



A Comparative Study of Psychological Stress and Impact on Quality of Life of Health Care Workers Dealing with the Covid Positive Patients and the Family Members of the COVID Positive Patients During Covid-19 Pandemic.

Sumanjeet Kaur¹, Priya Kaur², Neeru Bala³, Manmeet Kaur Sodhi⁴, Hira Lal^{5*}

¹Assistant Professor, Department of Psychiatry, GMC Amritsar, Punjab, India.

Email: dr.suman@hotmail.com

Orcid ID: 0000-0002-2775-7471

²Junior Resident, Department of Psychiatry, GMC Amritsar, Punjab, India.

Orcid ID: 0000-0002-3640-4520,

Email: 29priya.kaur94@gmail.com

³Associate Professor and Head, Department of Psychiatry, GMC Amritsar, Punjab, India.

Email: jpneeru15@gmail.com

Orcid ID: 0000-0002-8526-953X

⁴Professor and Head, Department of Pediatrics, GMC Amritsar, Punjab, India.

Email: doctor.manmeet@yahoo.com

Orcid ID: 0000-0003-0213-2675,

⁵Assistant Professor, Department of Pediatrics, GMC Amritsar, Punjab, India.

Email: dockhullar@msn.com,

Orcid ID: 0000-0003-1580-8048

* Corresponding author

Received: 29 May 2021

Revised: 21 July 2021

Accepted: 30 July 2021

Published: 21 August 2021

Abstract

Background: COVID-19 pandemic not only threatens physical health but also has psychological impact on the health care workers and the family members of these patients, influencing their mental health and affecting their quality of life. **Objective:** The present study is conducted to study and compare the psychological stress and impact on quality of life of the healthcare workers and family members of the COVID-19 patients during the Pandemic. **Methods and Materials:** A cross sectional study where DASS-21 (Depression Anxiety and Stress scale-21) was applied to study psychological stress in terms of depression, anxiety and stress and WHOQOL-BREF scale was applied on all the health care workers and family members of the COVID positive patients to study the impact on their quality of life. **Results:** Results suggests that there is a significant difference among Depression, Anxiety and Stress across age, gender, area of working and hours of working of the healthcare workers, education and employment status of the family members. Maximum health care workers suffering from psychological stress were female resident doctors of age group 26-30 years working in COVID isolation wards. On the other hand maximum depression, anxiety and stress was found in family members of age group 26-35 years, male gender, self employed, earning less than 5000 rupees in a month and living in urban areas. Impact on the quality of life was more on the resident doctors having long duty hours and the ones working in COVID isolation wards. Quality of life was influenced more of the family members whose patients were admitted for a longer duration in the hospitals and whose patients did not survive COVID-19 infection. **Conclusion:** It is evident that there are a high number of healthcare workers and the family members of the positive patients, affected by various psychological ailments such as anxiety, stress, and depression and having an impact on their quality of life. It is important that the government should take steps to ensure that HCPs' mental health is regularly checked and that efforts are made to reduce their burden and also physical and virtual counselling sessions can be introduced for the relatives of these patients to reduce their apprehension and psychological stress. Introducing a post covid care clinic in hospitals can be undertaken which will help to reduce this psychological impact and mental health burden.

Keywords: Covid, Healthcare workers, Psychological stress, Family members, Quality of life.

INTRODUCTION

Covid-19 pandemic has created havoc worldwide. India is facing a challenging situation as the number of infected cases is increasing with each passing day. This disease which started as an epidemic initially mainly limited to China was declared as a pandemic on 11th March 2020 by the WHO.^[1] COVID-19 not only threatens physical health but also put psychological impact especially in terms of cognition and emotions. People are likely to have negative emotions and tend to develop avoidant behaviors.^[2] As the coronavirus pandemic sweeps across the whole world, it is causing widespread havoc, concern, fear and stress, all of which are natural and normal reactions to this changing and uncertain situation that everyone finds themselves in.^[3]

The ever-increasing number of confirmed and suspected cases, overwhelming workload, quality and quantity concerns of personal protection equipment, lack of specific drugs, widespread media coverage, and feelings of being inadequately supported may all contribute to the mental burden of these health care workers.^[4] Due to the increased risk of exposure to the virus, our front-line healthcare workers fear that they may contract COVID-19 themselves or passing it on to their loved ones. Patients with previous mental health conditions have been reporting relapses in their illness. The shutting down of schools and the restriction of outdoor activities alongside their parents' fears of contamination have been creating anxiety, panic attacks and psychosomatic symptoms in children.^[5]

A study was conducted in Uttar Pradesh, India among 1500 subjects with the aim of

exploring the impact of Covid-19 and lockdown on the mental health of individuals. DASS-21 was used which revealed that Covid-19 is creating psychological distress among the individuals, as there are restrictions due to lockdown people are forced to stay home.^[1]

A study was conducted in Singapore to examine the psychological distress, depression, anxiety, and stress experienced by health care worker in the midst of the outbreak, and compared these between medically and non-medically trained hospital personnel. DASS-21 and the Impact of Events Scale-Revised (IES-R) instruments were used. Out of 470 subjects, participants were screened positive for anxiety, depression, stress, and for clinical concern of PTSD. The prevalence of anxiety was higher among non-medical health care workers than medical personnel. Higher mean DASS-21 anxiety and stress subscale scores and higher IES-R total and subscale scores were observed in non-medical health care workers.^[6]

An online survey was conducted to investigate anxiety, stress, and depression levels of physicians during the Covid-19 outbreak using Depression Anxiety and Stress Scale-21 (DAS-21). Higher DAS-21 total scores was found in frontline workers with increased weekly working hours, more number of Covid-19 patients cared for, lower logistic support, lower level of support from supervisors, and lower feelings of competence.^[7]

A cross-sectional study was conducted in Karachi, Pakistan on all HCPs posted in the COVID-19 isolation ward and a total of 112 completed this study. DASS-21 was used and the results showed that there were 81

(72.3%) participants who suffered from moderate to extremely severe depression, 96 (85.7%) participants who suffered from moderate to extremely severe anxiety, and 101 (90.1%) participants who reported moderate to extreme stress levels.^[8]

A study was conducted using snowball sampling techniques to survey in China to understand the levels of psychological impact, anxiety, depression, and stress during the initial stage of the COVID-19 outbreak. Mental health status was assessed by the Depression, Anxiety and Stress Scale (DASS-21) and psychological impact was assessed by the Impact of Event Scale-Revised (IES-R). More than half of the respondents rated the psychological impact as moderate-to-severe, and about one-third reported moderate-to-severe anxiety.^[9]

The present study was conducted to study and compare the psychological stress and impact on quality of life of on the Healthcare workers dealing with the positive patients and the family members of the positive patients admitted in the Guru Nanak Dev Hospital, Amritsar, Punjab during COVID pandemic. This study will further benefit to apply an appropriate mental health intervention with appropriate psychosocial interventions during this situation by the Psychiatrists and the Psychologists and will help the government to formulate some policies and support systems in order to maintain mental health of the patients, their family members, communities and the Health Care workers.

METHODS AND MATERIALS

The present study Cross Sectional in type was conducted in Guru Nanak Dev Hospital, Amritsar over a period of 3 months on 100 Health Care workers dealing with COVID positive patients and 100 family members of

these patients. Health Care workers (Consultants, Senior Residents, Junior Residents, Staff nurses, Lab technicians) working in the hospital and dealing with the COVID positive patients were included in the study after fulfilling the inclusion criteria and an informed consent was taken from them. Similarly 100 Family members of 100 COVID positive patients were included in the study after fulfilling the inclusion criteria and an informed consent (in person/telephonically-keeping in view the prevailing conditions due to lockdown) to participate in the study.

