



PREVALENCE OF CHRONIC FATIGUE SYNDROME AMONG ADULTS COVID-19 SURVIVOR: AN OBSERVATIONAL STUDY

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ABSTRACT

Purpose of the study: Coronavirus disease 2019 (COVID-19) is a viral illness caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). COVID-19 patient experience prolonged convalescence phase and continue to have symptoms for several months after the initial infection. Post viral fatigue is the most common long term health issue facing survivors of COVID-19. So the purpose of the study is to determine the prevalence of fatigue in adult people post mild and moderate COVID-19 cases.

Methodology: A study consists of total 160 subjects with adult COVID-19 survivors. Age group between 25-55 years including male and female. All the subjects included in the study were ones falling according to inclusion criteria. Informed and written consent was taken from all the subjects. Then all subjects were assessed by using modified fatigue impact scale.

Results: Fatigue in adult patients post mild and moderate COVID-19 cases after three to five months from their recovery was prevalent 100% using the MFIS. 31% of patients experienced mild level of fatigue, 31% of patients experienced moderate level of fatigue, 38% of patients experienced severe level of fatigue.

Conclusion: Chronic fatigue syndrome was prevalent among adult patients post COVID-19 with 100% using the MFIS. Continuous monitoring and timely intervention prevent long-term symptoms from being chronic.

Keywords: COVID-19, chronic fatigue syndrome, Fatigue, Modified Fatigue Impact Scale.

INTRODUCTION

Infectious illness epidemics pose a huge threat to global health, wreaking havoc on countries' economy, healthcare systems, and resources. COVID-19, a coronavirus associated with severe acute respiratory syndrome (SARS-CoV-2) (1). The World Health Organization (WHO) declared the coronavirus disease 2019 (COVID-19) on February 11, 2020. (2). Coronavirus Disease 2019 (COVID-19) was initially detected in

Wuhan, China in December 2019 (Huang et al., 2020) and has since spread to more than 200 nations and territories worldwide (World Health Organization, 2020) (3).

Fever, cough, shortness of breath, and myalgia/fatigue are the most prevalent symptoms of COVID-19. Anosmia (loss of smell) and dyspepsia (alteration in taste sense) have been documented in 33–80 percent of COVID-19 patients. SARS-CoV-2 is mostly spread from person to person by intimate contact, respiratory droplets, fomites, and infected surfaces (4).

COVID-19 has an effect on both people's mental and physical health as a result of decreased exercise in their everyday routine (5). Some COVID-19 patients have a lengthy recovery time, with symptoms lasting months after the initial infection (6).

The severity of COVID-19 symptoms (7).

COVID-19 was identified as a positive result in oropharyngeal swab specimens using high throughput sequencing or real-time reverse transcriptase PCR assays. The degree of COVID-19 illness was examined during hospitalisation and divided into four clinical subtypes based on care guidelines: mild, moderate, severe, or severely.

COVID-19 disease varies from asymptomatic or mild symptoms to severe respiratory failure and death. The following symptoms were classified as mild, severe, or critical, according to the research article.

Patients who have suffered from respiratory failure, septic shock, or multiple organ dysfunction or failure are considered serious cases.

Severe case: patients who had shortness of breath, respiratory frequency greater than 30 breaths per minute, blood oxygen saturation greater than 93 percent, pao₂/fio₂ ratio greater than 300, and lung infiltrates greater than 50% within 24-48 hours.

Mild case: The bulk of these coronavirus illness cases (81%) were mild cases. Mid case includes all patients who did not have pneumonia or had mild pneumonia.

Importantly, following SARS coronavirus infection in South East Asia in early 2003, a chronic post-viral syndrome characterised by chronic fatigue, fluctuating nonspecific myalgia, depression, and sleep difficulties was previously observed. SARS's long-term side effects are similar to those of patients suffering from chronic fatigue syndrome (CFS) and fibromyalgia (4).

ME/CFS is a complicated chronic multi-system disorder characterised by a wide range of constitutional and neuropsychological symptoms. It has a general population prevalence of 0.17–0.89 percent and is more common in women (6).

