

A Cross-Sectional Survey on Proportion of Post COVID-19 Health Problems among Health Care Workers in a Tertiary Care Hospital in Thiruvananthapuram District

Archana S Nair¹, Sreelakshmy U R²

¹Senior Lecturer, Medical Surgical Nursing Department, Josco College of Nursing, Edappon, Alappuzha, Kerala, India
Corresponding Author Email: [archanasnair13\[at\]gmail.com](mailto:archanasnair13[at]gmail.com)

²Associate Professor Department of Medical Surgical Nursing Sree Gokulam Nursing College Thiruvananthapuram, Kerala, India

Abstract: COVID-19 is an infectious disease caused by recently discovered coronavirus. This new virus and disease were unknown before the outbreak began in -*Wuhan, China, in December 2019. Post-coronavirus disease syndrome includes persistence of symptoms beyond viral clearance and fresh development of symptoms or exaggeration of chronic diseases within a month after initial clinical and virological cure of the disease with a viral aetiology. The present study was aimed to identify the proportion of post covid 19 health problems among health care workers in a tertiary care hospital in Thiruvananthapuram. The objectives of the study were to identify the proportion of post covid 19 health problems among health care workers and find out the factors associated with post covid 19 health related problems and selected socio personal and clinical variables. **Methodology:** The researcher adopted quantitative research approach. Purposive sampling technique was used to collect data from a total of 70 samples. Data was collected using Structured questionnaire and Depression Anxiety Stress scale. **Results:** Based on the socio personal and clinical variables 51.5% of health care workers were below 30 years of age and 84.3% were female health care workers. Majority of (47.1%) health care workers were graduates. Based on the comorbidities 75.1% of the health care workers had no comorbidities and 11.4% have thyroid disorders. Majority of health care workers (95.7) % had no ill habits. Only 4.3% were alcoholic and 71.4% of health care workers had no habit of doing physical exercise. 72.5% of health care workers had fever during acute covid 19 infection period. 38.57% of health care workers had shortness of breath as respiratory problems in the post covid 19 period. Based on the cardiovascular problems in the post covid 19 period, 21.43% of health care workers had extreme shortness of breath with exertion. 8.57% of health care workers had diarrhoea and 2.9% of health care workers had frequent urination and oedema in the post covid 19 period. 22.85% of health care workers had headache. 47.14% had fatigue in the post covid 19 period. Based on the psychological problems 15.7% of health care workers had mild stress. 8.6% of health care workers had severe anxiety and majority of subjects (81.4%) had no depression. In the post covid 19 physical problems, there was statistically significant association between working hours (chi-square value= 0.011, $p < 0.05$) with fatigue, marital status with extreme shortness of breath with exertion (chi-square value= 0.005, $p < 0.05$), type of family with diarrhoea (chi-square value= 0.016, $p < 0.05$), gender with headache (chi-square value= 0.041, $p < 0.05$) and educational status (chi-square value= 0.001, $p < 0.05$). Gender with hair loss (chi-square value= 0.002, $p < 0.05$) and gender with marital status (chi-square value= 0.008, $p < 0.05$). In post covid 19 psychological problems there was statistically significant association between working days with depression (chi-square value 0.050, $p < 0.05$), educational status with anxiety (chi-square value= 0.045, $p < 0.05$). There was statistically no significant association between post covid 19 physical problems with socio personal variables and clinical variables. The study findings concluded that post covid 19 health problems like fatigue and hair loss as physical problems and stress and anxiety as psychological problems among health care workers.

Keywords: post covid 19 problems; health care workers

1. Introduction

Background of the problem

In late 2019, an outbreak of by the local health authority on December 31, 2019. December 2019 and involved about 66% of the staff there. However, in the following month (January), in a seafood whole sale wet market, in Wuhan, China. The initial outbreak was reported in the market in the market was shut down on January 1, 2020. Thousands of people in China, including many provisions and cities were attacked by the rampant spreading of the disease.¹

The pathogens of the outbreak were later identified as a novel Coronavirus and was initially named 2019-nCoV; later, it was renamed as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), and the disease it causes is now referred to as Coronavirus Disease-2019 (COVID-19) by the WHO.²

The main mode of transmission of 2019-nCoV is human to

human. Asymptomatic carriers of the virus are at major risk of being superinfectors with this disease, as all those infected may not develop the disease. This is a concern that has been raised by nations globally. For COVID-19, there is no specific treatment available. The primary focus of the interventional studies for COVID-19 has been on antimalarial drugs and antiviral agents, while over 200 studies deal with the use of different forms of oxygen therapy. Most trials focus on improvement of clinical status, reduction of viral load, time to improvement, and reduction of mortality rates.²

