



## Assessment of quality of life in covid-19 patients post-recovery- an observational analytical study

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### Abstract

The novel coronavirus has become rapidly widespread, resulting in an epidemic throughout China followed by a pandemic, an increasing number of cases in various countries throughout the world. During the Post COVID-19 period, the quality of life of several people has been impacted to varying extents. The physical health of the patients has shown a significant decline after getting recovered from COVID-19. We have done a community survey and have assessed the physical health of 400 subjects and have observed that there is a limitation in the physical activities of the subjects

*Keywords:* Quality of life, COVID-19, Physical health, Limitations of physical activities, Physical component system, Post recovery.

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### Introduction

Corona Virus disease (COVID-19) is an infectious disease caused by the SARS –COV-2 virus a member of beta corona virus genus. Most people infected with the virus will experience mild to moderate respiratory illness and recover without requiring special treatment. However some will become seriously ill and require medical attention [1].

Older people and those with underlying medical conditions like cardiovascular disease , diabetes , chronic respiratory disease are more likely to develop serious illness .The first known infections from SARSCOV-2 were discovered in Wuhan, China [2].

- The original source of transmission to humans remains unclear. Corona virus is travelled through the cells by binding to the angiotensin converting enzyme 2

receptors which are mainly located in alveoli, heart, kidney and cleavage by serine protease TMPRSS2 to allow fusion with heart membrane [3].

- COVID infection is diagnosed by RTPCR, Antigen Detection test, CT scan, CTPA and serologic testing. Patients with COVID- 19 develop symptoms such as fever, cold, tiredness, loss of taste or smell, sore throat, headache, chest pain, shortness of breath.
- On average it takes 5-6 days from when someone is infected with virus for symptoms to show however it can take upto 14 days. COVID-19 infection is managed by convalescent plasma therapy, steroids, anticoagulants, Interferon, thrombolytic, Anti-viral and many more drugs.
- Patients may develop many co morbid conditions after infected with COVID– 19. These conditions are developed due to decreased resistance of immune system. The quality life of many people is also affected due to COVID – 19 infections.

### Symptoms of Covid-19 [4]

COVID-19 affects people in varied ways. Most infected people shall develop mild to moderate illness and recover without hospitalization.

Most common symptoms:

- Fever
- Cough
- Tiredness
- Loss of taste or smell

**Less common symptoms**

- Sore throat
- Headache
- Aches and pains

**Serious symptoms**

- Difficulty in breathing
- Chest pain

**Causes of the New Coronavirus [5]**

Researchers aren't sure what caused the virus, there is more than one type of coronaviruses. They are common in people and in animals including bats, camels, cats, and cattle.

- SARS- CoV-2, The Virus That causes COVID-19, Is Similar to MERS and SARS. They All Came From Bats

**Coronaviruss Risk Factors**

- Anyone can get COVID-19, and most infections are mild.
- The older the patient, the higher risk of severe illness.

**You Can Also Have a Chance of Serious Illness if You Have One of These Health Conditions [6]**

- Chronic kidney disease
- Chronic obstructive pulmonary disease
- A weakened immune system because of an organ transplant
- Obesity
- Serious heart conditions such as heart failure or coronary artery disease
- Sickle cell disease
- Type 2 diabetes

**Conditions That Could Lead To Severe Covid-19 Illness Include [7]**

- Moderate to severe asthma
- Diseases that affect your blood vessels and blood flow to your brain
- Cystic fibrosis
- High blood pressure
- Dementia
- Liver disease
- Pregnancy
- Damaged or scarred lung tissue (pulmonary fibrosis)
- Smoking
- Type 1 diabetes
- Depression
- Anxiety
- Schizophrenia

**Coronavirus Transmission [7, 8]**

**How do the coronaviruses spread?**

- SARS-COV-2, the virus, mainly spreads from person to person. In general, people release respiratory fluids through quiet breathing, speaking, singing, exercise, coughing and sneezing during exhalation in the form of droplets across a spectrum of sizes which carry virus and transmit the infection.
- The largest droplets settle out of the air rapidly, within seconds to minutes whereas the smallest or the very fine droplets, and the aerosol particles formed when these fine droplets rapidly dry, are small enough that they can remain suspended in the air for minutes to hours.

**Diagnosis [9, 10]**

- RT-PCR is a diagnostic test that uses nasal swab, tracheal aspirate or bronchoalveolar lavage (BAL) specimens.
- The primary method for diagnosis is the collection of upper respiratory samples via nasopharyngeal and oropharyngeal swabs.
- The Bronchoscopy method can be considered only for intubated patients when upper respiratory samples are negative and the other diagnostic tools would significantly change the clinical management.
- Also, it is considered when only clinical and safety criteria have been met and also the diagnosis is uncertain.

