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Original Research Article

Post-traumatic stress disorder symptoms among caretakers of COVID 19 and caretakers of non COVID 19 patients: A comparative study

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ABSTRACT

Background: All over the world, the public is being informed about the physical effects of COVID-19 infection and protocols are being made to prevent exposure to the corona virus and manage symptoms of COVID-19 if they appear. However, the effects of this pandemic on individual's mental health and behavior have not been studied in detail and are still not known. Efforts are being made to focus on understanding the clinical features, routes of transmission, epidemiology, and management of the COVID-19 outbreak, there has been very little concern expressed over the effects on one's mental health and on strategies to prevent stress. The aim of this study was to assess the post traumatic stress disorder symptoms among the care takers of COVID-19 patients and care takers of non COVID-19 patients and compare the results to explore the impact of COVID-19 on the mental health of the population associated with the COVID-19 patients. This may help in future in early detecting the post traumatic stress disorder associated with covid-19 or any other pandemic and may help in taking early measures to avoid it and improve the mental health of general population.

Results: The study finding revealed that among care takers of covid-19 patients majority of study subjects (93.3%) had complicated PTSD, (6.7%) had Diagnostic PTSD and none of the subjects had Partial PTSD whereas, among care takers of non covid-19 patients majority of study subjects (36.7%) had Partial PTSD, (26.7%) had complicated PTSD, (23.3%) had no PTSD and (13.3%) had diagnostic PTSD. This indicates that the covid-19 had more psychological impact on the care takers than any other life threatening disease. This may be due to fast dissemination of covid-19, more deaths attributed to the pandemic and care takers concern for his/her health.

Conclusions: The study concluded that the covid-19 had more psychological impact on the care takers than any other disease conditions. So there is need to improve the strategies to reduce the risk of developing PTSD symptoms in this group of population.

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1. Introduction

At the end of December 2019 the World Health Organization (WHO) is informed of a new outbreak of several cases of pneumonia of unknown a etiology in a chinese province.[1] On the 11th of March 2020, the World Health Organization identified Covid-19 as being a pandemic. The spread of this new virus, as well as its incidence, rapidly forced a large part of the world's countries to take drastic health measures to protect populations and health systems.[2]The increasing global morbidity and mortality due to the corona virus disease 2019 (covid-19) have become a considerable concern for public

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health. As of 11 October 2020, there were more than 37 million covid-19 cases confirmed, and there have been about one million deaths worldwide.[3] The emergence of such a pandemic, such as the world has not seen for more than a century, became a public health issue and an international economic challenge. Then, dozens of countries took the decision to quarantine their citizens. Crowded hospitals, lack of equipments, treatment and documentation as well as pharmacological shortages, record-breaking morbidity and mortality led to a global health crisis.[4]World Health Organization(WHO) has declared that covid-19 has caused more chaos than natural disasters like volcanic eruptions, hurricanes and earthquakes or even war has.[5]

Each country, each hospital, centre took unprecedented measures in order to able to accommdate the massive influx of patients.Hospitals were running out of oxygen, patients were dying on roads, every one was looking for his/her safety. The Intensive Care Units (ICUs) were heavily impacted.[6] Healthcare professionals were also trained quickly to be operational as soon as possible.

Public health measures such as lockdown, isolation, quarantine have been implemented to disseminate the Covid-19 pandemic. All these measures lead to major daily-life change that could be stressful. It has been well documented that quarantine or confinement or isoltion could lead to the occurance of Post-Traumatic Stress Disorder (PTSD) syndrome in about 30% overall population. Importantly, high depressive symptoms have been reported in 9% of hospital staff. Numerous symptoms have been reported after quarantine or isolation such as emotional disturbance, depression, stress, low mood, irritability, insomnia and post-traumatic stress symptoms.[7]

The people associated with the covid-19 patients whether the healthcare team, care takers of covid-19 patients or even the other family members of covid-19 patients have an increased risk of developing psychological disorders during the pandemic such as anxiety, depression, PTSD, anger, fear, guilt, irritability, frustation and sleep disturbance.[8] Now there is growing concern about the long-term psychological effects, including post-traumatic stress disorder (PTSD).

The covid-19 has been officially linked to the deaths of hundreds of thousands of people across the globe in just a few months. It is particularly lethal for elderly in general as well as for populations residing in long term stay facilities. By the time those working and caring for the covid-19 patients have been exposed to very intense and sudden levels of physical and psychological strain.[9]

Losing a family member, limited mobility, physical social isolation, losing one's job and fear of contagion may increase the vulnerability to mental health concerns.[3] Among the mental health conditions related to the exposure to potentially traumatic events, post traumatic stress disorder (PTSD) and anxiety are the most prevalent and scientifically recognized.[10]

Very recent meta-analytic data exhibited that mental health problems are common in different populations with an overall pooled prevalence of depression, anxiety, distress, and insomnia 31.4%, 31.9%, 41.1% and 37.9%, respectively. In regards with population subgroups, patients with non-infectious chronic disease (such as cancer or diabetes) had the highest prevalence of depression of all groups, and high rates of anxiety and distress. In addition, people who were quarantined, patients suspected of covid-19 infection, people taking care of Covid-19 patients and physicians and nurses had high prevalence of depression, anxiety, distress and insomnia.[11]