For the Health Care Worker:

Inclusion Criteria

1. Health Care workers in direct contact of the patients (Doctors and the Nurses).
2. Health Care workers dealing with the blood samples, nasal swabs, body fluids of the patients (concerned doctors and the lab technicians).
3. Health Care workers having duty in COVID 19 ward/ work related to COVID 19 at least since 2 weeks.
4. Health Care workers willing and given the informed consent.

Exclusion Criteria

1. Health Care workers suffering from some past psychiatric illness.
2. Health Care workers suffering from some serious medical/ physical illness.
3. Health Care workers suffering from some neurological illness.
4. Health Care workers not willing and not given the informed consent.

For the Family Members of the Patients:

Inclusion Criteria

1. Blood relatives i.e. first degree relatives / spouse of the COVID positive patients admitted in the COVID isolation wards in GNDH, Amritsar diagnosed at least 2 weeks back.
2. Age 18 and above of both the sexes.
3. Family members willing to take part in the study and have given the informed consent (telephonically or in person).

Exclusion Criteria

1. Blood relatives/spouse who do not stay with the patient in the same house.
2. Family members not willing to take part in the study and does not give informed consent (telephonically or in person).
3. Family members suffering from some psychiatric illness in past.
4. Family members suffering from some severe medical/physical illness.
5. Family members having language barrier.

Precise aim of the interview, nature of the study was explained in vernacular language to all the enrolled Health Care Workers and Family members of the COVID positive patients and they were reassured about the confidentiality of the information given by them. A self-designed socio- demographic profile proforma was applied to the COVID positive patients, the Family Member of these patients and the Health Care Workers dealing with COVID positive patients included in the study.

Depression, Anxiety and Stress Scale (DASS-21 Scale) was applied on all the Health Care workers and the family members of the COVID positive patients admitted in GNDH, in order to find the psychological stress of

COVID Pandemic on them in the form of depression, anxiety and stress. Impact on Quality of Life of the Health Care Workers dealing with the COVID positive patients and the family members of the COVID positive patients during COVID pandemic was assessed by applying WHOQoL-BREF Scale. A comparison of psychological stress in terms of depression, anxiety and stress and the impact on Quality of Life was done in between the Health Care Workers dealing with the COVID positive patients and the family members of the COVID positive patients admitted in the GNDH during COVID Pandemic. Data interpreted was analysed through Standard statistical methods.

Instruments Used:

1. Self-designed Socio-demographic profile of the COVID positive patient.
2. Self-designed Socio-demographic profile of the family member of the COVID positive patient.
3. Self-designed Socio-demographic profile of the Health Care worker dealing with COVID positive patient.
4. Depression Anxiety Stress Scale (DASS-21)^[10]

Depression, Anxiety and Stress Scale- 21 items (DASS-21) is set of three self-report scales designed to measure the emotional states of depression, anxiety and stress. Each of three DASS-21 scale contains 7 items, which are divided into subscales with similar content. The depression scale assesses dysphoria, hopelessness, devaluation, lack of interest/involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect.

The stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal and being easily upset/agitated, irritable/over-reactive and impatient. Scores of depression, anxiety and stress as calculated by summing the scores for relevant items.

RESULTS

Out of 100 Health Care Workers dealing with COVID positive patients, majority of them belonged to age group 21-30 years (82%) and 31-40 years (16%). Maximum (54%) of them belonged to female gender followed by male gender (45%). Majority (75%) were unmarried. Maximum of the family members of the COVID positive patients who took part in the study belonged to 26-40 years (56%) and 41-50 years (20%) age group. Among these maximum (69%) belonged to male gender, followed by 31% female gender. Maximum (82%) were married 82% followed by unmarried group (18%). Maximum Health Care workers and the family members of the COVID positive patients, belonged to Hindu religion, 61% and 63% and Sikh religion, 38% and 36% respectively. Majority of the Health Care workers and the family members, belonged to Nuclear family set up (87% and 54% respectively) and rest were from the joint families. Out of 100 health care workers and family members who took part in the study, 2% and 7% respectively were suffering from some or the other physical or medical illness in past. 11% of the family members of the COVID positive patients were abusing one or the other substance on daily or occasional basis (Table 1).

5. Who Qol-Bref Scale^[11]

An abbreviated 26- item version (WHOQOL-BREF) has been used in various studies to evaluate perceptions of health. This questionnaire has been found to be a affective cross-sectional assessment of quality of life with good to excellent psychometric properties of reliability and validity. The WHOQOL-BREF consists of 4 domains, Physical Health, Psychological, Social Relationships and Environment. Each domain is comprised of multiple questions that are considered together in the derivation of each domain score. It also includes two stand-alone questions to assess rated QOL and satisfaction with health.

6. Proforma of informed consent of the family member of the COVID positive patient (in person/telephonic).

7. Proforma of informed consent of the Health Care Worker dealing with COVID positive patient.

Table 1

			Group		Total
			Health Care workers	Family members	
Age group	15-20yrs	Count	0	4	4
		% within Group	.0%	4.0%	2.0%
	21-25yrs	Count	26	8	34
		% within Group	26.0%	8.0%	17.0%
	26-30yrs	Count	56	20	76



		% within Group	56.0%	20.0%	38.0%
	31-35yrs	Count	11	20	31
		% within Group	11.0%	20.0%	15.5%
	36-40yrs	Count	5	16	21
		% within Group	5.0%	16.0%	10.5%
	41-45yrs	Count	1	7	8
		% within Group	1.0%	7.0%	4.0%
	46-50yrs	Count	0	13	13
		% within Group	.0%	13.0%	6.5%
	51-55yrs	Count	1	4	5
		% within Group	1.0%	4.0%	2.5%
	>55yrs	Count	0	8	8
		% within Group	.0%	8.0%	4.0%
Gender	Male	Count	45	69	114
		% within Group	45.0%	69.0%	57.0%
	Female	Count	54	31	85
		% within Group	54.0%	31.0%	42.5%
	Others	Count	1	0	1
		% within Group	1.0%	.0%	.5%
Religion	Sikh	Count	38	36	74
		% within Group	38.0%	36.0%	37.0%
	Hindu	Count	61	63	124
		% within Group	61.0%	63.0%	62.0%
	Others	Count	1	1	2
		% within Group	1.0%	1.0%	1.0%
Marital Status	Married	Count	24	82	106
		% within Group	24.0%	82.0%	53.0%
	Unmarried	Count	75	18	93
		% within Group	75.0%	18.0%	46.5%
	Divorced	Count	1	0	1
		% within Group	1.0%	.0%	.5%
Family type	Nuclear	Count	87	54	141
		% within Group	87.0%	54.0%	70.5%
	Joint	Count	12	46	58
		% within Group	12.0%	46.0%	29.0%
	Others	Count	1	0	1
		% within Group	1.0%	.0%	.5%
History of psychiatric illness	Yes	Count	1	1	2
		% within Group	1.0%	1.0%	1.0%
	No	Count	99	99	198
		% within Group	99.0%	99.0%	99.0%
History of Medical/Physical	Yes	Count	2	7	9
		% within Group	2.0%	7.0%	4.5%



illness	No	Count	98	93	191
		% within Group	98.0%	93.0%	95.5%
History of Substance Abuse	Yes	Count	0	11	11
		% within Group	.0%	11.0%	5.5%
	No	Count	100	89	189
		% within Group	100.0%	89.0%	94.5%

Out of the 100 Health care workers dealing with COVID positive patients who took part in the study, 74% were the Resident doctors, 20% were the MBBS graduate doctors posted for their internship at the GNDH and rest of the percentage constituted of the senior consultants, staff nurses and the other non-medical personals. Maximum were posted in the COVID Isolation wards (40%) followed by general wards (29%), emergency services

(16%), and rest were posted in flu corner/fever clinic, general OPD and ICU/CCU.52% had a working hour shift of 6-12hrs, 25% had a shift of more than 12hours and 23% of the health Care workers had a working hour shift of less than 6 hours. Maximum of the Health Care workers (59%) resided in hostels provided by the college authorities, 25% had self-residence and 16 % stayed in rented apartments(Table 2).