Corona virus is the large family of virus group that known to cause illness ranging from the common cold to very severe disease such as severe acute respiratory distress syndrome.³

The etiologic agent of COVID-19 is the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The coronavirus virion is an enveloped particle containing the spike (S), membrane (M), and envelope (E) proteins. In

Volume 15 Issue 9, September 2026

Fully Refereed | Open Access | Double Blind Peer Reviewed Journal

www.ijssr.net

addition, some strains of corona viruses, express a hemagglutinin protein (HE) that is also incorporated in the virion.⁴

The clinical spectrum of COVID-19 varies from asymptomatic or pauci symptomatic forms to clinical illness characterized by acute respiratory failure requiring mechanical ventilation, septic shock, and multiple organ failure. It is estimated that 17.9% to 33.3% of infected patients will remain asymptomatic. Conversely, the vast majority of symptomatic patients commonly present with fever, cough, and shortness of breath and less commonly with a sore throat, anosmia, dysgeusia, anorexia, nausea, malaise, myalgias, and diarrhea.⁵

As of February 2021, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic has resulted in more than 110 million infected cases and almost 2.5 million lives lost, at significant costs to healthcare systems and societies worldwide. While initial public health responses focused on reducing the acute burden of coronavirus disease 2019 (COVID-19), a growing body of evidence indicates that SARS-CoV-2 infection can also result in longer-term physical and mental health consequences, which are of increasing concern for healthcare systems. Such consequences lasting for longer than three months after infection are currently referred to as “post-COVID-19 syndrome” or “Long Covid.”⁶

Healthcare workers (HCWs), as front liners battling against the pandemic, are the most at risk of acquiring the infection as they are directly or indirectly exposed to infectious material. The COVID-19 pandemic has placed immense pressure on health systems and HCWs. HCWs face an ever-present risk of acquiring or spreading the virus to their patients. A recently published rapid review identified lack of and/or inadequate personal protective equipment (PPE), exposure to infected patients, work overload, poor infection control and pre-existing medical conditions as important risk factors for nosocomial COVID-19 infection among HCWs.⁷ The COVID-19 pandemic shook the entire world in January 2020 last year and is still posing a major threat to the entire humanity. A lot of studies have been conducted studying the diagnosis and management of the disease caused by this highly contagious virus, but less is known about the Post COVID-19 sequelae. There is very limited evidence about the management of COVID-19 after the first three weeks of illness. About 10% of the patients experience prolonged illness after COVID-19. Treatment is mainly focused on reassurance, self-care, and symptomatic control. There are currently no FDA-approved treatments specifically for this condition. Clinicians and researchers have focused on the acute phase of COVID-19, but continued monitoring after discharge for long-lasting effects is also needed.⁸

Need and Significance of the Study

In early December 2019, an outbreak of coronavirus disease 2019 (COVID-19), caused by a novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), occurred in Wuhan City, Hubei Province, China. On January 30, 2020 the World Health Organization declared the outbreak as a public Health Emergency of International Concern. As of February 14, 2020, 49,053 laboratory-confirmed and 1,381 deaths have

been reported globally.⁹

The 2019 novel-coronavirus (COVID-19) has affected 181 countries with approximately 1197405 confirmed cases by 5th April 2020. To date, the statistics of COVID-19 reported cases shows that more than 80% of infected are mild cases of disease, around 14% of infected have severe complications, and about 5% are categorized as critical disease victims.¹⁰

Report from world health organization as 26th July 2022, there have been 568,773,510 confirmed cases of covid 19, including 6,381,643 deaths. India Reported 43,938,764 confirmed cases of covid 19, including 526,167 deaths as on July 27, 2022. The first case of covid 19 pandemic in Kerala was confirmed in Thrissur on 30th January 2022. As of July 24, 2022, there were 6710792 confirmed cases of covid 19 including 70394 deaths.¹¹

Post-coronavirus disease (COVID-19) syndrome includes persistence of symptoms beyond viral clearance and fresh development of symptoms or exaggeration of chronic diseases within a month after initial clinical and virological cure of the disease with a viral etiology.¹²

Some patients experience new, recurring or ongoing symptoms related to COVID-19 several weeks after the acute phase of infection. The U.S. Centers for Disease Control and Prevention (CDC) recommends using the umbrella term “post COVID conditions” for a wide range of signs and symptoms that occur four or more weeks after acute COVID-19 infection¹³