Covid-19 pandemic is a new type of trauma that has never been conceptually or empirically analyzed. Pandemics and epidemics have a broad spectrum of neuro psychiatric, economic, and mortal impacts, usually followed by critical social or historical changes. However, the construct and mental health impact of previous pandemics in history have never been empirically examined. Covid-19 traumatic stress is not necessarily related to the actual infection of covid-19 but also is more related to the perceived/actual threat of the uncontrolled virus and the direct and indirect economic and social consequences of actions taken by different agencies to deal with the virus on the person and secondary trauma of the death of loved ones due to the infection by the virus, long hospital stays with the loved ones, watching people dying in hospitals.[12]

Post-traumatic stress disorder (PTSD) is a psychiatric disorder that results from the experience or witnessing of traumatic or life-threatening events such as terrorist attack, violent crime, pandemics and abuse, military combat, natural disasters, serious accidents or violent personal assaults. PTSD has profound psycho biological correlates, which can impair the person's daily life and be life threatening. PTSD is a serious public health concern, which compels the search for novel paradigms and theoretical models to deepen the understanding of the condition and to develop new and improved modes of treatment intervention.[13]

The experience of the covid-19 pandemic may be associated with post-traumatic stress disorder (PTSD) or post-traumatic stress symptoms (PTSS). PTSD is defined as a mental health disorder triggered by witnessing or experiencing a traumatic event, while PTSS is defined as a wide range of stress response symptoms that occur three months up to several years after the traumatic event. PTSS may include flashbacks, avoidance of memories that cause distress, nightmares, feelings of guilt, sleep disturbances and unpleasant physical sensation. In fact, it is reported that 26% of the general population had PTSD or PTSS during the covid-19 pandemic in the United States. However, the number of PTSD patients is expected to increase significantly due to the global impact of covid-19.Thus,

the covid-19 pandemic increases the rate of PTSD as a traumatic event itself and may increase the secondary impact of risk factors overall.[3] The research suggests that when a traumatic experience is ongoing, post traumatic stress disorder (PTSD) symptoms become more significant and severe.[12]

The emerging focus on the relationship between covid-19 and PTSD requires an evidence- based understanding of the factors associated with PTSD. Several studies have explored the psychological effects of the covid-19 pandemic. Covid-19 is a highly contagious disease, and daily direct or indirect exposure to the virus might cause physical and mental stress, making individuals more vulnerable to mental health disorders. According to the uncertainty reduction theory, in unpredictable situations, people may feel unpleasant and experience cognitive stress. The covid-19 pandemic may increase physical social isolation and self-isolation, rendering the perception of belonging uncertain. This can help to explain covid-19 as a traumatic event that causes emotional damage and traumatic stress. Uncertainty about covid-19 can increase levels of anxiety and stress, and prolonged periods of experiencing the same stress can cause mental health problems such as stress, depression.[3]

Traumatic events are profoundly stressful. The stress that results from traumatic events precipitates a spectrum of psycho-emotional and physio pathological outcomes. In its gravest form, this response is diagnosed as a psychiatric disorder consequential to the experience of traumatic events. Most people who go through traumatic events may have temporary difficulty adjusting and coping, but with time and good self-care, they usually get better. If the symptoms get worse, last for months or even years, and interfere with day-to-day functioning, It may be PTSD.[14]

The onset and progression of PTSD is characteristic for every individual subject, data suggest that most people who are exposed to a traumatic, stressful event will exhibit early symptoms of PTSD in the days and weeks following exposure. Available data from the National Center for PTSD suggest that 8% of men and 20% of women go on to develop PTSD and 30% of these individuals develop a chronic form that persists throughout their lifetimes. Complex PTSD, which is also referred to as 'disorder of extreme stress', results from exposure to prolonged traumatic circumstances, such as for months or year.[15]

Hospitalization of the patients often leads to physical, cognitive, and psychiatric symptoms among survivors and their caretakers However, the current pandemic is making extra ordinary demands on them both physically and mentally. Caretakers are the informal caregivers who provide regular care or assisstance to a family member admitted in the hospital.

The eruption and unfolding of the covid-19 pandemic is a chance to advance the understanding of pandemics as traumatic stress and try to fill this gap in trauma research and study pandemics' effects on mental health. One of the factors that make the covid-19 threats and this trauma type unique and even more severe than other trauma types is its uncontrolled invisibility. We can identify and actively fight or control the perpetrator through the law and other means in numerous other trauma types. However, fighting and mitigating the covid-19 virus depends on the further advance of scientific knowledge and the diligence of policy and decision-making, effective planning, and accepting and dealing with its real risks.[12]

1.1. Why this study was necessary

Considering the present scenario, review of various studies and the researchers personal experience with the COVID-19 patients and the care takers of COVID-19 patients, it was observed that care takers of COVID-19 patients experience a lot of stress, anxiety, fear and distress due to various factors and they are inadequately equipped to manage stress and are vulnerable to develop the symptoms of post traumatic stress disorders due to COVID-19 consequences. As there has been no such study done on the said problem in Kashmir valley, This motivated the researchers to undertake a study to assess the post traumatic stress disorder symptoms among the care takers of COVID-19 patients and care takers of non COVID-19 patients and compare the results to explore the impact of COVID-19 on the mental health of the population associated with the COVID-19 patients. This may help in future in early detecting the post traumatic stress disorder associated with COVID-19 or any other pandemic and may help in taking early measures to avoid it and improve the mental health of general population.

2. Objectives of Study

1. To assess the post traumatic stress disorder (PTSD) symptoms among care takers of covid-19 patients.
2. To assess the post traumatic stress disorder (PTSD) symptoms among care takers of non covid-19 patients.
3. To compare the post traumatic stress disorder symptoms of care takers of covid-19 patients with care takers of non-covid-19 patients.
4. To determine association between post traumatic stress disorder (PTSD) symptoms of care takers of covid-19 and selected demographic variables (i.e., age, gender, total family income per month in rupees, total number of family members, educational status, residence, relationship with the patient).
5. To determine association between post traumatic stress disorder (PTSD) symptoms of care takers of non covid-19 and selected demographic variables(i.e.; age, gender, total family income per month in rupees, total number of family members, educational status, residence, relationship with the patient).