Table 2

Job profile	Intern	Count	20	20	
		% within Group	20.0%	20.0%	
	Resident	Count	74	74	
		% within Group	74.0%	74.0%	
	Consultant	Count	2	2	
		% within Group	2.0%	2.0%	
	Nurses	Count	3	3	
		% within Group	3.0%	3.0%	
	Others	Count	1	1	
		% within Group	1.0%	1.0%	
	Working Area	COVID Isolation ward	Count	40	40
			% within Group	40.0%	40.0%
Flu corner		Count	6	6	
		% within Group	6.0%	6.0%	
Emergency		Count	16	16	
		% within Group	16.0%	16.0%	
ICU/CCU		Count	4	4	
		% within Group	4.0%	4.0%	
General OPD		Count	5	5	
		% within Group	5.0%	5.0%	
General Ward		Count	29	29	
		% within Group	29.0%	29.0%	
Duty hours	<6hrs	Count	23	23	

		% within Group	23.0%	23.0%
	6-12hrs	Count	52	52
		% within Group	52.0%	52.0%
	>12hrs	Count	25	25
		% within Group	25.0%	25.0%
Accommodation	Self Residence	Count	25	25
		% within Group	25.0%	25.0%
	Rented House	Count	16	16
		% within Group	16.0%	16.0%
	Hostel	Count	59	59
		% within Group	59.0%	59.0%

Maximum (57%) of the family members of the COVID positive patients were educated till higher secondary level, 25% had completed their graduation. 27% were self-employed, 24% of the family members interviewed were the housewives, 13% were employed in some or the other occupation, 11% were unemployed, 5% were the students and 20% belonged to others. 38% had a

monthly income of less than 5,000 rupees, 37% had a monthly income of more than 10,000 rupees and rest of the participants had monthly income between 5,000 and 10,000 rupees. Maximum (77%) of the family members of the COVID positive patients had their residence in urban areas and 33% stayed in rural areas (Table 3).

Table 3

			Group Family members	Total
Education	Illiterate	Count	1	1
		% within Group	1.0%	1.0%
	Can read and write	Count	2	2
		% within Group	2.0%	2.0%
	Primary/upto 5 th	Count	4	4
		% within Group	4.0%	4.0%
	Middle/upto 8 th	Count	7	7
		% within Group	7.0%	7.0%
	Higher/upto10/12	Count	57	57
		% within Group	57.0%	57.0%
	Graduate	Count	25	25
		% within Group	25.0%	25.0%
Post Graduate	Count	4	4	
	% within Group	4.0%	4.0%	
Occupation	Unemployed	Count	11	11
		% within Group	11.0%	11.0%



	Employed	Count	13	13
		% within Group	13.0%	13.0%
	Self employed	Count	27	27
		% within Group	27.0%	27.0%
	Student	Count	5	5
		% within Group	5.0%	5.0%
	Housewife	Count	24	24
		% within Group	24.0%	24.0%
	Others	Count	20	20
		% within Group	20.0%	20.0%
	<5000	Count	38	38
		% within Group	38.0%	38.0%
	5000-10000	Count	25	25
		% within Group	25.0%	25.0%
>10000	Count	37	37	
	% within Group	37.0%	37.0%	
Place of residency	Urban	Count	77	77
		% within Group	77.0%	77.0%
	Rural	Count	23	23
		% within Group	23.0%	23.0%

In all the 100 Health Care workers, it was found that 15% screened positive for Depression, 31 % screened positive for Anxiety and 14% screened positive for Stress. Among the Family Members of the COVID-

19 positive patients, it was found that 52% screened positive for Depression, 50% screened positive for anxiety and 38% screened positive for Stress (Table 4.1, Table 4.2 and Table 4.3).

Table 4.1

			Group		Total
			Health Care workers	Family members	
Depression category	Normal	Count	85	48	133
		% within Group	85.0%	48.0%	66.5%
	Mild	Count	4	13	17
		% within Group	4.0%	13.0%	8.5%
	Moderate	Count	7	32	39
		% within Group	7.0%	32.0%	19.5%
	Severe	Count	3	6	9
		% within Group	3.0%	6.0%	4.5%



	Extremely severe	Count	1	1	2
		% within Group	1.0%	1.0%	1.0%
Total		Count	100	100	200
		% within Group	100.0%	100.0%	100.0%

Table 4.2

			Group		Total	
			Health Care workers	Family members		
Anxiety_category	Normal	Count	69	50	119	
		% within Group	69.0%	50.0%	59.5%	
	Mild	Count	11	14	25	
		% within Group	11.0%	14.0%	12.5%	
	Moderate	Count	11	17	28	
		% within Group	11.0%	17.0%	14.0%	
	Severe	Count	5	12	17	
		% within Group	5.0%	12.0%	8.5%	
	Extremely severe	Count	4	7	11	
		% within Group	4.0%	7.0%	5.5%	
	Total		Count	100	100	200
			% within Group	100.0%	100.0%	100.0%

Table 4.3

			Group		Total	
			Health Care workers	Family members		
Stress_category	Normal	Count	86	62	148	
		% within Group	86.0%	62.0%	74.0%	
	Mild	Count	3	9	12	
		% within Group	3.0%	9.0%	6.0%	
	Moderate	Count	5	17	22	
		% within Group	5.0%	17.0%	11.0%	
	Severe	Count	6	11	17	
		% within Group	6.0%	11.0%	8.5%	
	Extremely Severe	Count	0	1	1	
		% within Group	.0%	1.0%	.5%	
	Total		Count	100	100	200

The results showed that among the Health Care workers dealing with COVID positive patients, maximum Depression was found in

age group 26-30 years(9%) followed by age group 21-25years (3%) in comparison to the Family members of these patients where

maximum Depression was found in age group 26-35 years (20%) followed by the age group 36-40years(7%). Maximum of the

Health Care workers and family members suffered from moderate level of depression (Table 5).

