

The Functional Capacity and Quality of Life in COVID-19 Survivors of Ahmedabad City: An Observational Study

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ABSTRACT

Background and need of research: The COVID-19 affected the lung, so, lots of people were not able to do work normally. Functional Capacity and Quality of Life of people may get hampered. So, a study is done to check long term impact of COVID-19 after second wave on covid survivors of Ahmedabad city.

Method: A cross sectional study was conducted in 25 individuals of each group (group A: history of COVID-19 in second wave, group B: healthy individual- not having history of COVID-19 in second wave) in age group between 40-65. 6-minute walk test was used to check functional capacity and WHO-BREF Questionnaire was used to assess quality of life (QOL). Data was analyzed using SPSS 20.

Result: Mean of 6-MWD was 480.09 ± 57.64 and 503.45 ± 62.68 in group A and group B respectively. Mean of WHO-BREF Questionnaire was 85.09 ± 8.02 and 91.89 ± 4.76 in group A and group B respectively. Mann Whitney U test was used between group A and group B, there is highly statistically significant result was found for QOL, which is ($U=153.50$, $p=0.002$) and not significant result found for 6-MWD, which is ($U=243.00$, $p=0.177$).

Conclusion and clinical implication: There is no change in in functional capacity

of the COVID-19 patients in comparison to normal healthy individuals but there is considerable significant difference in their quality of life.so, we need to more focus on QOL of the survivors.

Keywords: functional capacity, quality of life, COVID-19, 6MWD

INTRODUCTION

Emerging research shows a burden of chronic symptoms and reduced quality of life in coronavirus disease 2019 (COVID-19) survivors¹.

The timeline of the COVID-19 pandemic for second wave in India from January 2021 to the May 2021.

Approximately half of patients recovering from COVID-19 report chronic dyspnea 2–3 months after infection². Dyspnea is an independent predictor of morbidity and mortality in the general population and is associated with reduced functional capacity and adverse health-related quality-of-life³.

This complex and multidimensional symptom can result in a downward spiral of activity avoidance, deconditioning, and ultimately the inability to perform basic activities of daily living⁴.

Patients experience significantly higher levels of post-traumatic stress symptoms and depression due to the disease's novelty and the persistence of the symptoms^{5,6}.

This has been severely affected to the patient's quality of life (QOL). Clinically stable COVID-19 patients can also be presented with depressive symptoms and lower QOL after the recovery⁷.

It is important and timely to ascertain the impact of COVID-19 on those affected to assist healthcare professionals and government agencies in providing them with better support in advance. QOL is a widely used indicator for assessing and evaluating one's health and wellbeing.

The WHOQOL-BREF is being developed as a short version of the WHOQOL-100 for use in situations where time is restricted; where respondent burden must be minimized, and where facet-level detail is unnecessary.

So, purpose of this study was to compare functional capacity and QOL between survivors of second wave of COVID-19 and healthy individual.

MATERIALS & METHODS

Study Design: Observational study

Study Setting: Ahmedabad

Participants: COVID-19 second wave survivor

Sample Size: 50

Duration of study: One month

INCLUSION CRITERIA

- Gender: male and female
- Age: 40-65 years
- Subjects who are fit to perform 6-MWT.
- Subjects willing to participate.
- Subjects who are able to follow the commands
- Subjects having history of COVID-19 in second wave

EXCLUSION CRITERIA

- Severe Cardio respiratory disorder
- Neurological conditions
- Any fracture or musculoskeletal disorder which may hamper 6-MWT.
- Subjects who are performing exercise daily

METHOD

Data was collected after 1.5 years of 2nd wave of COVID-19.

Subjects were divided into 2 different groups:

A: COVID-19 survivors

B: healthy individuals

Subjects falling in inclusion criteria were included in study and asked to perform 6-MWD test according to ATS guideline⁸.

And to fill WHO-BREF Questionnaire. World Health Organization's Quality of Life BREF questionnaire (WHO QOL-BREF) is a cross-culturally comparable quality of life measure. A self-report questionnaire that contains four domains of quality of life (QOL): Physical health (7 items), psychological health (6 items), social relationships (3 items), and environment (8 items). Two other items measure overall QOL and general health. Items are rated on a 5-point Likert scale, and each raw domain score is then transformed to a scale ranging from 0 to 100 (in order to make domain scores comparable with the scores used in the WHOQOL-100), with a higher score indicating a higher quality of life⁹.

STATISTICAL ANALYSIS

Statistical analysis was done using SPSS version 20. Data was checked for normal distribution using Shapiro-Wilk test. As data was normally not distributed, data analysis was performed using the Mann whitney U-test for comparison between 6-MWD and QOL.

P<0.05 was considered as statistically significant.

RESULT

The data was analyzed in 50 participants in this study.