2.1. Hypotheses

1. **H** $_1$.There is significantly higher level of post traumatic stress disorder (PTSD) symptoms among care takers of covid-19 than the care takers of non covid-19.
2. **H**$_2$ **.**There is a significant association between the post traumatic stress disorder(PTSD) symptoms of care takers of covid-19 and selected demographic variables age ,gender ,total family income per month in rupees, total number of family members, educational status, residence, relationship with the patient at 0.05 level of significance.
3. **H**$_3$ **.**There is a significant association between the post traumatic stress disorder(PTSD) symptoms of care takers of non covid-19 and selected demographic variables age ,gender, total family income per month in rupees, total number of family members, educational status, residence, relationship with the patient at 0.05 level of significance.

3. Materials and Methods

3.1. Design

This research employed a cross-sectional descriptive research design.

3.2. Aim of the study

The people associated directly with COVID-19 patients such as health care workers, care takers of COVID-19 patients experience a lot of stress, anxiety ,fear and distress due to various factors, and they are inadequately equipped to manage stress and are vulnerable to develop the symptoms of post traumatic stress disorders due to COVID-19 consequences. The aim of the present study was to assess the post traumatic stress disorder symptoms among the care takers of COVID-19 patients and care takers of non COVID-19 patients and compare the results to explore the impact of COVID-19 on the mental health of the population associated with the COVID-19 patients. This may help in future in early detecting the post traumatic stress disorder associated with COVID-19 or any other pandemic and may help in taking early measures to avoid it and improve the mental health of general population.

3.3. Study area

The study was conducted at a tertiary care hospital (SKIMS) of Srinagar Kashmir. SKIMS is a Deemed Medical university with the purpose to provide facilities of specialized medical care, education of highest standards in medical sciences and need based clinical research. In addition to the Deemed University and the main hospital with covid care facilities, the institute comprises the State Cancer Institute, Maternity Hospital, Nursing College, Paramedical College and an affiliated Medical College and Hospital.

3.4. Study population

In the present study, the population consists of care takers of COVID-19 patients and care takers of non COVID-19 patients who were admitted at SKIMS Soura Srinagar during the period 01-02-2021 to 15-05-2021.

3.5. Sampling criteria

The researcher specifies the characteristics of the population by keeping Inclusion & Exclusion criteria in the study. Care takers who were willing to participate in the study, who were the age of ≥ 18 years were included in the study. Care takers who were not willing to participate or who were below the age of 18 years and care takers having previous history of trauma were excluded from the study.

3.6. Data collection tool

In the present study data collection tool used was structured interview schedule to assess socio demographic/clinical variables and standardized tool 'Impact of Event Scale Revised(IES-R)' to collect data from the care takers of COVID-19 patients and care takers of non COVID-19 patients who were admitted in the SKIMS to assess the post traumatic stress disorder symptoms. The tool was translated in Urdu language and re translated in English language and was sent to panel of experts for validation and better understanding of the subjects.

3.7. Data collection

For data collection, permission was obtained from the Principal, MMINSR, SKIMS, Soura to conduct the research study. The information about the patients and their care takers were collected from the Medical Records Department SKIMS. The study subjects were approached telephonically and the purpose of the study was explained and the appointment was finalize for data collection. The subjects were called to the SKIMS on the scheduled date and time as per their feasibility for the data collection. After taking the informed consent from study subjects, the data was collected individually from the subjects through self-structured/standardized interview schedule and took an average of 25-30 minutes per subject.

4. Data Analysis and Interpretation

Frequency and percentage was used to analyze the demographic variables and the PTSD Symptoms were analyzed in terms of frequency, percentage, mean and standard deviation. Comparison of presence of PTSD symptoms of caretakers of COVID-19 and non COVID-19 patients was calculated by unpaired " t" test and Chi square

test was used to find the association of PTSD Symptoms with the selected demographic variables of the study.

5. Ethical Clearance

Ethical clearance and permission was obtained from Institutional Ethical Committee (IEC), SKIMS, to conduct the research study on "A comparative study to assess the post traumatic stress disorder symptoms among the care takers of COVID-19 patients and care takers of non-COVID-19 patients in a tertiary hospital (SKIMS) of Srinagar Kashmir"

6. Results

Section I: Description of demographic variables of study subjects.