Table 5

Group			Depression_category					Total	
			Normal	Mild	Moderate	3	4		
Health Care workers	Age group	21-25yrs	Count	23	1	1	1	0	26
		% within Age group	88.5%	3.8%	3.8%	3.8%	.0%	100.0%	
	26-30yrs	Count	47	3	3	2	1	56	
		% within Age group	83.9%	5.4%	5.4%	3.6%	1.8%	100.0%	
	31-35yrs	Count	9	0	2	0	0	11	
		% within Age group	81.8%	.0%	18.2%	.0%	.0%	100.0%	
	36-40yrs	Count	5	0	0	0	0	5	
		% within Age group	100.0%	.0%	.0%	.0%	.0%	100.0%	
	41-45yrs	Count	0	0	1	0	0	1	
		% within Age group	.0%	.0%	100.0%	.0%	.0%	100.0%	
	51-55yrs	Count	1	0	0	0	0	1	
		% within Age group	100.0%	.0%	.0%	.0%	.0%	100.0%	
	Total		Count	85	4	7	3	1	100
			% within Age group	85.0%	4.0%	7.0%	3.0%	1.0%	100.0%
Family members	Age group	15-20yrs	Count	2	0	1	1	0	4
		% within Age group	50.0%	.0%	25.0%	25.0%	.0%	100.0%	
	21-25yrs	Count	5	0	3	0	0	8	
		% within Age group	62.5%	.0%	37.5%	.0%	.0%	100.0%	
	26-30yrs	Count	9	3	6	2	0	20	
		% within Age group	45.0%	15.0%	30.0%	10.0%	.0%	100.0%	
	31-35yrs	Count	11	0	8	1	0	20	
		% within Age group	55.0%	.0%	40.0%	5.0%	.0%	100.0%	
	36-40yrs	Count	9	3	3	0	1	16	
		% within Age group	56.3%	18.8%	18.8%	.0%	6.3%	100.0%	



		41-45yrs	Count	0	2	5	0	0	7
			% within Age group	.0%	28.6%	71.4%	.0%	.0%	100.0%
		46-50yrs	Count	5	4	3	1	0	13
			% within Age group	38.5%	30.8%	23.1%	7.7%	.0%	100.0%
		51-55yrs	Count	4	0	0	0	0	4
			% within Age group	100.0%	.0%	.0%	.0%	.0%	100.0%
		>55yrs	Count	3	1	3	1	0	8
			% within Age group	37.5%	12.5%	37.5%	12.5%	.0%	100.0%
		Total	Count	48	13	32	6	1	100
			% within Age group	48.0%	13.0%	32.0%	6.0%	1.0%	100.0%

The results showed that among the Health Care workers maximum Anxiety was found in age group 26-30years(20%) followed by age group 21-25years(5%) in comparison to the family members of the patients where

maximum Anxiety was found in age group 26-35 years (18%) followed by 46-50years (7%). In both the groups maximum subjects suffered from mild to moderate level of anxiety (Table 6)

Table 6

Group			Anxiety_category					Total	
			0	1	2	3	4		
Health Care workers	Age group	21-25yrs	Count	21	2	2	1	0	26
			% within Age group	80.8%	7.7%	7.7%	3.8%	.0%	100.0%
	26-30yrs	Count	36	9	6	1	4	56	
		% within Age group	64.3%	16.1%	10.7%	1.8%	7.1%	100.0%	
	31-35yrs	Count	8	0	1	2	0	11	
		% within Age group	72.7%	.0%	9.1%	18.2%	.0%	100.0%	
	36-40yrs	Count	3	0	2	0	0	5	
		% within Age group	60.0%	.0%	40.0%	.0%	.0%	100.0%	
	41-45yrs	Count	0	0	0	1	0	1	
		% within Age group	.0%	.0%	.0%	100.0%	.0%	100.0%	
	51-55yrs	Count	1	0	0	0	0	1	
		% within	100.0%	.0%	.0%	.0%	.0%	100.0%	



		Age group								
Total		Count		69	11	11	5	4	100	
		% within Age group		69.0%	11.0%	11.0%	5.0%	4.0%	100.0%	
Family members	Age group	15-20yrs	Count		2	0	2	0	0	4
			% within Age group		50.0%	.0%	50.0%	.0%	.0%	100.0%
	21-25yrs	Count		4	2	1	1	0	8	
		% within Age group		50.0%	25.0%	12.5%	12.5%	.0%	100.0%	
	26-30yrs	Count		10	4	4	1	1	20	
		% within Age group		50.0%	20.0%	20.0%	5.0%	5.0%	100.0%	
	31-35yrs	Count		12	2	4	2	0	20	
		% within Age group		60.0%	10.0%	20.0%	10.0%	.0%	100.0%	
	36-40yrs	Count		10	0	1	4	1	16	
		% within Age group		62.5%	.0%	6.3%	25.0%	6.3%	100.0%	
	41-45yrs	Count		0	1	2	2	2	7	
		% within Age group		.0%	14.3%	28.6%	28.6%	28.6%	100.0%	
	46-50yrs	Count		6	3	1	1	2	13	
		% within Age group		46.2%	23.1%	7.7%	7.7%	15.4%	100.0%	
	51-55yrs	Count		4	0	0	0	0	4	
		% within Age group		100.0%	.0%	.0%	.0%	.0%	100.0%	
	>55yrs	Count		2	2	2	1	1	8	
		% within Age group		25.0%	25.0%	25.0%	12.5%	12.5%	100.0%	
Total		Count		50	14	17	12	7	100	
		% within Age group		50.0%	14.0%	17.0%	12.0%	7.0%	100.0%	

The results showed that among the Health Care workers maximum Stress was found in age group 26-30years (9%) followed by 21-25 years(2%) in comparison to the family members of the patients where maximum Stress was found in age group 26-35 years

(17%) followed by the age group 36-40years (5%). It was seen that maximum of the Health Care workers suffered from severe level of stress whereas maximum Family members suffered from moderate level of stress (Table 7)

Table 7

Group			Stress_category					Total
			0	1	2	3	4	
Health Care workers	Age group	21-25yrs	Count	24	0	1	1	26
		% within Age group	92.3%	.0%	3.8%	3.8%	100.0%	
	26-30yrs	Count	47	3	4	2	56	
		% within Age group	83.9%	5.4%	7.1%	3.6%	100.0%	
	31-35yrs	Count	9	0	0	2	11	
		% within Age group	81.8%	.0%	.0%	18.2%	100.0%	
	36-40yrs	Count	5	0	0	0	5	
		% within Age group	100.0%	.0%	.0%	.0%	100.0%	
	41-45yrs	Count	0	0	0	1	1	
		% within Age group	.0%	.0%	.0%	100.0%	100.0%	
	51-55yrs	Count	1	0	0	0	1	
		% within Age group	100.0%	.0%	.0%	.0%	100.0%	
	Total	Count	86	3	5	6	100	
		% within Age group	86.0%	3.0%	5.0%	6.0%	100.0%	
Family members	Age group	15-20yrs	Count	2	0	1	1	4
		% within Age group	50.0%	.0%	25.0%	25.0%	.0%	100.0%
	21-25yrs	Count	5	2	0	1	0	8
		% within Age group	62.5%	25.0%	.0%	12.5%	.0%	100.0%
	26-30yrs	Count	11	1	3	5	0	20
		% within Age group	55.0%	5.0%	15.0%	25.0%	.0%	100.0%
	31-35yrs	Count	12	2	6	0	0	20
		% within Age group	60.0%	10.0%	30.0%	.0%	.0%	100.0%
	36-40yrs	Count	11	0	3	2	0	16
		% within Age group	68.8%	.0%	18.8%	12.5%	.0%	100.0%
41-45yrs	Count	3	1	1	2	0	7	
	% within Age group	42.9%	14.3%	14.3%	28.6%	.0%	100.0%	
46-	Count	9	2	1	0	1	13	



		50yrs	% within Age group	69.2%	15.4%	7.7%	.0%	7.7%	100.0%
		51-55yrs	Count	4	0	0	0	0	4
			% within Age group	100.0%	.0%	.0%	.0%	.0%	100.0%
		>55yrs	Count	5	1	2	0	0	8
			% within Age group	62.5%	12.5%	25.0%	.0%	.0%	100.0%
	Total		Count	62	9	17	11	1	100
			% within Age group	62.0%	9.0%	17.0%	11.0%	1.0%	100.0%