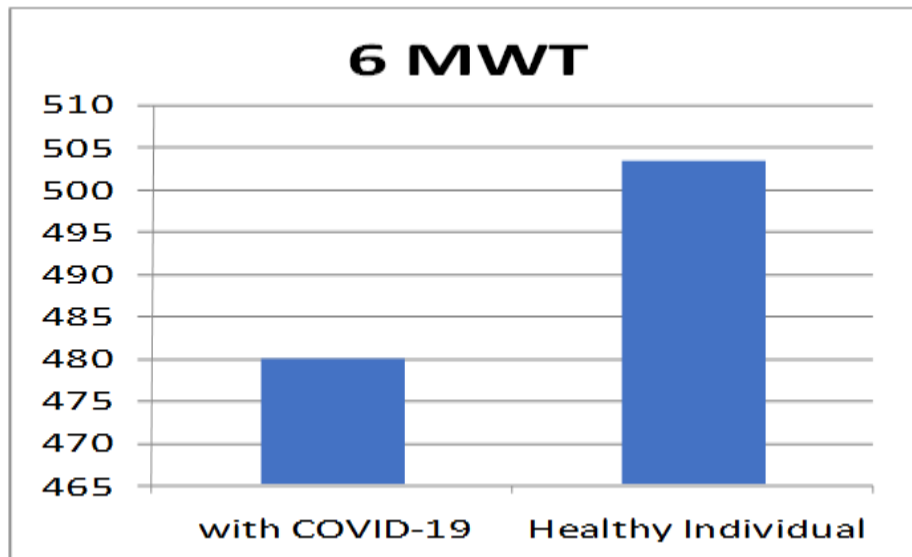
Table 1 shows mean value of QOL and 6-MWD of both the groups.

OUTCOME MEASURE	Group A	Group B
6-MWD	480.09±57.64	503.45±62.68
QOL	85.09±8.02	91.89±4.76

Table 2 shows there is significant difference in QOL.

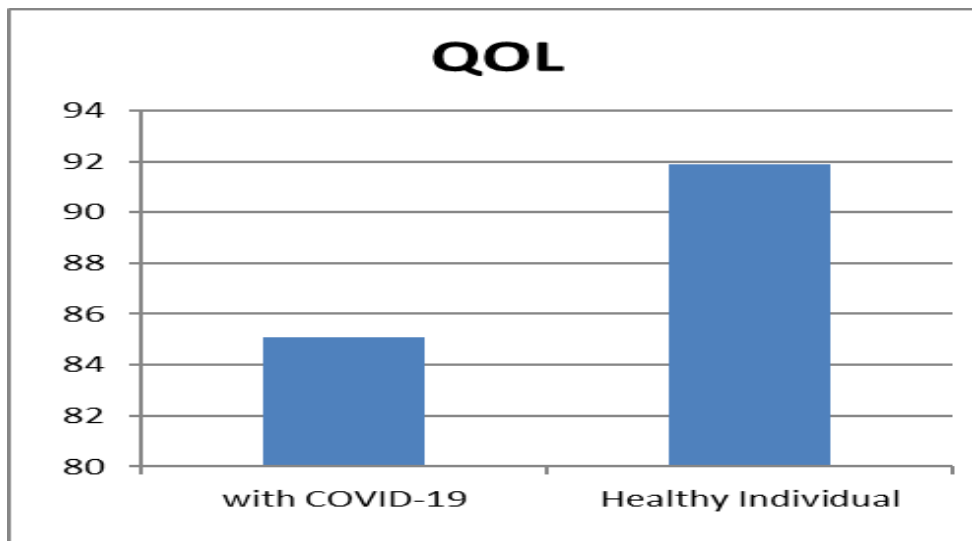
OUTCOME MEASURE	U- value	p- value
6-MWD	243	0.177
QOL	153.50	0.002

Graph 1 shows the difference of 6 MWD between both the groups.



GRAPH 1

Graph 2 shows the difference of QOL between both the groups.



GRAPH 2

DISCUSSION

This study examines comparison of QOL and 6-MWD between COVID-19 survivors and healthy individuals. And it is observed that there is significant difference in QOL in group A compared to group B and reduced functional capacity in group A than group B, but it is statistically not significant.

Sara J. Abdallah et al (2020) did a study on Symptoms, Pulmonary Function, and Functional Capacity Four Months after COVID-19 and concluded that mild

impairments in lung volumes and gas exchange and a diminished functional capacity 3–4 months after discharge from hospital with SARS-CoV-2 infection¹⁰

Fabio Anastasio et al (2021) did a study on Medium-term impact of COVID-19 on pulmonary function, functional capacity and quality of life and concluded that Patients with severe lung involvement during SARS-CoV-2 infection showed impaired pulmonary function test parameters and

6MWT, SpO₂ values 4 months after the acute illness. Clinical and instrumental long-term checks on these patients are advisable, enabling a respiratory rehabilitation course aimed at respiratory recovery¹¹.

Evaluating health-related quality of life, a reduction in physical health was found; however, normal mental health was reported despite the long period of isolation and extreme uncertainty during COVID-19, which could have created psychological and mood disturbances¹¹ which could be reason for affected QOL.

CONCLUSION

This study shows that after COVID-19, there is reduction in QOL of person but not much difference is found in the functional capacity of the patient.

Clinical implication

Physiotherapy treatment of COVID-19 survivors should be focused on improving functional capacity and QOL, with other treatment strategies.

Limitation

Limitation of this study is that we did not quantify the severity of COVID-19 infection, we did not have any information on its treatment like was in home isolation or ICU stay. We can't predict 6MWD prior to COVID-19. Patient might have COVID-19 in 1st wave which was not registered.

Future recommendation

Future studies are recommended on large sample size with more emphasis on symptoms of COVID-19 to extrapolate these findings from a single center to other ethnicities.

Declaration by Authors

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Conflict of Interest: The authors declare no conflict of interest.

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