**Aim and Objectives**

**Aim**

To assess the quality of life in COVID-19 patients post-recovery.

**Objectives**

- To assess the physical component system of the patients.
- To increase awareness regarding the physical component system.

**Methodology**

- The study is going to be conducted as a community-based survey structured questionnaire by using MOS 36 SHORT FORM (SF-36).
- It shall be prepared and to be given to COVID -19 recovered patients after obtaining in the informed consent form (ICF).
- Data will be collected through google form or through direct patient interaction and will be statistically analyzed.

### Study Design

A prospective observational study

### Study Population

400 Patients

### Study Duration

8 months [November 2021 to June 2022].

### Inclusion Criteria

- Patients infected with COVID-19
- Patients who are either hospitalized or non-hospitalized
- Patients who are willing to participate in the study

### Exclusion Criteria

- Patients who are not infected with COVID - 19
- Children below the age of 5 years
- Patients who are not willing to participate in study.

### Study Plan

#### Phase 1

- Obtaining consent from hospital authorities
- Literature survey
- Designing of data collection form
- Data collection

#### Phase 2

- Assessment of PCS
- To identify the number of PCS in patients

### Anticipated Benefits of Study

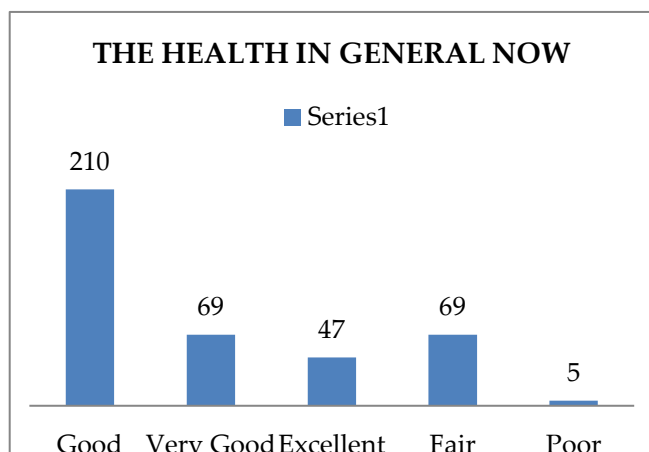
- Patient knowledge about COVID – 19 Disease
- Patient awareness about COVID – 19 Disease

### Statistical Analysis

- Data was entered into the Microsoft excel worksheet.
- The results were depicted in the form of percentages, pie charts and graphs.

## Results

### General Health



A. the 210 individuals reported their health in general as “Good” as per the survey conducted

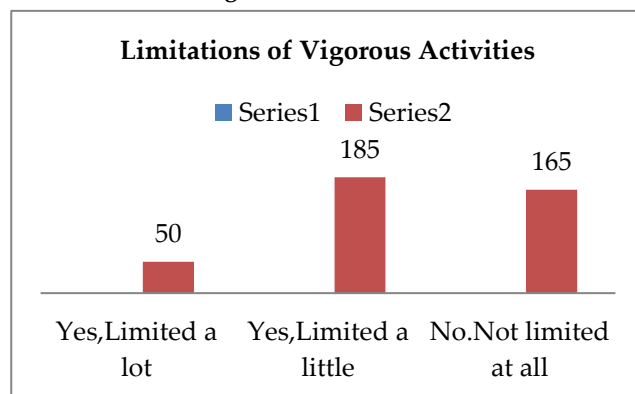
B. the 69 individuals reported their health in general as “Very Good” as per the survey taken