The results showed that among the Health Care workers maximum Depression, Anxiety and Stress was found in female gender which was 11%, 23% and 11% respectively where depression was of moderate intensity, anxiety of mild to moderate intensity and stress of severe intensity. The results showed that

among the Family members maximum Depression, Anxiety and Stress was found in male gender which was 37%, 36% and 28% respectively where all the three parameters were of moderate intensity (table 8.1, table 8.2 and table 8.3)

Table 8.1

Group			Depression_category					Total	
			0	1	2	3	4		
Health Care workers	Gender	Male	Count	41	1	3	0	0	45
			% within Gender	91.1%	2.2%	6.7%	.0%	.0%	100.0%
	Female	Count	43	3	4	3	1	54	
		% within Gender	79.6%	5.6%	7.4%	5.6%	1.9%	100.0%	
	Other	Count	1	0	0	0	0	1	
		% within Gender	100.0%	.0%	.0%	.0%	.0%	100.0%	
	Total	Count	85	4	7	3	1	100	
% within Gender		85.0%	4.0%	7.0%	3.0%	1.0%	100.0%		
Family members	Gender	Male	Count	32	9	24	4	0	69
			% within Gender	46.4%	13.0%	34.8%	5.8%	.0%	100.0%
	Female	Count	16	4	8	2	1	31	
		% within Gender	51.6%	12.9%	25.8%	6.5%	3.2%	100.0%	
	Total	Count	48	13	32	6	1	100	
% within		48.0%	13.0%	32.0%	6.0%	1.0%	100.0%		



			Gender						
Table 8.2									
Group			Anxiety_category					Total	
			0	1	2	3	4		
Health Care workers	Gender	Male	Count	37	2	5	1	0	45
			% within Gender	82.2%	4.4%	11.1%	2.2%	.0%	100.0%
	Female	Count	31	9	6	4	4	54	
		% within Gender	57.4%	16.7%	11.1%	7.4%	7.4%	100.0%	
	Other	Count	1	0	0	0	0	1	
		% within Gender	100.0%	.0%	.0%	.0%	.0%	100.0%	
	Total		Count	69	11	11	5	4	100
			% within Gender	69.0%	11.0%	11.0%	5.0%	4.0%	100.0%
Family members	Gender	Male	Count	33	10	12	11	3	69
			% within Gender	47.8%	14.5%	17.4%	15.9%	4.3%	100.0%
	Female	Count	17	4	5	1	4	31	
		% within Gender	54.8%	12.9%	16.1%	3.2%	12.9%	100.0%	
	Total		Count	50	14	17	12	7	100
			% within Gender	50.0%	14.0%	17.0%	12.0%	7.0%	100.0%

Table 8.3									
Group			Stress_category					Total	
			0	1	2	3	4		
Health Care workers	Gender	Male	Count	42	2	1	0		45
			% within Gender	93.3%	4.4%	2.2%	.0%		100.0%
	Female	Count	43	1	4	6		54	
		% within Gender	79.6%	1.9%	7.4%	11.1%		100.0%	
	Others	Count	1	0	0	0		1	
		% within Gender	100.0%	.0%	.0%	.0%		100.0%	
	Total		Count	86	3	5	6		100
			% within Gender	86.0%	3.0%	5.0%	6.0%		100.0%
Family	Gender	Male	Count	41	7	12	9	0	69



members		% within Gender	59.4%	10.1%	17.4%	13.0%	.0%	100.0%
		Female	Count	21	2	5	2	1
		% within Gender	67.7%	6.5%	16.1%	6.5%	3.2%	100.0%
	Total	Count	62	9	17	11	1	100
		% within Gender	62.0%	9.0%	17.0%	11.0%	1.0%	100.0%

The results showed that among the Health Care workers maximum Depression, Anxiety and Stress was found in unmarried subjects which was 12%, 23% and 11% respectively in comparison to family members where

maximum Depression, anxiety and stress was found in Married subjects which was 46%, 45% and 32% respectively (table 9.1, table 9.2 and table 9.3)

Table 9.1

Group			Depression_category					Total	
			0	1	2	3	4		
Health Care workers	Marital Status	Married	Count	21	0	3	0	0	24
			% within Marital Status	87.5%	.0%	12.5%	.0%	.0%	100.0%
	Unmarried	Count	63	4	4	3	1	75	
		% within Marital Status	84.0%	5.3%	5.3%	4.0%	1.3%	100.0%	
	Divorced	Count	1	0	0	0	0	1	
		% within Marital Status	100.0%	.0%	.0%	.0%	.0%	100.0%	
	Total	Count	85	4	7	3	1	100	
		% within Marital Status	85.0%	4.0%	7.0%	3.0%	1.0%	100.0%	
Family members	Marital Status	Married	Count	36	12	28	5	1	82
			% within Marital Status	43.9%	14.6%	34.1%	6.1%	1.2%	100.0%
	Unmarried	Count	12	1	4	1	0	18	
		% within Marital Status	66.7%	5.6%	22.2%	5.6%	.0%	100.0%	
	Total	Count	48	13	32	6	1	100	
		% within	48.0%	13.0%	32.0%	6.0%	1.0%	100.0%	



		Marital Status						
--	--	----------------	--	--	--	--	--	--

Table 9.2

Group			Anxiety_category					Total		
			0	1	2	3	4			
Health Care workers	Marital Status	Married	Count	16	2	3	3	0	24	
			% within Marital Status	66.7%	8.3%	12.5%	12.5%	.0%	100.0%	
		Unmarried	Count	52	9	8	2	4	75	
			% within Marital Status	69.3%	12.0%	10.7%	2.7%	5.3%	100.0%	
		Divorced	Count	1	0	0	0	0	1	
			% within Marital Status	100.0%	.0%	.0%	.0%	.0%	100.0%	
	Total	Count	69	11	11	5	4	100		
		% within Marital Status	69.0%	11.0%	11.0%	5.0%	4.0%	100.0%		
	Family members	Marital Status	Married	Count	37	14	13	11	7	82
				% within Marital Status	45.1%	17.1%	15.9%	13.4%	8.5%	100.0%
Unmarried			Count	13	0	4	1	0	18	
			% within Marital Status	72.2%	.0%	22.2%	5.6%	.0%	100.0%	
Total		Count	50	14	17	12	7	100		
		% within Marital Status	50.0%	14.0%	17.0%	12.0%	7.0%	100.0%		

Table 9.3

Group			Stress_category					Total	
			0	1	2	3	4		
Health Care workers	Marital Status	Married	Count	21	0	0	3		24
			% within Marital Status	87.5%	.0%	.0%	12.5%		100.0%
		Unmarried	Count	64	3	5	3		75



			% within Marital Status	85.3%	4.0%	6.7%	4.0%		100.0%
		Divorced	Count	1	0	0	0		1
			% within Marital Status	100.0%	.0%	.0%	.0%		100.0%
	Total		Count	86	3	5	6		100
		% within Marital Status	86.0%	3.0%	5.0%	6.0%		100.0%	
Family members	Marital Status	Married	Count	50	7	15	9	1	82
			% within Marital Status	61.0%	8.5%	18.3%	11.0%	1.2%	100.0%
	Unmarried	Count	12	2	2	2	0	18	
		% within Marital Status	66.7%	11.1%	11.1%	11.1%	.0%	100.0%	
	Total	Count	62	9	17	11	1	100	
		% within Marital Status	62.0%	9.0%	17.0%	11.0%	1.0%	100.0%	

The results showed that among the Health Care workers maximum Depression, Anxiety and Stress was found in the subjects belonging to Nuclear families which was 12%, 23% and 10% respectively in comparison to family members where maximum Depression, anxiety and stress was found in subjects belonging to joint families which was 34%, 31% and 21% respectively.