In general, post-COVID conditions are characterized by a lack of return to a usual state of health following acute COVID-19 infection. The mechanism of post COVID conditions is not well understood, but is hypothesized to be secondary to virus specific pathophysiologic changes, prolonged inflammatory response to the acute infection and sequelae of post-intensive care illness. Post-COVID conditions can involve different combinations of health problems for varied lengths of time.¹⁴

A community based prospective cohort study was conducted among 154 patients admitted in CFLTCs of coastal Thiruvananthapuram, Kerala during May August 2020. The purpose of the study is to document the evidence of post COVID 5 syndrome among patients with asymptomatic or mild infections. They were enrolled at the time of their admission to CFLTCs and were followed up for three months after discharge. Out of the 154 patients followed up, 57 (37%) were men and 97 (63%) were women. The mean (SD) age of study participants was 31.49 (18.4) years. At least one symptom was present in 120 (78.0%) patients at the time of admission. Cough (29,18.8%), fever (26,16.8%), headache (25, 16.2%), rhinitis (23,14.9%) and sore throat (18, 11.7%) were the major symptoms reported at the time of admission. At the end of three weeks, 11 (7.1%) patients and at the end of three months 18 (11.7%) patients reported to have symptoms. Fatigue (5.8%), headache (5.8%), myalgia (3.2%), joint pain (2.5%) and exertional dyspnoea (2.5%) were the predominant symptoms.¹⁵

Systematic review aims to critically look into and amalgamate the evidence on impact of COVID-19 on psychological health of healthcare professionals in India. Prevalence of depression was found to be present in 41.90% of 5796 participants in five studies (95% Confidence Interval: 29.17 to 54.64), and prevalence of anxiety was found to be 42.87% common in 10 studies with a total sample size of 3059 people (95% Confidence Interval; 30.26 to 55.49). Stress was found to be prevalent (58.04%) in 12 studies with 4209 participants, (95% CI: 44.81–71.28) and prevalence of sleeping problem in 3 studies with 416 participants recorded a prevalence rate of 31.94 (95% CI: 21.38–42.49).¹⁶

A study was conducted among Health Care Workers in an English teaching hospital at Withington, Wigan and Leigh NHS Trust, Wigan, UK. Seropositivity for SARS-CoV-2 antibodies was evaluated for the majority of HCW in 2 months following the peak of COVID-19 first wave. The aim of the study was to investigate the long-term impact of COVID-19 in HCW. Results showed that out of 3759 subjects tested for 6 SARS-CoV-2 antibodies, 932 were positive (24%). Forty-five per cent of 138 HCW responding to the questionnaire reported persistent symptoms with 32% struggling to cope 3–4 months following the peak of the wave. Moderate-to-severe fatigue stood out as the most disabling symptom (39%) but mild-to-moderate shortness of breath, anxiety and sleep disturbance were almost universal in the subjects still struggling with symptoms. Only 16% consulted their general practitioner about their symptoms with only 2% taking sick leave after recovering from the acute illness.¹⁷

Healthcare workers (HCWs) are always at a high risk of infection due to the nature of their work and pose the risk of disease transmission their family members. With the ever-increasing number of post-COVID-19 patients, the new pandemic is the “post-COVID-19 syndrome.” Studies in COVID-19- Even with the initial recovery, it is a battle half won, and often, the post-COVID-19 issues continue to longer. To successfully plan healthcare services and efficiently allocate public health resources, it is essential to determine the burden of longer-term consequences of SARS-CoV-2 infection and the needs of affected individuals. In this descriptive study of SARS-CoV-2 infected individuals surveyed at least six months after diagnosis, the investigator aimed to assess the longer-term physical and psychological impact of COVID-19 and the associated factors.¹⁸

Objectives of the Study

- Identify the proportion of post covid 19 health problems among health care workers
- Find out the factors associated with post covid 19 health problems and selected socio personal and clinical variables.

Operational Definitions

Health care workers:

In this study it refers to those individuals who are directly or indirectly involved in the delivery of patient care with in the hospital such as doctors, nurses, technicians, physiotherapist, administrative staff and supportive staff.

Post COVID 19 health care problems:

In this study it refers to the physical problems (respiratory,

cardiovascular, renal, gastrointestinal, neurological, musculoskeletal, dermatological problems) and psychological problems at least 6month after infection with SARS -COV2 as measured by structured questionnaire and depression, anxiety and stress scale

Hypothesis

There is a significant association between the post covid19 health problems with selected socio personal and clinical variables.