The data presented in Table 1 indicates that maximum of the study subjects with 46.7% care takers of covid-19 patients and 46.7% care takers of non covid-19 patients belonged to the age group of 30-50 years, where as 23.3% care takers of covid-19 patients and 36.7% care takers of non covid-19 patients belonged to the age group of 18-30 years and 30% care takers of covid-19 patients and 16.7% care takers of non covid-19 patients belonged to the age group of 50-70 years. As per gender almost equal number of study subjects with 60% care takers of covid-19 patients and 63.3% care takers of non covid-19 patients were males and 40% care takers of covid-19 patients and 36.7% care takers of non covid-19 patients were females. Maximum of the study subjects with 40% care takers of covid-19 patients and 46.7% care takers of non covid-19 patients had monthly family income of >Rs 50,000,almost equal number of study subjects with 40% care takers of covid-19 patients and 36.7% care takers of non covid-19 patients had monthly family income of Rs 40,000-50000, 16.7% care takers of covid-19 patients and 10% care takers of non covid-19 patients had monthly family income of Rs 30000-40000 and only 3.3% care takers of covid-19 patients and 6.7 care takers of non covid-19 patients had monthly family income of Rs <30,000. Maximum of the study subjects with 56.7% care takers of covid-19 patients and 40% care takers of non covid-19 patients had family strength of 5-7 members, where as 20% care takers of covid-19 patients and 33.3% care takers of non covid-19 patients had family strength of 8-10 , 20% care takers of covid-19 patients and 6.7% care takers of non covid-19 patients had family strength of 2-4 and 3.3% care takers of covid-19 patients and 20% care takers of non covid-19 patients had family strength of more than 10 members. As per the educational status most of the study subjects 36.7% care takers of covid-19 patients and 53.3% care takers of non covid-19 patients were graduate, whereas 30% care takers of covid-19 patients and 36.7% care takers of non covid-19 patients were post graduate, 26.7% care takers of covid-19 patients and 6.7% care takers of non covid-19 patients had completed higher secondary education and 6.7% care takers of covid-19 patients and 3.3% care takers of non covid-19 patients had educational status of matric or below. None of the study subjects from both the groups were Illiterate. According to the residence majority of the study subjects with 70% care takers of covid-19 patients and 63.3% care takers of non covid-19 patients belonged to urban areas where as 30% care takers of covid-19 patients and 36.7% care takers of non covid-19 patients belonged to rural areas. Most of the study subjects with 30% of care takers of covid-19 patients and 36.7% care takers of non covid-19 patients were the children, whereas 26.7% care takers of covid-19 patients and 20% care takers of non covid-19 patients were the parents, 20% care takers of covid-19 patients and 23.3% care takers of non covid-19 were the siblings,20% care takers of covid-19 patients and 20% care takers of non covid-19 patients were the spouses and only 3.3% of study subjects were the cousins of the patients.

Section II: Description of PTSD symptom scores among care takers of covid-19 and care takers of non covid-19 patients.

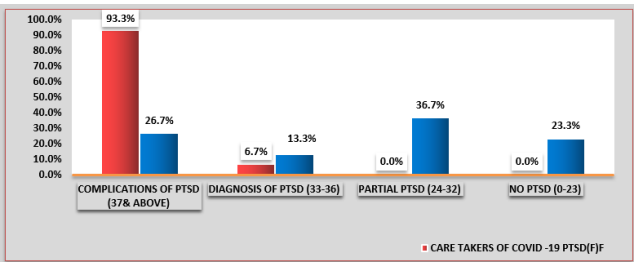

Fig. 1: Bar diagram showing percentage distribution of study subjects according to PTSD symptom scores.

The data presented in table 2 and Figure 1 figure 1 showed that among the care takers of covid-19 patients majority of study subjects with 93.3% had complicated PTSD whrere as 6.7% had Diagnostic PTSD and none of the subjects had partial PTSD, where as among the care takers of non covid-19 patients maximum number of study subjects with 36.7% had partial PTSD where as 26.7% had complicated PTSD, 13.3% had diagnostic PTSD and 23.3% had no PTSD.

Section III: Description of comparison between PTSD symptom scores of care takers of covid-19 and care takers of non covid-19 patients and the significance of difference between the mean PTSD symptom scores.

The data in the Table 3 and Figure 2 shows that the mean PTSD symptom scores (45.0±4.927) of the study subjects (care takers of COVID-19) was significantly higher than that of the mean PTSD symptom scores of study subjects (care takers of non COVID-190 (31.33±10.476) that means there are higher level of PTSD symptoms present in care takers of COVID-19 than the care takers of non COVID-19 patients

Table 1:

Demographic Variables		Care takers of COVID-19 (n=30)		Care takers of non COVID-19 (n=30)	
		Frequency	Percentage%	Frequency	Percentage%
Age in years	18-30	7	23.3%	11	36.7%
	30-50	14	46.7%	14	46.7%
	50-70	9	30%	5	16.7%
Gender	Male	18	60%	19	63.3%
	Female	12	40%	11	36.7%
Total family income in rupees per month.	Rs<30,000	1	3.3%	2	6.7%
	Rs 30000-40000	5	16.7%	3	10%
	Rs 40000-50000	12	40%	11	36.7%
	Rs>50000	12	40%	14	46.7%
Total number of family members	2-4	6	20%	2	6.7%
	5-7	17	56.7%	12	40%
	8-10	6	20%	10	33.3%
	Above 10	1	3.3%	6	20%
Educational status	Illiterate	0	0%	0	0%
	Matric or below	2	6.7%	1	3.3%
	Higher secondary	8	26.7%	2	6.7%
	Graduate	11	36.7%	16	53.3%
	Post Graduate	9	30%	11	36.7%
Residence	Urban	21	70%	19	63.3%
	Rural	9	30%	11	36.7%
Relationship with the patient	Spouse	6	20%	6	20%
	Sibling	6	20%	7	23.3%
	Parent	8	26.7%	6	20%
	Children	9	30%	11	36.7%
	Cousin	1	3.3%	0	0%

Table 2: ShowsFrequency and percentage distribution of study subjects according to PTSD symptom scores. n=60

Criteria Measure of Ptsd Score	Care takers of COVID-19 (n=30)		Care takers of Non COVID-19 (n=30)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Complicated PTSD (37& above)	28	(93.3%)	8	(26.7%)
Diagnosis of PTSD (33-36)	2	(6.7%)	4	(13.3%)
Partial PTSD (24-32)	0	(0%)	11	(36.7%)

Table 3: Comparison between PTSD symptom scores of care takers of covid-19 and care takers of non covid-19 patients and the significance of difference between the mean PTSD symptom scores.