Many other risk variables, including age, pre-existing psychiatric problems, socioeconomic position, and amount of activity, have been inconsistently linked to an increased chance of developing ME/CFS(7). Although the pathophysiology is unknown, many cases of ME/CFS are suspected to be caused by infection (6). Chronic fatigue syndrome, also known as myalgia encephalomyelitis (CFS/ME), is defined by exhaustion that lasts for more than 6 months, as well as symptoms such as muscle and joint pain, sore throat, painful lymph nodes, and cognitive impairments (8).

Fatigue is one of the most common ailments in today's culture (9). ME/CFS is a devastating chronic condition that affects 0.3 to 0.8 percent of the world's population. ME/CFS is characterised by extreme mental and physical exhaustion, sleep disruption, and persistent discomfort (10).

The World Health Organization (WHO) classifies ME/CFS as a neurological disorder with the code G93.3 in the International Classification of Diseases (ICD) (10). ME/CFS is diagnosed using clinical criteria based on a thorough clinical history and physical examination; laboratory testing are performed to rule out other illnesses that might cause fatigue and general malaise (11).

COVID-19 is expected to have a considerable impact on patients' physical, cognitive, mental, and social health, especially those with moderate illness. Fatigue is an often reported COVID-19 symptom (12). The severe and persistent exhaustion in certain post-acute covid-19 patients is consistent with chronic fatigue syndrome, which has been linked to other deadly diseases such as SARS, MERS, and community-acquired pneumonia (12). A prolonged period of weariness following an infection might have a negative impact on

one's quality of life. Covid-19 survivors should be examined on a regular basis for evaluating signs of post-covid19 syndrome (12).

So need of study is to find out prevalence of chronic fatigue syndrome among adult COVID19 survivors. . So the result of study may help the COVID-19 survivors patient to prevent chronic fatigue syndrome.

1. Modified fatigue impact scale

The Multiple Sclerosis Council for Clinical Practice Guidelines created the MFIS. The MFIS is regarded as a multidimensional, all-inclusive instrument for assessing fatigue. The MFIS is a condensed form of the FIS that includes three subscales (physical, cognitive, and psychosocial); it is one of the most extensively used instruments in its field⁽¹³⁾.

Fatigue has an effect on physical, cognitive, and psychosocial functioning. People are asked to rate how frequently they have experienced 21 issues due to fatigue in the last month using a Likert scale (range 0-4): nine questions for physical status (pMFIS), ten items for cognitive condition (cMFIS), and two items for psychosocial function (psMFIS)⁽¹³⁾.

The Modified Fatigue Impact Scale has been utilised in various clinical trials (Gillson G. et al., 2002 ; NASA/MS Cooling Study Group, 2003 ; Rammohan K.W. et al., 2002)⁽¹⁴⁾.

Modified fatigue impact scale questionnaires have a Cronbach's alpha coefficient of 0.81 and 0.80, respectively suggesting acceptable internal consistency⁽¹³⁾

METHODOLOGY

A. Source of data: Parul sevashram hospital, , limda, ta – waghodia, dist- Vadodara.

B. Method of collection of data:

- Study design- observational cross-sectional study
- Sampling method – convenient sampling
- Sample size – 160 subject, sample size was calculated using the prevalence percentage of previous study which was 0.89 % with confidence interval of 95% and margin of error 5%.

C. Inclusion criteria:

- Age 18-60 years.
- Both gender and female.
- COVID-19 survivor.

D. Exclusion criteria:

- Subjects not willing to participant.
- Subjects with sever neurological symptoms.
- Subjects with any diagnosed psychiatric illness.
- Subjects with any residual deformity in COVID -19 stage.
- Subjects with musculoskeletal or condition in pre COVID-19 stage.

E. Material :

- Assessment form
- Pen
- Consent form
- Pencil
- Mobile
- MFIS Scale.

F. Outcome measures:

- Modified fatigue impact scale (MFIS).

G. Ethical clearance :

As the study includes human subjects ethical clearance was obtained from parul university institutional ethical committee for human research (PU-IECHR). A written consent was also taken from the subjects participating in the study.

H. PROCEDURE :

Ethical clearance was obtained from the institutional ethical committee. The subject were taken from parul sevashram hospital. The young adults who fulfilled the inclusion criteria were included in the study. An informed consent form was taken from all the subjects that took part in the study. General demographic data like name, age, gender, occupation, were recorded from each selected subject. The subject were firstly provided with an informed consent from following patient information sheet and then were assessed by outcome measures.