2. Methods and Materials

Research design

Research design can be defined as an overall plan or blue print the researchers select to cases out their study.⁴⁴ Research Design adopted for this study was cross sectional survey design.

Variables

Variables are qualities properties or characteristics of person, things or situation that change or vary.

Socio personal variables

In the present study socio personal variables include age, gender, religion, education, occupation, marital status, type of family, place of residence, working hours and working days in a week, dietary habits.

Clinical variables

In the present study clinical variables include comorbidities, social habits, regular physical activity, acute covid 19 characteristics, vaccination status, type of vaccine, presence of adverse effects following vaccination, adverse effects following immunization, occurrence of covid 19 infection, type of treatment, area of treatment, treatment modalities in home and treatment modalities in hospital, pregnancy history during covid 19 infection.

Research setting

Research setting are specific places in research where data collection is to be made. The selection of setting was done on the basis of feasibility of conducting the study, availability, of subjects and permission authorities.⁴⁴ The present study was conducted at Sree Gokulam Medical College and Research Foundation, Venjarammodu.

Population

Population refers to the entire set of individual or object having some common characteristics.⁴⁶

Target population

The entire population in which the researchers are interested and to which they would like to generalize the research findings.⁴⁶ The target population of this study were health care workers 6 month after infection with SARS -COV2.

Study population

The aggregate of cases that confirm to designated inclusion or exclusion criteria and that are accessible as subjects of the study.⁴⁶ The study population of this study were health care workers 6 month after infection with SARS -COV2 and

working in SreeGokulam Medical College and Research Foundation, Venjaramodu.

Sample and sampling techniques

Sample

A sample is a subset of population selection to participate in research study. It is a portion of population which represent the entire population.⁴⁴ The samples selected for the present study were the health care workers 6 month after infection with SARS -COV2 and working in Sree Gokulam Medical College and Research Foundation, Venjaramodu

Sampling

Sampling is the process of selecting representative units of a population for study in research. It is the process of selecting a subset of a population in order to obtain information regarding a phenomenon in a way that represents the entire population.⁴⁷

Sample size

In this study the sample size calculated was 70

The findings of a cohort study on 6-month consequences of covid 19 in patients discharged from hospital showed that after 6 months, 76% of all patients had at least one of the symptoms which range from fatigue (63%).⁴⁸

$$p = 63\%$$

$$Q = 100 - p = 37$$

$$d = 20\% \text{ of } p$$

$$d = 20 \times 63/100 = 12.6$$

$$2 N = 4pq/d^2$$

$$4 \times 63 \times 37/12.6 \times 12.6 = 58.730$$

Sample size: **70**

Sampling technique

Sampling techniques refers to the process of selecting the population to represent the entire population.⁴⁴

The sample for the present study was selected using Convenient sampling Technique.

Inclusion criteria

The study includes health care workers who were.

- Diagnosed as Covid 19 by antigen or RTPCR test
- At least 6-month after infection with SARS Cov-2

Exclusion criteria

- The study excludes, Health care workers who are not available at the time of data collection

Instruments and tools of data collection Development of the tool

The tool acts as a instrument to assess and collect the data from the respondent of the study.⁴⁴ In the present study data collection instruments were socio personal data, clinical data, self-reported questionnaire and depression anxiety and stress scale to identify the post covid 19 health problems.

The tool was prepared based on review of literature, preparation of blue print, consultation with guide and subject experts

Description of the tool

Section A:

It consists of socio personal data of 11 items which were used to collect the sample characteristics. The socio personal data included were age, gender, religion, education, occupation, marital status, type of family, place of residence, working hours and working days in a week, dietary habits.

Section B:

It consists of Clinical data of 14 questions which were comorbidities, social habits, regular physical activity, acute covid 19 characteristics at the time of admission and vaccination status, type of vaccine, presence of symptoms after vaccination, adverse effects following vaccination, occurrence covid 19 infection, type of treatment, area of treatment, treatment modalities in home and treatment modalities in hospital, pregnancy history during covid 19 infection.

Section C: A self-reported questionnaire was prepared to assess the physical problems (respiratory, cardiovascular, gastrointestinal, neurological, musculoskeletal, dermatological problems among health care workers) in the post covid 19 period

Results of the study

The results of the study are presented under the following headings

Section I: Frequency and percentage distribution of subjects based on socio personal variables and clinical variables

Section II: Frequency and percentage distribution of subjects based on post covid 19 physical and psychological problems.