PTSD Score	Mean Score	S.D.	Unpaired 't' Test	P value	Table Value at 0.05	Result
Care Takers OF COVID -19 n=30	45.00	4.92	6.46	*** <0.001	2.002	Significant
Care Takers of Non COVID-19 (n=30)	31.33	10.47				
***Significant at 0.05 level of significance						

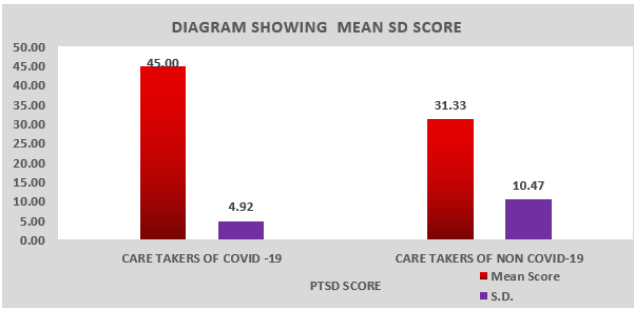

Fig. 2: Bar diagram showing comparison between mean PTSD symptom scores of care takers of covid-19 and care takers of non covid-19 patients.

admitted at 0.05 level of significance.

Section IV: Association between PTSD symptoms of study subjects and their selected demographic variables i.e. age, gender, total family income in rupees per month, total number of family members, educational status, residence, relationship with the patient.

The data presented in the Table 4 depicts that there was statistically no significant association between the PTSD symptom scores of study subjects (care takers of COVID-19) and demographic variables like age (p=0.522), gender (p=232) ,total family income in rupees per month (p=0.492), total number of family members (p=0.687), educational status (p=0.723), residence (p=0.338), relationship with the patient(p=0.637).

The data presented in theTable 5 depicts that there was statistically no significant association between the PTSD symptom scores of study subjects (care takers of non COVID-19) and demographic variables like age (p=0.213), gender (p=0.828), total family income in rupees per month (p=0.271), total number of family members(p=0.618), educational status(p=0.647), residence (p=0.839), relationship with the patient(p=0.338).

7. Discusstion

A comparative descriptive study was conducted to assess the post-traumatic stress disorder among the care takers of covid-19 patients and care takers of non-covid-19 patients. The study subjects were selected through purposive sampling technique and data was collected from 60 care takers. i.e. 30 care takers of covid-19 patients and 30 care takers of non covid-19 patients. The final study was conducted from 15th of September 2022 to 07th of October 2022. A structured interview schedule and Standardized scale/interview schedule was used to collect data from the care takers of covid-19 and non-covid19 patients, which was analyzed by using descriptive and inferential statistics as per the objectives of the study.

7.1. Description of demographic variables of the study subjects

Demographic variables i.e. age, gender, total family income in rupees, total number of family members, educational status, residence and relationship with the patient.

The findings related to percentage distribution of study subjects were:

1. As per age in care takers of covid-19 patients, maximum of the study subjects .i.e. (46.7%) belonged to the age group of 30-50 years, (30%) were in the age group of (50-70) years and (23%) in the age group of (18-30) years and in care takers of non-covid-19 patients most of the study subjects .i.e. (46.7%) were in the age group of 30-50 years, (36.7%) were in the age group of 18-30 years and (16.7%) in the age group of 50-70 years.
2. As per gender, almost equal numbers of subjects (60 % care takers of covid-19 and 63.3 % care takers of non covid-19) were males and (40% care takers of covid-19 and 36.7% care takers of non covid-19) were females.
3. Regarding total family income, maximum of the study subjects .i.e. (40%) Care takers of covid-19 patients and (46.7%) care takers of non covid-19 patients had monthly family income >Rs50,000, (40%) care takers of covid-19 and (36.7%) care takers of non covid-19 patients had monthly family income between Rs 40,000-Rs.50000, (16.7%)care takers of covid-19 and (10%) care takers of non covid-19 patients had monthly family income between Rs 30000-40000 and (3.3%) care takers of covid-19 and (6.7%) care takers of non covid-19 patients had monthly family income <Rs. 30,000.
4. As per family strength, maximum of the study subjects .i.e.(56.7%) care takers of covid-19 patients and (40%) care takers of non covid-19 patients was 5-7.while as family strength of (20%) care takers of covid-19 and (33.3%) care takers of non covid-19 patients was 8-10 , family strength of(20%) care takers of covid-19 and (6.7%) care takers of non covid-19 was 2-4 and (3.3%) care takers of covid-19 and (20%) care takers of non covid-19 was having family strength of more than 10.
5. As per educational status , maximum of the study subjects i.e. (53.3%) care takers of noncovid-19 and (36.7%) care takers of covid-19 were graduate , Whereas (36.7%) care takers of non covid-19 and (30%) care takers of covid-19 patients were post graduate, (26.7%) care takers of covid-19 and (6.7%) care takers of non covid-19 patients had completed higher secondary education, (6.7%) care takers of covid-19 patients and (3.3%) care takers of non covid-19 patients had matric or below as their educational qualification and none of the study subject were illiterate.