The outcome measure were three questionnaires in English which were self –administered, i.e answered by the patient by his own. Fatigue was evaluated by modified fatigue impact scale. MFIS total score is between 0 and 84. The scoring ranges are as follows for each subscale: physical, 0 to36; cognitive, 0 to 40; and psychosocial, 0 to 8.

In comparison to their baseline before COVID-19, Participants were asked to answer these questions with specific reference to the previous month. Subjects were asked to answer each statement of the MFIS questionnaire and choose the number from 1 to 4. The scoring processes for each item were answered by a five-step likert scale format from zero to 4 where zero means never, 1 means rarely, 2 means sometimes, 3 means often and 4 means almost always.

RESULTS

Subjects characteristics 160 subjects (70 (44%) females and 90 (56%) males) with Covid-19 Covid-19 survivors participated in this study. Their mean \pm SD age of the study group was 34.03 ± 4.9 years respectively.

Prevalence of fatigue: The prevalence of chronic fatigue syndrome in subjects with Covid-19 survivors of the study group was 100 % with 95% CI of 30.88-33.66%. The mean values of physical, cognitive, psychosocial domains and total score of MFIS of the study group is presented in table 1. The scores of MFIS revealed that. 31% Of patients experienced mild level of fatigue, 31% of patients experienced moderate level of fatigue, 38% of patients experienced sever level of fatigue.