Maximum of the Health Care Workers suffering from Depression, Anxiety and Stress were the Resident Doctors working in GNDH in which these parameters found were 12%, 27% and 12% respectively (table 10.1, table 10.2 and table 10.3).

Table 10.1

Group		Depression_category					Total		
		0	1	2	3	4			
Health Care workers	Job profile	Intern	Count	18	0	1	1	0	20
			% within Job profile	90.0%	.0%	5.0%	5.0%	.0%	100.0%
	Resident	Count	62	4	5	2	1	74	
		% within Job profile	83.8%	5.4%	6.8%	2.7%	1.4%	100.0%	
	Consultant	Count	2	0	0	0	0	2	



			% within Job profile	100.0%	.0%	.0%	.0%	.0%	100.0%
		Nurses	Count	3	0	0	0	0	3
			% within Job profile	100.0%	.0%	.0%	.0%	.0%	100.0%
		Others	Count	0	0	1	0	0	1
			% within Job profile	.0%	.0%	100.0%	.0%	.0%	100.0%
	Total		Count	85	4	7	3	1	100
			% within Job profile	85.0%	4.0%	7.0%	3.0%	1.0%	100.0%

Table 10.2

Group				Anxiety_category					Total	
				0	1	2	3	4		
Health Care workers	Job profile	Intern	Count	18	0	0	1	1	20	
			% within Job profile	90.0%	.0%	.0%	5.0%	5.0%	100.0%	
	Resident	Count	47	11	10	3	3	74		
		% within Job profile	63.5%	14.9%	13.5%	4.1%	4.1%	100.0%		
	Consultant	Count	1	0	1	0	0	2		
		% within Job profile	50.0%	.0%	50.0%	.0%	.0%	100.0%		
	Nurses	Count	3	0	0	0	0	3		
		% within Job profile	100.0%	.0%	.0%	.0%	.0%	100.0%		
	Others	Count	0	0	0	1	0	1		
		% within Job profile	.0%	.0%	.0%	100.0%	.0%	100.0%		
	Total			Count	69	11	11	5	4	100
				% within Job profile	69.0%	11.0%	11.0%	5.0%	4.0%	100.0%

Table 10.3

Group				Stress_category				Total
				0	1	2	3	
Health Care workers	Job profile	Intern	Count	19	0	0	1	20
			% within Job profile	95.0%	.0%	.0%	5.0%	100.0%
	Resident	Count	62	3	5	4	74	
		% within Job profile	83.8%	4.1%	6.8%	5.4%	100.0%	



		Consultant	Count	2	0	0	0	2
			% within Job profile	100.0%	.0%	.0%	.0%	100.0%
		Nurses	Count	3	0	0	0	3
			% within Job profile	100.0%	.0%	.0%	.0%	100.0%
		Others	Count	0	0	0	1	1
			% within Job profile	.0%	.0%	.0%	100.0%	100.0%
		Total	Count	86	3	5	6	100
			% within Job profile	86.0%	3.0%	5.0%	6.0%	100.0%

It was found that maximum Health Care Workers testing positive for Depression, Anxiety and Stress symptoms had duty hours

of 6-12hours (10%, 22% and 10% respectively)(table 11.1, table 11.2 and table 11.3).

Table 11.1

Group			Depression_category					Total
			0	1	2	3	4	
Health Care workers	<6hrs	Count	22	0	0	1	0	23
		% within Duty hours	95.7%	.0%	.0%	4.3%	.0%	100.0%
	6-12hrs	Count	42	2	6	2	0	52
		% within Duty hours	80.8%	3.8%	11.5%	3.8%	.0%	100.0%
	>12hrs	Count	21	2	1	0	1	25
		% within Duty hours	84.0%	8.0%	4.0%	.0%	4.0%	100.0%
	Total	Count	85	4	7	3	1	100
		% within Duty hours	85.0%	4.0%	7.0%	3.0%	1.0%	100.0%

Table 11.2

Group			Anxiety_category					Total
			0	1	2	3	4	
Health Care workers	<6hrs	Count	21	0	1	0	1	23
		% within Duty hours	91.3%	.0%	4.3%	.0%	4.3%	100.0%
	6-12hrs	Count	30	7	8	5	2	52
		% within Duty hours	57.7%	13.5%	15.4%	9.6%	3.8%	100.0%
	>12hrs	Count	18	4	2	0	1	25
		% within Duty hours	84.0%	8.0%	4.0%	.0%	4.0%	100.0%



		% within Duty hours	72.0%	16.0%	8.0%	.0%	4.0%	100.0%
	Total	Count	69	11	11	5	4	100
		% within Duty hours	69.0%	11.0%	11.0%	5.0%	4.0%	100.0%

Table 11.3

Group			Stress_category				Total
			0	1	2	3	
Health Care workers	<6hrs	Count	22	0	0	1	23
		% within Duty hours	95.7%	.0%	.0%	4.3%	100.0%
	6-12hrs	Count	42	2	4	4	52
		% within Duty hours	80.8%	3.8%	7.7%	7.7%	100.0%
	>12hrs	Count	22	1	1	1	25
		% within Duty hours	88.0%	4.0%	4.0%	4.0%	100.0%
	Total	Count	86	3	5	6	100
		% within Duty hours	86.0%	3.0%	5.0%	6.0%	100.0%

Maximum of the Health Care Workers suffering from Depression, Anxiety and Stress were working in COVID Isolation wards(12%, 19% and 13% respectively) followed by general Ward (3%, 6% and 1% respectively). Maximum of the Health care workers suffering from Depression, Anxiety and Stress were staying in hostel accommodation provided by the Medical College authorities in which the calculated depression, anxiety and stress were 11%, 20% and 10% respectively. Maximum percentage of depression, anxiety and stress was found in family members completed their education till higher secondary level which was 19%(moderate degree of depression), 18%(mod-severe degree of anxiety) and 13%(moderate degree of stress). Maximum percentage of depression(11%), anxiety(6%) and stress(6%), all being of moderate degree, was found in family members who were self employed. Maximum depression(25%), anxiety(14%) and stress(11%) were found in

family members staying in urban region which was of moderate degree.

99% of the Healthcare workers and the Family members of the COVID positive patients were not suffering from any previous Psychiatric illness out of which 14%, 30% and 13% of the Health Care workers suffered from Depression, Anxiety and Stress respectively and 52%, 50% and 38% of the family members suffered from Depression, Anxiety and Stress respectively.

Out of the Health care workers who took part in the study, 98% of the subjects were not suffering from any previous medical or physical illness, out of which Depression, Anxiety and Stress were found in 14%, 30% and 13% respectively. In comparison, 93% of the Family members were not suffering from any previous medical or physical illness, out of which Depression, Anxiety and Stress was found in 48%, 47% and 36% respectively.

None of the Health care workers who took part in the study had history of any substance abuse, out of which Depression, Anxiety and Stress were found in 15%, 30% and 13% respectively. In comparison, 89% of the Family members had no history of substance abuse, out of which Depression, Anxiety and Stress was found in 44%, 42% and 32% respectively.

The study concluded that as far as Question 1 of WHOQol-BREF scale is concerned which

asks about individual's overall perception of quality of life, maximum of the Health care workers(54%) dealing with COVID patients said that their quality of life was good and around 35% of the family members said that their overall perception of Quality of life was very good and 21% of the family members of the COVID positive patients who took part in the study said that their quality of life was poor(table 12).