C. the 47 individuals reported their health in general as “Excellent” as per the survey conducted

D. the 69 individuals reported their health in general as “Fair” according to the survey performed

E. the 5 number individuals who reported their health in general as “Poor” according to the survey performed.

### 2. Limitations of Vigorous Activities

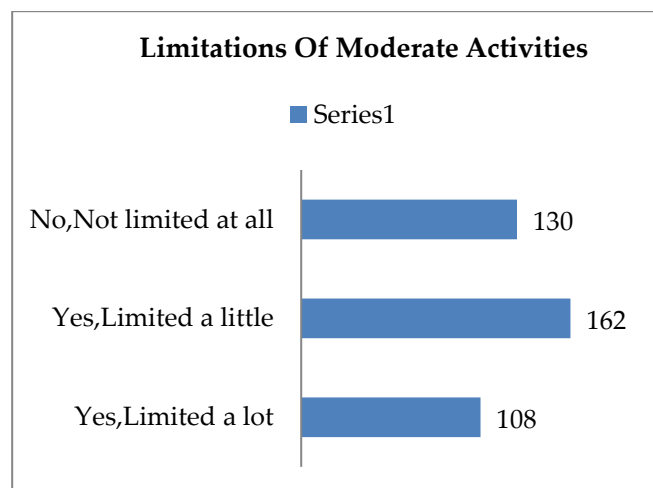


A. the 50 number of individuals “limited a lot” in vigorous activities such as running, lifting heavy objects etc.

B. the 185 number of individuals “limited a little” in vigorous activities such as running, lifting heavy objects, etc.

C. the 165 number of individuals “Not limited” in vigorous activities such as running lifting heavy objects etc.

### 3. Limitations OFN Moderate Activities

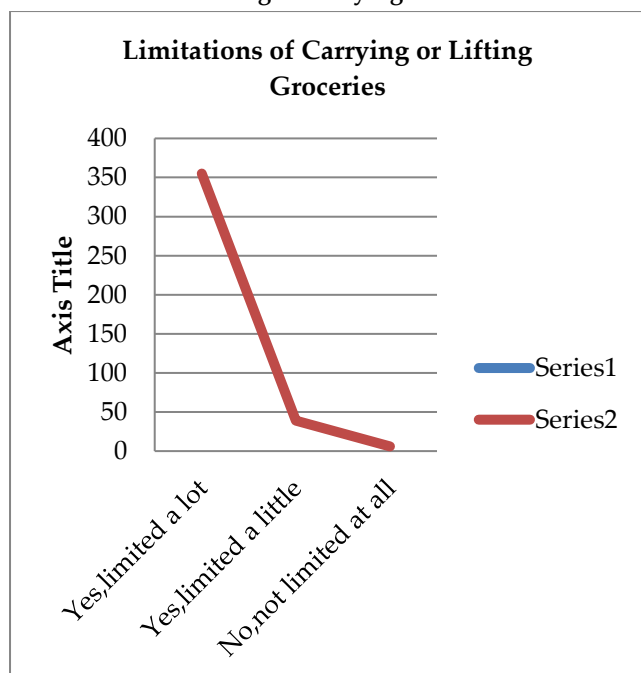


A. the 108 number of individuals “Limited a Lot” in moderate activities such as moving table, pushing a vacuum cleaner, etc.

B. the 162 individuals were “Limited a little” in moderate activities such as moving a table, pushing a vacuum cleaner, etc.

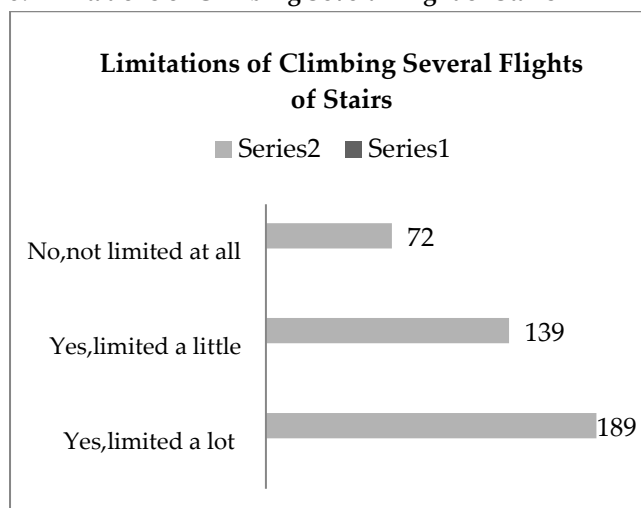
C. the 130 number of individuals “Not limited at all” in moderate activities such as moving table, pushing vacuum cleaner etc.