Section III: Association between post covid 19 health problems and selected socio personal and clinical variables

Section I:

Frequency and percentage distribution of subjects based on socio personal variables and clinical variables

The characteristics of the study subjects were as follows.

- 51.5% of health care workers were below 30 years of age among the subjects 84.3% were female health care workers
- Majority of (47.1%) health care workers were graduates.
- With regard to occupation 40% were nurses.
- 85.7% of health care workers were Hindus
- Among the health care workers, 91.4% were married and 8.6% unmarried
- Most of the subjects (75.7) % belongs to nuclear family and 24.3% belongs to joint family.
- Around (47.1%) of health care workers were worked for 8-10 hours and 74.3% of health care workers worked for 6 days in a week. Among the subjects 98.6% of the health care workers were non vegetarians.
- Based on the comorbidities 75.1% of the health care workers had no comorbidities and 11.4% have thyroid disorders. Around one third of health care workers (95.7%) had no ill habits. Only 4.3% were alcoholic and

71.4% of health care workers had no habit of doing physical exercise.

- 72.5% of health care workers had fever during acute covid 19 infection period. Among the subjects 98.6% of health care workers were vaccinated. 94.2% were vaccinated with covi shield and were 5.8% vaccinated with Covaxin.
- 51.42% of health care workers had fever after vaccination.
- 45.71% of health care workers were infected with SARS Cov2 after 2nd dose vaccination.
- About 80% of health care workers took home management during the infection period

Section II: Frequency and percentage distribution of subjects based on post covid 19 physical and psychological problems

- Most of the respiratory problems in the post covid 19 period, 38.6% of health care workers had Shortness of breath
- Regarding the cardiovascular problems in the post covid 19 period, 21.4% of health care workers had extreme shortness of breath with exertion.
- With regard to the gastro intestinal problems only 8.5% of health care workers had diarrhea.
- Around one third of renal problems in the post covid 19 period, 2.9% of health care workers had frequent urination and oedema on lower extremities.
- Based on the neurological problems in the post covid 19 period 22.9% of health care workers had headache.
- As concerns to the musculoskeletal problems in the post covid 19 period 47.1% of health care workers had fatigue. Regarding the dermatological problems in the post covid 19 period 50% of health care workers had hair loss.
- Around 15.7% of health care workers had mild stress 8.6% of health care workers had severe anxiety and majority of subjects 81.4% had no depression as psychological problems.

Section III Association between post covid 19 health problems and selected socio personal and clinical variables.

Association between socio personal variables and post covid 19 physical problems

There was statistically no significant association between ($p>0.05$) shortness of breath with selected socio personal variables.

- There was statistically significant association between extreme shortness of breath with exertion and marital status ($p<0.01$). Statistically no significant association between frequent urination and socio personal variables ($p>0.05$).
- Statistically significant association between working hours (chi-square value= 0.011, $p<0.05$) with fatigue). Statistically significant association between hair loss with gender (chi-square value =0.002, $p<0.01$) marital status (chi-square value 0.008, $p<0.01$)

Association between socio personal variables and post covid 19 psychological problems

There was statistically significant association between anxiety with educational status (chi-square value 0.045, $p>0.05$). Statistically there was significant association between depression with working hours (chi-square value 0.050,

$p<0.05$).

Association between post covid physical problems and post covid 19 psychological problems with selected clinical variables

There was statistically no significant association between post covid 19 physical problems and post covid 19 psychological problems with, selected clinical variables. ($p>0.05$).

The study findings concluded that post covid problems like fatigue and hair loss in physical problems and stress and anxiety in psychological problems most commonly affected in health care workers.

3. Discussion

Post-COVID conditions can include a wide range of ongoing health problems and these conditions can last weeks, months, or years. Post-COVID conditions are found more often in people who had severe COVID-19 illness, but anyone who has been infected with the virus that causes COVID-19 can experience post-COVID conditions, even people who had mild illness or no symptoms from COVID-19. People who are not vaccinated against COVID-19 and become infected may also be at higher risk of developing post-COVID conditions compared to people who were vaccinated and had break through infections.¹⁴

The objectives of the study were to identify the proportion of post covid 19 health problems among health care workers and to find out the factors associated with post covid 19 health related problems and selected socio personal and clinical variables. The major findings of the study were reviewed in relation to similar studies conducted by other researchers.