Table 12

		Group			Total
		Health Care workers	Family members		
Question-1	1	Count	6	5	11
		% within Group	6.0%	5.0%	5.5%
	2	Count	4	21	25
		% within Group	4.0%	21.0%	12.5%
	3	Count	6	19	25
		% within Group	6.0%	19.0%	12.5%
	4	Count	54	20	74
		% within Group	54.0%	20.0%	37.0%
5	Count	30	35	65	
	% within Group	30.0%	35.0%	32.5%	
Total		Count	100	100	200
		% within Group	100.0%	100.0%	100.0%

The following table shows the Question 2 of WHO-Qol-BREF scale which asks about individual's overall perception of their health, concluded that maximum(40%) of the health Care workers dealing with COVID positive patients were satisfied with their health followed by 32% of the health care

workers who were neither satisfied nor dissatisfied. Similarly around 54% of the family members of the COVID positive patients were satisfied with their overall health followed by 27% who were neither satisfied nor dissatisfied(Table 13)

Table 13

		Group		Total
		Health Care workers	Family members	



Question-2	1	Count	6	0	6
		% within Group	6.0%	.0%	3.0%
	2	Count	0	14	14
		% within Group	.0%	14.0%	7.0%
	3	Count	32	27	59
		% within Group	32.0%	27.0%	29.5%
	4	Count	40	54	94
		% within Group	40.0%	54.0%	47.0%
	5	Count	22	5	27
		% within Group	22.0%	5.0%	13.5%
Total	Count	100	100	200	
	% within Group	100.0%	100.0%	100.0%	

The following table shows the distribution of mean scores on WHO QOL-BREF scale between the health care workers and the family members. The mean score of the health care workers on physical domain, psychological domain, social domain, and

environmental domain were 53.52 ± 15.43 , 55.10 ± 16.67 , 55.52 ± 20.45 and 77.68 ± 19.39 and for the family members were 49.50 ± 10.98 , 59.98 ± 16.11 , 71.31 ± 16.21 and 54.36 ± 16.52 . (Table 14).

Table 14

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Age	Health Care workers	100	28.10	4.919	.492	27.12	29.08	22	54
	Family members	100	37.93	11.927	1.193	35.56	40.30	16	72
	Total	200	33.02	10.348	.732	31.57	34.46	16	72
Depression	Health Care workers	100	1.93	3.229	.323	1.29	2.57	0	14
	Family members	100	5.01	4.041	.404	4.21	5.81	0	14
	Total	200	3.47	3.962	.280	2.92	4.02	0	14
Anxiety	Health Care workers	100	2.73	3.136	.314	2.11	3.35	0	15
	Family	100	4.10	3.404	.340	3.42	4.78	0	13



	members								
	Total	200	3.42	3.336	.236	2.95	3.88	0	15
Stress	Health Care workers	100	3.48	4.009	.401	2.68	4.28	0	16
	Family members	100	5.90	4.704	.470	4.97	6.83	0	18
	Total	200	4.69	4.525	.320	4.06	5.32	0	18
Domain-1	Health Care workers	100	53.52	15.433	1.543	50.46	56.58	13	69
	Family members	100	49.50	10.980	1.098	47.32	51.68	19	69
	Total	200	51.51	13.510	.955	49.63	53.39	13	69
Domain-2	Health Care workers	100	55.10	16.671	1.667	51.79	58.41	19	81
	Family members	100	59.98	16.115	1.612	56.78	63.18	31	81
	Total	200	57.54	16.536	1.169	55.23	59.85	19	81
Domain-3	Health Care workers	100	55.52	20.453	2.045	51.46	59.58	6	100
	Family members	100	71.31	16.217	1.622	68.09	74.53	31	94
	Total	200	63.42	20.040	1.417	60.62	66.21	6	100
Domain-4	Health Care workers	100	77.68	19.391	1.939	73.83	81.53	31	100
	Family members	100	54.36	16.525	1.653	51.08	57.64	13	75
	Total	200	66.02	21.437	1.516	63.03	69.01	13	100

The following table shows that a significant difference was found between the health care workers and the family members with respect to physical, psychological, social and

environmental domain (F value= 4.5, 4.4, 36.5 and 83.7. p value = 0.035, 0.037, 0.000 and 0.000)(Table 15)

Table 15

		Sum of Squares	df	Mean Square	F	P value
Age	Between Groups	4831.445	1	4831.445	58.056	.000
	Within Groups	16477.510	198	83.220		
	Total	21308.955	199			



Depression	Between Groups	474.320	1	474.320	35.446	.000
	Within Groups	2649.500	198	13.381		
	Total	3123.820	199			
Anxiety	Between Groups	93.845	1	93.845	8.762	.003
	Within Groups	2120.710	198	10.711		
	Total	2214.555	199			
Stress	Between Groups	292.820	1	292.820	15.330	.000
	Within Groups	3781.960	198	19.101		
	Total	4074.780	199			
Domain-1	Between Groups	808.020	1	808.020	4.505	.035
	Within Groups	35515.960	198	179.374		
	Total	36323.980	199			
Domain-2	Between Groups	1190.720	1	1190.720	4.430	.037
	Within Groups	53222.960	198	268.803		
	Total	54413.680	199			
Domain-3	Between Groups	12466.205	1	12466.205	36.594	.000
	Within Groups	67450.350	198	340.658		
	Total	79916.555	199			
Domain-4	Between Groups	27191.120	1	27191.120	83.781	.000
	Within Groups	64260.800	198	324.549		
	Total	91451.920	199			

DISCUSSION

In our study it was observed that maximum of the Health care workers belonged to age group 21-30years and were of female gender due to such composition existing of the Resident doctors in GNDH, Amritsar. Maximum of the family members who took part in the study were of male gender, completed their education till higher secondary level and of 26-40 years of age probably because this age group were at comparatively lesser risk of having severe symptoms of COVID so were actively involved in the care giving of the COVID positive patients. Most of the subjects belonged to Hindu religion reason because of its higher prevalence in the area considered. Maximum of the family members who took part in the study were married, taking care of their spouses admitted in the hospital or one or the other first degree relative. Maximum of

the Health care workers who took part in the study were unmarried justified by the fact that maximum were the residents doctors usually getting married after the completion of their residency as not being able to devote time to their personal lives due to strict duty hours and heavy work stress during residency years. Maximum health care workers who agreed to take part in the study were the ones working in COVID isolation wards, the frontline workers with maximum of them having duty hours of 6-12hours in a stretch. Majority of these Health Care workers were staying in Hostels provided by the college authorities, staying away from their homes, not being able to visit their parents due to strict duty hours, no holidays and lockdown which was probably one of the reason leading to depression, anxiety and stress in these resident doctors. Majority of the first degree relatives who took part in the study were self-employed, having earnings of

less than 5000 rupees in a month probably because the study was conducted in a government setup which was approached mainly by the population belongs to the lower socio-economic status. As the study was conducted in a tertiary health care centre, maximum of the population which took part in the study belonged to the Urban areas.^[10,11] The current study concluded that among the Health Care workers who took part in the study, 15% suffered from depression, 31% suffered from anxiety and 14% suffered from stress which is somewhat similar to the other studies conducted during the course of pandemic.^[6,8]