#### 4. Limitations of Lifting or Carrying Groceries



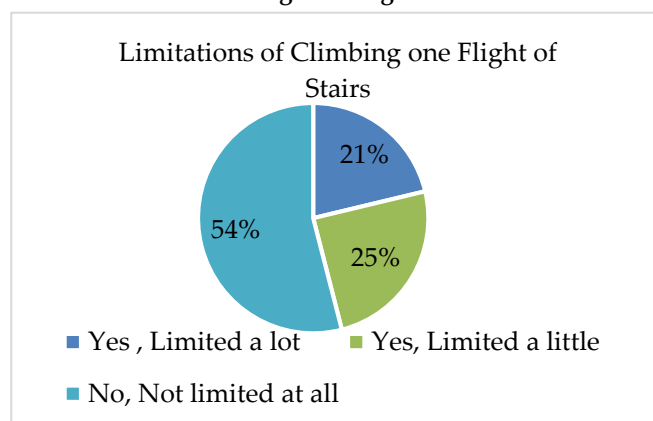
- A. the 355 number of individuals “**Limited a lot**” in lifting or carrying groceries as per the survey taken.
- B. The 39 number of individuals “**Limited a little**” in lifting or carrying groceries as per survey conducted.
- C. the 6 number of individuals “**Not limited at all**” in lifting or carrying groceries as per survey taken

#### 5. Limitations of Climbing Several Flight of Stairs



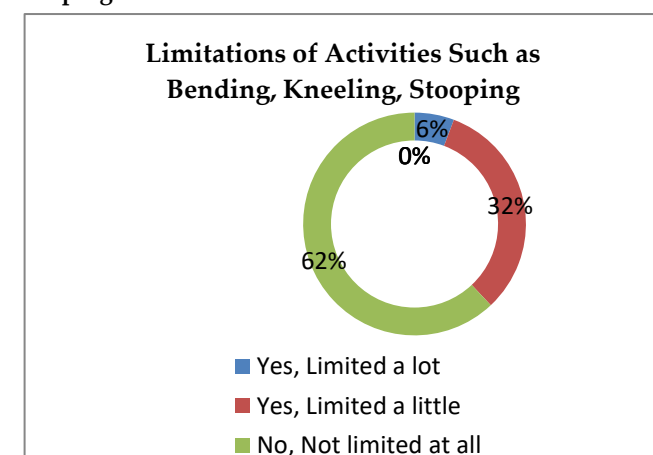
- A. The number of individuals “**Limited a lot**” in climbing several flights of stairs after post recovery of COVID-19 which was reported in the survey conducted
- B. The 139 number of individuals “**Limited a little**” in climbing several flights of stairs after post recovery of COVID-19 which was reported in survey conducted
- C. The 72 number of individuals “**Not limited at all**” in climbing several flights of stairs after post recovery of COVID-19 which was reported in the survey conducted

#### 6. Limitation of Climbing One Flight of Stairs



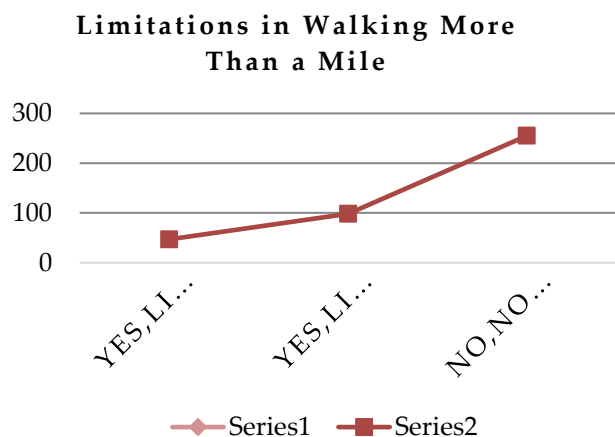
- A. The number of individuals “**Limited a lot**” in climbing one flight of stairs after post recovery of COVID-19 infection
- B. The 99 number of individuals “ **Limited a little**” in climbing one flight of stairs after post recovery of COVID-19 infection
- C. The 216 number of individuals “ **Not limited at all**” in climbing one flight of stairs after post recovery of COVID-19 infection

#### 7. Limitations of Activities Such As Bending, Kneeling, Stooping



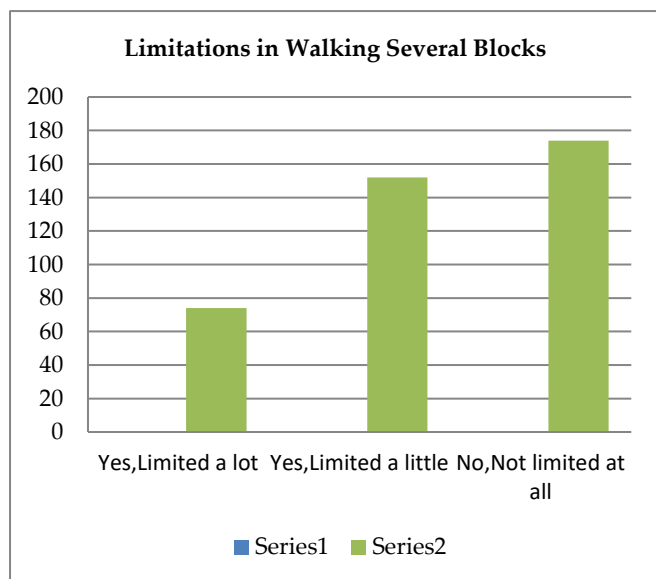
- A. the 23 number of individuals “**Limited a lot**” in activities such as bending, kneeling, and stooping after post recovery of COVID-19 infection.
- B. the 129 number of individuals “**Limited a Little**” in activities such as bending, kneeling, stooping after post recovery of COVID-19 infection
- C. the 248 number of individuals “**Not limited at all**” in activities such as bending, kneeling, stooping after post recovery of COVID-19 infection