Table 4: Shows Association between PTSD symptoms of care takers of COVID-19 patients and their selected demographic variables. n=30

Variables	Categories	Complications Of PTSD	Diagnosis of PTSD	Partial Ptsd	NO PTSD	Chi Test	df	P Value	Result
Age in years	18-30 years	6	1	0	0	1.30	2	0.522	Non-Significant
	30-50 years	13	1	0	0				
	50-70 years	9	0	0	0				
Gender	Male	16	2	0	0	1.42	1	0.232	Non-Significant
	Female	12	0	0	0				
Total family income in rupees per month	<30000	1	0	0	0	2.41	3	0.492	Non-Significant
	30000-40000	4	1	0	0				
	40000-50000	11	1	0	0				
	>50000	12	0	0	0				
Total no of family members	2-4	5	1	0	0	1.48	3	0.687	Non-Significant
	5-7	16	1	0	0				
	8-10	6	0	0	0				
	Above 10	1	0	0	0				
Educational status	Illiterate	0	0	0	0	1.32	3	0.723	Non-Significant
	Matric or below	2	0	0	0				
	Higher secondary	7	1	0	0				
	Graduate	10	1	0	0				
	Post graduate	9	0	0	0				
Residence	Urban	19	2	0	0	0.91	1	0.338	Non Significant
	Rural	9	0	0	0				
Relationship with the patient	Spouse	5	1	0	0	2.54	4	0.637	Non Significant
	Sibling	6	0	0	0				
	Parent	7	1	0	0				
	Children	9	0	0	0				
	Cousin	1	0	0	0				

Table 5: Shows Association between PTSD symptoms of care takers of non COVID-19 patients and their selected demographic variables. n=30

Demographic Data		Levels				Association with Care Takers of Non COVID-19 PTSD D			
Variables	**Categories**	**Complications of ptsd**	**Diagnosis of ptsd**	**Partial ptsd**	**No ptsd**	**Chi Test**	**df**	**P Value**	**Result**
Age in years	18-30 years	3	3	3	2	8.36	6	0.213	Non Significant
	30-50 years	5	1	6	2				
	50-70 years	0	0	2	3				
Gender	Male	6	2	7	4	0.89	3	0.828	Non Significant
	Female	2	2	4	3				
Total family income in rupees per month	<30000	2	0	0	0	11.07	9	0.271	Non Significant
	30000-40000	0	1	1	1				
	40000-50000	3	0	4	4				
	>50000	3	3	6	2				
Total no of family members	2-4	1	0	1	0	7.18	9	0.618	Non Significant
	5-7	2	2	4	4				
	8-10	4	1	2	3				
	Above 10	1	1	4	0				
Educational status	Illiterate	0	0	0	0	6.90	9	0.647	Non Significant
	Matric or below	0	0	1	0				
	Higher secondary	0	0	2	0				
	Graduate	4	2	6	4				
	Post graduate	4	2	2	3				
Residence	Urban	5	2	8	4	0.84	3	0.839	Non Significant
	Rural	3	2	3	3				
Relationship with the patient	Spouse	2	0	3	1	10.16	9	0.338	Non Significant
	Sibling	2	1	2	2				
	Parent	0	2	4	0				
	Children	4	1	2	4				
	Cousin	0	0	0	0				

6. As per residence, maximum of the study subjects (70% care takers of covid-19 and 63.3% care takers of non covid-19 patients) belonged to urban areas and (30% care takers of covid-19 and 36.7% care takers of non covid-19 patients) belonged to urban areas.
7. Regarding relationship with the patient , most of the study subjects .i.e. (56.7%) care takers of non-covid-19 and (30%) care takers of covid-19 patients were the children of the patients, whereas (26.7%) care takers of covid-19 and (20%) care takers of non covid-19 patients were the parents of the patients, (23.3%) care takers of non covid-19 and (20%) care takers of covid-19 patients were the siblings of patients, (20%) care takers of covid-19 and (20%) care takers of non covid-19 patients were the spouses of the patients , Only (3.3%) of study subjects were the cousins of the patients.

7.2. These findings of the present study were consistent with the findings of the following studies

In a prospective, cohort study conducted by Amass, Scoy, Hua, Ambler, Armstrong, Baldwin, et.al[16] in 2022 (N=330) to assess the prevalence of symptoms of stress related disorders in family members of patients admitted to the intensive care unit with covid-19 in 8 academic affiliated and 4 community based hospitals in 5 US states. The results revealed that among 330 participants, the mean age was (51.2± 15.1) years and 40.6% were the children of patients.

In a cross-sectional study conducted by Sharma, Pratap, Bharti, Sharma, Soni ,Dubey[17] in 2021 (N=130) to assess the mental health status among the family members of covid-19 patients in Jabalpur district, Madhya Pradesh. The mean age was (47.4 ± 12.5) years ranged between 45-59 years and (58%) belonged to urban area.

In a similar study conducted by Khubchandani, Sharma, Web, Wiblishauser, Sharma[17] in 2021(N=2797) to assess the psychological impact of covid-19 infection among family and friends in united states. out of 2797 participants 50% belonged to age group (26-35) years, 60% were males and 40% were females, 48%% were graduate.

In an exploratory qualitative study conducted by Chen, Wittenberg, sullivan, Lorenz, chang[18]in 2020 (n=10) to assess the psychological impact of covid-19 infection among family and friends in academic tertiary hospital in Buffalo , New York, United States. Out of 10 participants, the mean age was (50.8±14.4) years, 50% were having high school educational status and 40% having household income between $30,000-50,000 and 30% were the child and spouse of patients.