Table -1: Distribution of participants according to age

| AGE | NO.OF PARTICIPANTS |
|-------|--------------------|
| 25-35 | 58 |
| 36-45 | 39 |
| 46-55 | 63 |

Graph - 2: Distribution of participants according to age

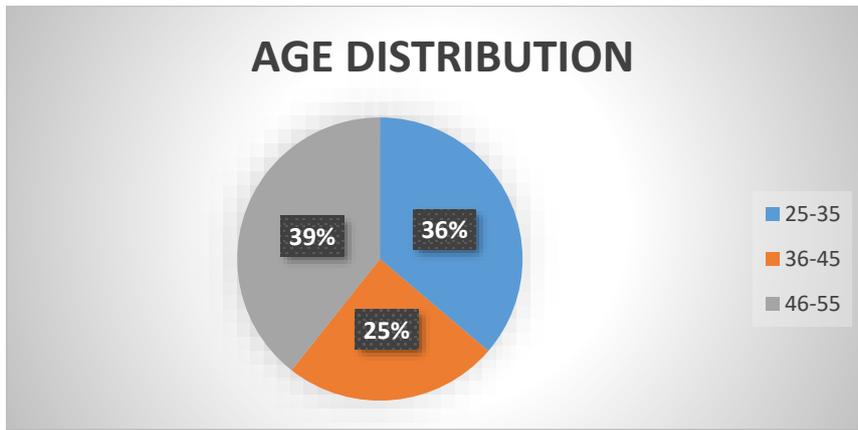


Table -2: Distribution of participants according to gender

| GANDER | NO.OF PARTICIPATION |
|--------|---------------------|
| MALE | 90 |
| FEMALE | 70 |

Graph - 2: Gender distribution of the participants

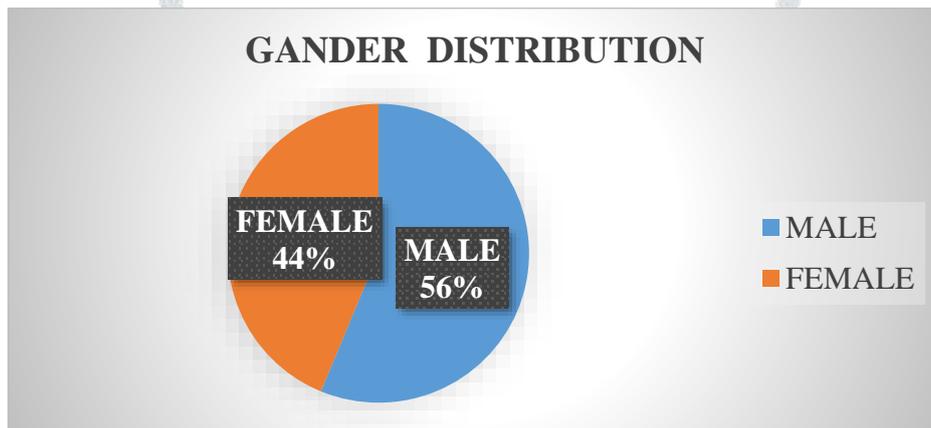
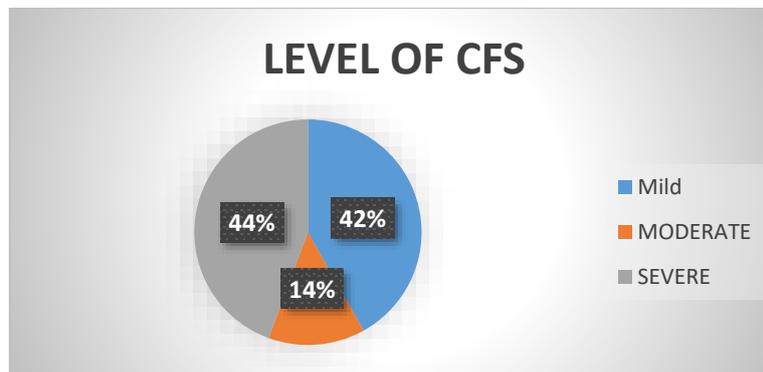


Table -3: Distribution of participants according to level of chronic fatigue syndrome

| CFS Level | NO |
|-----------|----|
| Mild | 67 |
| MODERATE | 22 |
| SEVERE | 71 |

Graph - 3: Distribution of participants according to level of chronic fatigue syndrome

DISCUSSION

COVID-19 has affected many people throughout the world. In light of people health concerns about the COVID-19 infection's adverse effects, and according to the available evidence for SARS-COV-1 and H1N1 fatigue-related symptoms for (Islam et al.).⁽⁴¹⁾ The purpose of present study was to find out prevalence of chronic fatigue syndrome among adult COVID19 survivors and its correlation with severity of COVID-19 and pre COVID-19 physical activity.

Total 160 participants falling in age group of 25-55 years were selected according to inclusion criteria. Modified fatigue impact scale (MFIS) was used to get the score of physical subscale, cognitive subscale, psychosocial subscale and total score.

In this study we concerned with examination of the prevalence chronic fatigue syndrome among post covid-19 in post mild and moderate cases by adult people with age between 25 and 55 years. This fatigue is characterized as reduction in physical and cognitive output as a result of changes in central, psychological factors caused by COVID-19 disease.

This was to attract attention to these adult people who need early monitoring and timely intervention to prevent these long-term symptoms from being chronic. Our results proved that the fatigue is prevalent among adult people post mild, moderate and sever covid-19 cases after following recovery from acute covid-19 by using the MFIS. This study found that 100% of patients experienced various fatigue levels, 31% Of patients experienced mild level of fatigue, 31% of patients experienced moderate level of fatigue, 38% of patients experienced sever level of fatigue between 25-55 years of age groups.⁽⁴⁰⁾

The results of the current study were in line with Goërtz et al., 2020 who reported that fatigue is still high in hospitalized and non-hospitalized patients including mild cases after three months from the onset of symptoms of covid-19. Kamal et al, Carfi et al, Hapin et al, Townsend et al. and Garrigueset al. also reported fatigue post covid-19 during various periods 20 days after recovery-60 day after the onset of covid-19 symptoms-(4-8) weeks post recovery- a median of 10 weeks following the onset of symptoms with COVID-19 and 110 days after discharge respectively.⁽⁴⁰⁾

CONCLUSION

According to this study, that chronic fatigue syndrome was high prevalent among adult patients covid-19 survivors. We recommend that all patients' recovery from acute symptoms of covid-19 should be followed up regularly. Early intervention for post viral fatigue and other manifestation is very important to prevent more serious complication

LIMITATION

- he study was limited to a survey cross sectional study in which we only had a small time frame.
- The study is short, due to constrained time and small sample from large population is taken due to which the accuracy rate is also reduced.

FURTHER RECOMMENDATION

- Larger sample size and multiple clinical settings may increase the accuracy rate of the study.
- The study design can be taken as longitudinal or retrospective as they have an extended time period and the data can also be collected from the past.
- Other outcome measures can also be taken for assessing the chronic fatigue syndrome prevalence, physical level.

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