### 8. Limitations in Walking More Than a Mile



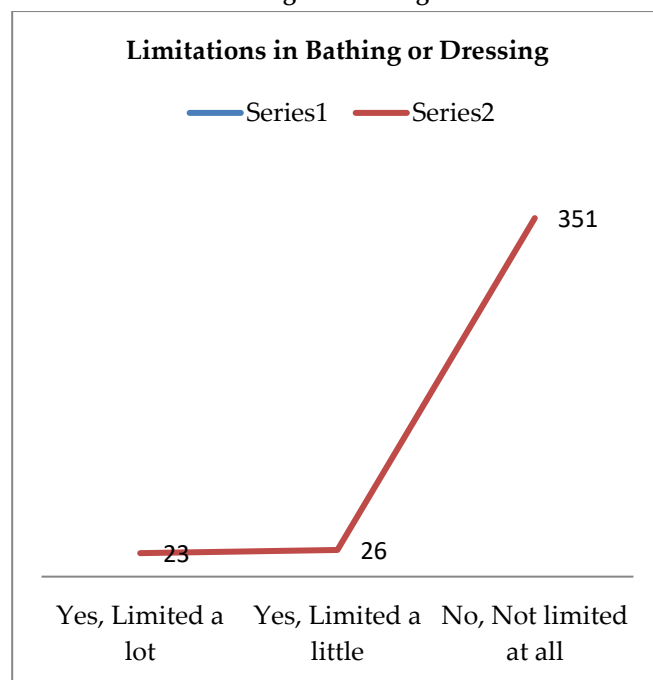
- A. The number of individuals “**Limited a lot**” in walking more than a mile after post recovery of COVID-19 infection
- B. The 98 number of individuals “**Limited a little**” in walking more than a mile after post recovery of COVID-19
- C. The 255 number of individuals “**Not limited at all**” in walking more than a mile after post recovery of COVID-19

### 9. Limitations in Walking Several Blocks



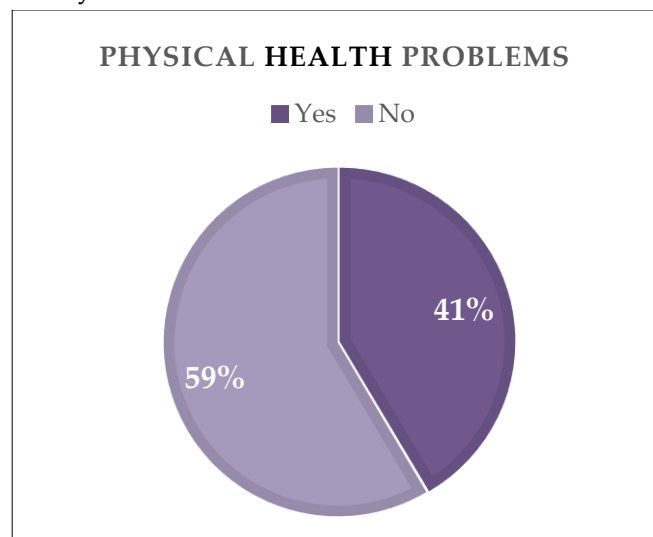
- A. the 74 number of individuals “**Limited a lot**” in walking several blocks after post recovery from COVID-19 infection
- B. the 152 number of individuals “**Limited a little**” in walking several blocks after post recovery from COVID-19 infection
- C. the 174 number of individuals “**Not limited at all**” in walking several blocks after post recovery from COVID-19 infection

### 10. Limitations in Bathing or Dressing



- A. The 23 number of individuals among 400 “**Limited a lot**” in bathing or dressing after post recovery from COVID-19 infection
- B. The 26 number of individuals among 400 “**Limited a little**” in bathing or dressing after post recovery from COVID-19 infection
- C. The 351 number of individuals among 400 “**Not limited at all**” in bathing or dressing after post recovery from COVID-19 infection

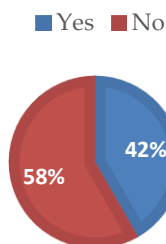
### 11. Physical Health Problems



- A. The 166 number of individuals reported “**YES**” to cut down the amount of time spent on their work as a result of physical health degradation due to COVID-19 infection.
- B. The 234 number of individuals reported “**NO**” to cut down the amount of time spent on their work.