In a comparative study conducted by Rady, Mouloukheya, Gamal[19] in 2021 (N=140) to assess the prevalence of PTSD symptoms, quality of life (QoL), and stress burden in caregivers of patients with severe mental illness in health facilities at Alexandria University hospitals, Egypt. In caregivers of mental illness patients out of 70 participants ,the mean age was (46.06 ±9.55) years,

7.3. Based on the objectives the findings of the present study are discussed as

Objective 1: To assess the post-traumatic stress disorder (PTSD) symptoms among care takers of covid-19 patients.

Results of the study showed that, mean score of PTSD symptoms of study subjects (care takers of covid-19) was (45.0±4.92). Thus, study concluded that majority of subjects (93.3%) had complicated PTSD whereas (6.7%) had diagnostic PTSD and none of the study subjects had partial PTSD.

7.4. These findings of the present study were consistent with the findings of the following studies

In a prospective, cohort study conducted by Amass, Scoy, Hua, Ambler, Armstrong, Baldwin, et al.[16] in 2022 (N=330) to assess the prevalence of symptoms of stress related disorders in family members of patients admitted to the intensive care unit with covid-19 in 8 academic affiliated and 4 community based hospitals in 5 US states. The results revealed that the mean score was (11.9±6.1) and majority (63.6%) had symptoms of PTSD.

In a cross-sectional study conducted by Caillet, Coste, Sanchez, Allaouchiche[20] in 2020 (N=200) to assess the psychological impact of covid-19 on the caregivers in the 5 ICUs of French hospital in France. The results showed that majority (27%) had PTSD symptoms.

Objective 2: To assess the post-traumatic stress disorder (PTSD) symptoms among care takers of non covid-19 patients.

Results of the study showed that, the mean score of PTSD symptoms of study subjects (care takers of non covid-19) was (31.3±10.4). Thus, study concluded that the majority of subjects (96.7%) had partial PTSD whereas (26.7%) had complicated PTSD, (13.3%) had diagnostic PTSD, (23.3%) of the study subjects had no PTSD.

7.5. These findings of the present study were consistent with the findings of the following studies

In a comparative study conducted by Rady, Mouloukheya, Gamal[19] in 2021 (N=140) to assess the prevalence of PTSD symptoms, quality of life (QoL), and stress burden in caregivers of patients with severe mental illness in health facilities at Alexandria University hospitals, Egypt . The results showed that 37.14% caregivers of patients with severe mental illness showed PTSD symptoms.

Objective 3: To compare the post-traumatic stress disorder symptoms of care takers of covid-19 patients with care takers of non-covid-19 patients.

Results of the study showed that, mean PTSD symptom scores (45.0±4.92) of the study subjects (care takers of covid-19) was significantly higher than that of the mean PTSD symptom scores of study subjects (care takers of non covid-19) (31.33±10.47) with mean difference of 13.67.

7.6. These findings of the present study were consistent with the findings of the following studies

In a prospective cohort study conducted by Azoulay, Rigon, Megarbane, Reuter, Labbé, Cariou et al.[21] in 2020 (N=602) to assess the association between patient hospitalization for covid-19 ARDS and non-covid-19 ARDS and the risk of post- traumatic stress disorder (PTSD) related symptoms in family members in 23 intensive care units in France. The results revealed that family members of patients with covid-19 ARDS had a significantly higher prevalence of symptoms of PTSD i.e.35% as compared to non covid -19 ARDS i.e. 19%.

Objective 4: To determine association between post-traumatic stress disorder (PTSD) symptoms of care takers of covid-19 and selected demographic variables (i.e. age, gender, place of residence ,total family income per month in rupees, total number of family members, educational status, relationship with the patient).

The data presented in this study showed that there was no significant association between the PTSD symptom scores of study subjects (care takers of covid-19) and demographic variables like age (p=0.522), gender (p=232) ,residence (p=0.338), total family income (p=0.492), total number of family members (p=0.687), educational status(p=0.723), relationship with the patient(p=0.637).

7.7. These findings of the present study were consistent with the findings of the following studies

In a cross-sectional study conducted by Caillet, Coste, Sanchez, Allaouchiche[20] in 2020 (N=200) to assess the psychological impact of covid-19 on the caregivers in the 5 ICUs of French hospital in France. The result showed that 27% had PTSD symptoms. There was no significant association between gender and PTSD symptoms of care takers of covid-19.

Objective 5: To determine association between post-traumatic stress disorder (PTSD) symptoms of care takers of non covid-19 and selected demographic variables(i.e. age, gender, place of residence, total family income per month in rupees, total number of family members, educational status, relationship with the patient).

The data presented in this study showed that there was no significant association between the PTSD symptom scores of study subjects (care takers of non covid-19)and demographic variables like age (p=0.213), gender (p=0.828), place of domicile (p=0.839) ,total family income (p=0.271), total number of family members (p=0.618), educational status(p=0.647), relationship with the patient(p=0.338).

7.8. These findings of the present study were consistent with the findings of the following studies

In a comparative study conducted by Rady, Mouloukheya , Gamal[19] in 2021 (N=140) to assess the prevalence of PTSD symptoms, quality of life (QoL), and stress burden in caregivers of patients with severe mental illness in health facilities at Alexandria University hospitals, Egypt . The results showed that 37.14% of caregivers of patients with severe mental illness showed PTSD symptoms. There was no significant association between gender (p=0.716) and PTSD symptoms of care takers of non covid-19.

