not vaccinated	14	7
<i>Vaccination status during COVID-19 infection period</i>		
Single doe	41	20.5
Two doses	0	0
Precautionary dose	60	30
Not vaccinated	99	49.5
<i>Stay during COVID-19 infection</i>		
Home	134	67
Hospital	66	33
<i>Supplemental oxygen therapy among hospitalized participants (n=66)</i>		
Invasive	4	6
Non-invasive	27	41
Not received	35	53

Table 2: Frequency and percentage distribution of participants based on post-COVID symptoms (n=200)

Parameters	Frequency	Percentage
<i>Respiratory symptoms</i>		
Shortness of breath	85	42.5
Cough	50	25
Sore throat	16	8
<i>Cardiovascular symptoms</i>		
Chest pain	21	10.5
Palpitation	123	61.5
Discolouration in finger and toe	3	1.5
Swelling on foot	38	19
<i>Neurological symptoms</i>		
Fatigue	139	69.5
Fever	5	2.5
Headache	65	32.5
Weakness	42	21
numbers	99	49.5
Memory loss	6	3
<i>Eye, ENT and integumentary symptoms</i>		
Loss of taste and smell	14	7
Rashes	24	12
Vision problem	12	6

Parameters	Frequency	Percentage
Hair loss	35	17.5
<i>Gastrointestinal symptoms</i>		
Nausea/vomiting	4	2
<i>Musculoskeletal symptoms</i>		
Muscle/joint pain	85	42.5
<i>Endocrine system</i>		
Diabetes mellitus	8	4
<i>Genitourinary and reproductive symptoms</i>		
Urinary elimination issues	13	6.5
Menstrual abnormality	4	2
<i>Others</i>		
Decreased sleep	62	31
Inability to concentrate	3	1.5
Mood change	2	1
Anxiety	28	14

Table 3: Relationship between QoL and post-COVID symptoms (n=200)

Variable	t value	p-value
Shortness of breath	5.43	0.001***
Cough	2.82	0.001***
Palpitation	5.34	0.001***
Chest pain	4.43	0.001***
Discolouration of finger and toe	2.23	0.028*
Swelling of foot	5.07	0.001***
Fatigue	8.04	0.001***
Headache	4.94	0.001***
Numbness	7.49	0.001***
Rashes	2.93	0.004***
Vision problems	2.50	0.013**
Muscle/ joint pain	6.11	0.001***
Urinary elimination problems	2.28	0.023*
Decreased sleep	6.2	0.001***
Anxiety	4.8	0.001***
Weakness	6.47	0.001***

Table 4: Relationship between quality of life and selected socio-personal variable (n=200)

Variable	t value/F	p-value
Stay during COVID-19 infection period	4.196	0.001***
Education qualification (ANOVA)	8.03	0.001***
COVID category (ANOVA)	2	0.001***

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