Section A: Distribution of subjects based on socio personal variables and clinical variables

Section B: Distribution of subjects based on post covid 19 physical problems

Section C: Distribution of subjects based on post covid 19 psychological problems

Section A: Distribution of subjects based on socio personal variables and clinical variables

In the present study data were collected from 70 health care workers regarding post covid 19 physical and psychological problems. Results showed that among the 70 subjects 51.5% of health care workers were below 30 years of age. And 84.3% were female health care workers.

The study findings were contradictory to the findings of another descriptive study conducted to assess the post covid complications among covid 19 patients, jointly by Department of Community Medicine and General Medicine at the largest tertiary care Centre of western Rajasthan by Jan 2021. A total of 831 patients treated at this hospital during the 1st wave of COVID were evaluated for possible post COVID sequelae. Most of the of the patients were male (67.4%) and 32.6% were females. Lack of sleep was more common among younger age group, while anxiety/depression and prolonged cough were equally common among all age groups. Prolonged loss of taste/smell were seen 17 exclusively among younger age patients.⁴⁹

Section B: Distribution of subjects based on post covid 19 physical problems

In the present study majority (47.1%) of health care workers were worked for 8-10 hours and 74.3% of health care workers were worked 6 days in a week. Among the 70 subjects 22.85% of health care workers had headache 47.14% of health care workers had fatigue and 25.6% had back pain as post covid 19 physical problems. With regard to the skin problems 50% had hair loss problems.

The study findings were similar to the findings of another study conducted in China among 1733 laboratory confirmed covid 19 patients. The purpose of the study is to identify 6-month consequences of covid 19 in patients discharged from hospital. The findings revealed that, 76% of all patients had at least one of the listed symptoms develop after 6 months, it ranges from fatigue (63%), difficulty sleeping (26%), hair loss (22%), difficulty with smell and taste (11 and 9%) and trouble with mobility (7%).⁴⁸

The study findings were similar to another study as a phone-based survey was conducted among 120 patients who was diagnosed with covid 19 in France. The purpose of the study is to identify persistent symptoms and health related quality of life after hospitalization for covid 19, The findings of the study revealed that fatigue (55%), dyspnea (92%), memory loss (37%), sleep disorders (30.8%), and difficulty with concentration (28%), were the common post covid 19 symptoms seen in patients diagnosed with covid 19.⁵⁰

Section C: Distribution of subjects based on post covid 19 psychological problems

In the present study 15.7% of health care workers had mild stress and 8.6% of health care workers had severe anxiety and 8.6% had depression.

The study findings were similar to the findings of a population-based prospective cohort study; to assess the magnitude of mental health outcomes and associated factors among health care workers treating patients exposed to COVID-19 in China. The findings of this study were, symptoms were present in 385 (89%) participants at diagnosis and 81 (19%) were initially hospitalized. At six to eight months, 111 (26%) reported not having fully recovered. 233 (55%) participants reported symptoms of fatigue, 96 (25%) had at least grade 1 dyspnea, and 111 (26%) had DASS-21 scores indicating symptoms of depression.⁶

The findings of the present study were similar to the findings of another study. A cross-sectional study was conducted at the National Cheng Kung University Hospital (NCKUH) in Tainan, Taiwan. This study aims to examine the prevalence of post-traumatic stress disorder (PTSD) symptoms, sleep problems, and psychological distress among COVID-19 frontline healthcare workers in Taiwan. A total of 500 frontline healthcare workers were recruited to participate in this cross-sectional study. They responded to measures on fear of COVID-19, depression, anxiety, stress, insomnia, PTSD, perceived stigma, and self-stigma. The results indicated a prevalence rate of 15.4% for Post-Traumatic Stress Disorder symptoms, 44.6% for insomnia, 25.6% for depressive symptoms, 30.6% for anxiety symptoms, and 23.4% for stress among the participants⁵¹

4. Conclusion

Based on the findings of the study the following conclusions were drawn

- Health care workers had fatigue and hair loss as their post covid 19 physical problems
- Health care workers had stress and anxiety as their post covid 19 psychological problems

5. Recommendations

- In the light of the findings of the study and few personal experiences of the investigator, the following recommendations are put forward
- Educational session as post covid 19 syndromes should be drawn up and implemented in different settings.
- A similar study will be replicated on a large sample • Effective utilization of man, media should be done for propagating information about post covid 19 syndrome.
- Identification of post covid 19 health problems will contribute to further development of health promotion strategies.

6. Limitations

- The study was limited to a sample size of 70 health care workers
- Study was limited to health care workers of Sree Gokulam Medical College and Research Foundation which imposes limits on generalization.
- The structured questionnaire was used to collect the data, which restricted the respondents in providing wide range of information.

References