## 12. Limitations in Kind of Work or Activities

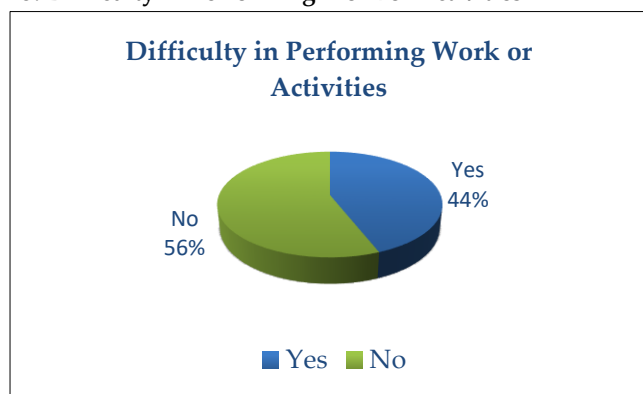
### Limiting The Kind of Work or Activities



A. The number of individuals among 400 reported "YES" in limiting the kind of work or other activities after post recovery from COVID -19 infection

B. the 233 number of individuals among 400 reported "NO" in limiting the kind of work or other activities after post recovery from COVID-19 infection

## 13. Difficulty in Performing Work or Activities



A. The 176 number of individuals reported "YES" for having difficulty in performing the work or other activities [taking more effort]

B. The 224 number of individuals reported "NO" for having difficulty in performing the work or other activities [taking more effort]

## Discussion

This study was similar with the Health related quality of life COVID-19 patients after discharge: A multi center follow up study conducted by Guangbo et.al shows that COVID-19 patients was impaired and did not come back to normal even after three months after discharge.

It also show poor physical symptoms after discharge. In our project, there is a decline in the physical activities such as running, lifting, moving table, pushing vacuum cleaner, etc but there is a gradual increase in the limitation of carrying and lifting the groceries.

Assessment of the activities of daily living in patients post COVID-19: A systematic review conducted by Catalina Pizarro et.al revealed that there is a decline in the ADL performances after COVID-19 infection regardless the

parameters. Here the patients who have been admitted in the ICU, had mechanical ventilation have showed much more decline in the ADL performance.

From our study, the results have shown that the patients who have been admitted at hospital have shown much more decline in the ADL performance than in the patients who have been at home isolation.

Physiological distress and health related quality of life in patients after hospitalization during COVID-19 pandemic: A Single centre observational study conducted by Johan Hendrik Vlake et.al have shown that COVID-19 suspected patients during pandemic frequently suffer from physiological distress and poor health related quality of life after hospital discharge. From our survey, majority of the subjects have reported little decline in the physical distress post COVID-19. Impact of COVID-19 on health related quality of life of patients: A Structured review conducted by A K Narayan Poudel et.al has revealed that there was disproportional impact on subjects by gender, age, severity of illness and study country post COVID-19 infection. From the community survey, the reports have revealed that the younger adults have shown less negative impact whereas the older subjects have shown severe negative impact.

## Conclusion

In our study, we have conducted a community survey for 400 subjects and have done an Analytical, Observational study using SF-36 Form with parameters. Majority of the subjects have reported that their general health is good as per the survey. Activities of daily life performance of majority of the subjects like lifting or carrying groceries, climbing several stairs, walking several blocks has shown a little limitation whereas other activities like walking a single block, climbing one stair, bathing and dressing have shown no limitation at all, From the survey conducted, we have concluded that the majority of the subject had no physical health problems with their work or other regular daily activities as a result of their physical health. So, implementing life style modifications like dietary changes, medication adherence, decreasing stress level, breathing exercises, physical exercises, meditation, increasing immunity can increase the quality of life of the patients and can retain the health condition like Pre-COVID situation.

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## Author Contribution

All authors contributed equally.

## Conflict of Interest

The authors declared no conflict of interest.

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