8. Conclusion

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

1. The study concluded that the care takers of COVID-19 patients were found to have higher levels of post traumatic stress disorder symptoms than the care takers of non COVID-19 patients. This indicates that the COVID-19 had more psychological impact on the care takers than any other disease conditions. So there is need to improve the strategies to reduce the risk of developing PTSD symptoms in this group of population.
2. There is further need to identify the long term effects of COVID-19 on the family members of COVID-19 patients and improve the strategies of interventions for improving the mental health of the said population.
3. Interventions need to be developed and implemented such as counseling, mental health awareness program, psychosocial therapy, support group, self care strategies and stress management techniques for early detection and management of mental health problems.
4. Due care needs to be taken to erase the stigma associated with the disease, racism, religious propaganda and psychosocial impact and needs to be implemented by regular discussion with trained and specialist health care personnel.

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10. Conflict of Interest

There are no conflicts of interest.

References

1. Zhou P, Yang XL, Wang XG, Hu B, Zhang L, Zhang W. A pneumonia outbreak associated with a new coronavirus of probable bat origin. *Nature*. 2020;579(7798):270–3.

2. Guo YR, Cao QD, Hong ZS, Tan YY, Chen SD, Jin HJ. The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak - anupdate on the status. *Mil Med Res*. 2020;7(1):11. doi:10.1186/s40779-020-00240-0.
3. Hong S, Kim H, Park MK. Impact of COVID-19 on post-traumatic stress symptoms in the general population: An integrative review. *Int J Ment Health Nurs*. 2021;30(4):834–46.
4. Pung R, Chiew CJ, Young BE, Chin S, Chen MI, Clapham HE. Investigation of three clusters of COVID-19 in Singapore: implications for surveillance and response measures. *Lancet*. 2020;395(10229):1039–46.
5. Aneela M. COVID-19 pandemic and social media: The Swedish case. *Digitala Vetenskapliga Arkivet*. 2019;p. 1–44.
6. Chew N, Lee G, Tan B, Jing M, Goh Y, Ngiam N. A multinational, multicentre study on the psychological outcomes and associated physical symptoms amongst healthcare workers during COVID-19 outbreak. *Brain Behav Immun*. 2020;88:559–65. doi:10.1016/j.bbi.2020.04.049.
7. Serafini G, Parmigiani B, Amerio A, Aguglia A, Sher L, Amore M. The psychological impact of COVID-19 on the mental health in the general population. *QJM*. 2020;113(8):531–7.
8. Laurent A, Capellier G. What Does Occupational Stress in Intensive Care Units Really Mean?". *Méd Intensive Réanimation*. 2018;27(1):75–9.
9. Riello M, Purgato M, Bove C, Mactaggart D, Rusconi E. Prevalence of post-traumatic symptomatology and anxiety among residential nursing and care home workers following the first COVID-19 outbreak in Northern Italy. *R Soc Open Sci*. 2020;7(9):7540798. doi:10.1098/rsos.200880.
10. Bisson JI, Robert NP, Andrew M, Cooper R, Lewis C. Psychological therapies for chronic post-traumatic stress disorder (PTSD) in adults. *Cochrane Database Syst Rev*. 2013;12:CD003388. doi:10.1002/14651858.CD003388.pub4.
11. Wu T, Jia X, Shi H, Niu J, Yin X, Xie J. Prevalence of mental health problems during the COVID-19 pandemic :A systematic review and meta analysis. *J Affect Disord*. 2020;281:91–8. doi:10.1016/j.jad.2020.11.117.
12. Leng M, Wei L, Shi X, Cao G, Wei Y, Xu H. Mental distress and infuencing factors in nurses caring for patients with COVID-19. *Nurs Crit Care*. 2020;26(2):94–101.
13. Kira IA, Shuwiekh H, Ashby JS, Elwakeel SA, Alhuwailah A, Sous M. The Impact of COVID-19 Traumatic Stressors on Mental Health: Is COVID-19 a New Trauma Type. *Int J Ment Health Addict*. 2021;21(1):1–70.
14. Iribarren J, Prolo P, Neagos N, Chiappelli F. Post-traumatic stress disorder: evidence-based research for the third millennium. *Evid Based Complement Alternat Med*. 2005;2(4):503–15.
15. Posttraumatic stress disorder. In: Diagnostic and Statistical Manual of Mental Disorders DSM-5. American Psychiatric Association; 2016. doi:10.1176/appi.books.9780890425596.
16. Cahill SP, Pontoski K. Post-traumatic stress disorder and acute stress disorder I: their nature and assessment considerations. *Psychiatry (Edgmont)*. 2005;2(4):14–25.
17. Sharma A, Singh TP, Bharti A, Sharma R, Soni D, Dubey P. Mental health status among the family members of COVID-19 patients in Jabalpur District Madhya Pradesh: A Cross-sectional study. *J Prim Care Spec*. 2020;1(1):8–12.
18. Khubchandani J, Sharma S, Webb FJ, Wiblishauser MJ, Sharma M. COVID-19 Infectionamong Family and Friends: The Psychological Impact on NonInfected Persons. *Brain Sci*. 2020;12(9):8–12.
19. Chen C, Wittenberg E, Sullivan SS, Lorenz RA, Chang YP. The Experiences of Family Members of Ventilated COVID-19 Patients in the Intensive Care Unit: A Qualitative Study. *Am J Hospice and Palliative Medic*. 2021;38(7):869–76.
20. Rady A, Mouloukheya T, Gamal E. Posttraumatic Stress Symptoms, Quality of Life, and Stress Burden in Caregivers of Patients With Severe Mental Illness: An Underestimated Health Concern. *Front Psychiatry*. 2021;12(9):1123. doi:10.3390/brainsci12091123.
21. Caillet A, Coste C, Sanchez R, Allaouchiche B. Psychological Impact of COVID-19 on ICU Caregivers. *Anaesth Crit Care Pain Med*. 2020;39(6):717–22.

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