It further found that the common reasons for stress and anxiety among HCWs treating COVID-19 positive patients was the fear that they might infect their family members, the fear of getting infected themselves. Other reasons were: increased workload, lack of PPE, lack of security, not being able to meet their family members for months in a stretch. It was found that female gender, age group 26-30years, residing in the campus hostels, more weekly working hours, frontline doctors working in COVID isolation wards, having direct contact with the patients were most vulnerable to have depression, anxiety and stress which was similar to the other studies conducted on the health care workers dealing with the Covid 19 pandemic.^[12] Majority of them belonging to Nuclear family which may be obligated from the fact that families in India are more cohesive.^[13]

The study concluded that among the first degree relatives of the COVID positive patients who took part in the study, 52% suffered from depression, 50% suffered from anxiety and 38% suffered from stress which is similar to the other studies conducted during COVID pandemic on the general population.^[9,14]

Among these depression, anxiety and stress was more prevalent in males than females, studied till higher secondary level. This can be attributed to the ongoing lockdown and change in daily routines, work life balance and looming uncertainty in career and job prospects. This was similar to the other studies conducted related to the psychological impact on the family members and the general population.^[9]

It was found that maximum subjects complaining of depression, anxiety and stress were self-employed, this again can be attributed to the lack of daily routine and scheduling which affects the psycho-social functioning of individuals, mainly of the subjects living at urban areas as being a tertiary health care centre, majority of the population approaching the hospitals were belonging to urban areas.

Though the study showed that demographically only 1% both of the HCWs and the Family members of the COVID patients were suffering from previous psychiatric illness, the family members in comparison to the HCWs have higher rates of depression, anxiety and stress. The subjects with co morbid medical illness and substance abuse history were more vulnerable to depression, anxiety and stress.

Maximum of the Health Care workers (54%) who became part of the study said that their overall all quality of life was good and around 40% of the health care workers said that their overall perception of health was satisfied because of some of the measures that the hospital administration implemented on time. Initiative was taken by the Department Of Psychiatry, GNDH in conducting group discussions and seminars regarding the importance of relaxation therapies like yoga,

meditation or pursuing hobbies which helped in diverting attention from hectic daily duties and reduce stress. Psychological stress was reduced by reducing the patient load by admitting only the patients needing critical care and the ones at higher risk due to comorbidities and not admitting the ones which could have been easily managed at home by advising home isolation. Involving all the departments, the clinical, para clinical and the non-clinical ones by providing proper training as per the guidelines, establishing adequate isolation wards, adequate breaks, sufficient rotational duties, rest and good nutrition and most importantly supply of masks and good standard personal protective equipment.

Around 35% of the family members who took part in the study said that their quality of life was very good and 54% were satisfied with the overall perception of their health. These were mainly those relatives of the covid positive patients whose patients were completely asymptomatic or were having mild to moderate symptoms, patients who were admitted in hospital for lesser duration, patients who tested to be negative for covid infection soon, the relatives who were provided virtual or physical counselling by the psychiatrists, psychologists and psychiatry social workers and were psycho educated about the disease, symptoms, testing procedures, risk factors, discharging protocols and were advised various relaxation therapies, progressive muscle therapies, sleep hygiene practices, motivational therapies and to stay away from mass media, new channels increasing the panic about the covid pandemic. About 21% of the family members of these covid positive patients said that their quality of life was poor. These were mainly those relatives whose patients were suffering from severe

symptoms of the infection, having high risk factors due to accompanying various medical comorbidities, whose patients were admitted in critical wards like HDU and ICU, were on oxygen (High flow or NRV), were on artificial ventilation or were intubated, longer duration of hospital admission, belonging to a lower socio economic status, less monthly income or were unemployed. There was significant difference between the health care workers and the family members with respect to physical, psychological, social and environmental domain (F value= 4.5, 4.4, 36.5 and 83.7. p value = 0.035, 0.037, 0.000 and 0.000)

REFERENCES

1. Sharma A, Tiwari S, Deb MK, Marty JL. Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2): a global pandemic and treatment strategies. *Int J Antimicrob Agents.* 2020;56(2):106054. doi:10.1016/j.ijantimicag.2020.106054
2. Li S, Wang Y, Xue J, Zhao N, Zhu T. The Impact of COVID-19 Epidemic Declaration on Psychological Consequences: A Study on Active Weibo Users. *Int J Environ Res Public Health.* 2020;17(6):2032.
3. Kontoangelos K, Economou M, Papageorgiou C. Mental Health Effects of COVID-19 Pandemia: A Review of Clinical and Psychological Traits. *Psychiatry Investig.* 2020;17(6):491-505. doi:10.30773/pi.2020.0161
4. Lai J, Ma S, Wang Y, et al. Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. *JAMA Netw Open.* 2020;3(3):e203976. Published 2020 Mar 2. doi:10.1001/jamanetworkopen.2020.3976
5. Tsamakidis K, Rizos E, Manolis AJ, Chaidou S, Kypmpouropoulos S, Spartalis E, et al. COVID-19 pandemic and its impact on mental health of healthcare professionals. *Exp Ther Med.* 2020;19(6):3451-3453. doi: 10.3892/etm.2020.8646.
6. Tan BYQ, Chew NWS, Lee GKH, et al. Psychological Impact of the COVID-19 Pandemic on Health Care Workers in Singapore. *Ann Intern Med.* 2020;173(4):317-320. doi:10.7326/M20-1083
7. Elbay RY, Kurtulmuş A, Arpacioğlu S, Karadere E. Depression, anxiety, stress levels of physicians and associated factors in Covid-19 pandemics.



- Psychiatry Res. 2020;290:113130. doi: 10.1016/j.psychres.2020.113130.
8. Sandesh R, Shahid W, Dev K, et al. Impact of COVID-19 on the Mental Health of Healthcare Professionals in Pakistan. *Cureus*. 2020;12(7):e8974. doi:10.7759/cureus.8974
 9. Wang C, Pan R, Wan X, et al. Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. *Int J Environ Res Public Health*. 2020;17(5):1729. doi:10.3390/ijerph17051729
 10. Osman A, Wong JL, Bagge CL, Freedenthal S, Gutierrez PM, Lozano G. The Depression Anxiety Stress Scales-21 (DASS-21): further examination of dimensions, scale reliability, and correlates. *J Clin Psychol*. 2012;68(12):1322-38. doi: 10.1002/jclp.21908.
 11. Feder K, Michaud DS, Keith SE, Voicescu SA, Marro L, Than J, et al. An assessment of quality of life using the WHOQOL-BREF among participants living in the vicinity of wind turbines. *Environ Res*. 2015;142:227-38. doi: 10.1016/j.envres.2015.06.043.
 12. Das J, Holla A, Das V, Mohanan M, Tabak D, Chan B. In urban and rural India, a standardized patient study showed low levels of provider training and huge quality gaps. *Health Aff (Millwood)*. 2012;31(12):2774-2784. doi:10.1377/hlthaff.2011.1356
 13. Shah K, Kamrai D, Mekala H, Mann B, Desai K, Patel RS. Focus on Mental Health During the Coronavirus (COVID-19) Pandemic: Applying Learnings from the Past Outbreaks. *Cureus*. 2020;12(3):e7405. doi: 10.7759/cureus.7405.
 14. Khan AH, Sultana MS, Hossain S, Hasan MT, Ahmed HU, Sikder MT. The impact of COVID-19 pandemic on mental health & wellbeing among home-quarantined Bangladeshi students: A cross-sectional pilot study. *J Affect Disord*. 2020;277:121-128. doi: 10.1016/j.jad.2020.07.135.

Source of Support: Nil, Conflict of Interest: None declared