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An Observational Study of Impact of COVID-19 on Mental Health of Healthcare Workers at Tertiary Care Hospital

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ABSTRACT

The Corona virus has affected nearly every aspect of our lives. Most importantly the health care workers, who are under tremendous psychological pressures which lead them to various mental health problems such as anxiety, stress and depression. Aims: The aim of the study was to identify the various mental health problems like Depression, Anxiety, Stress in the health care workers. The study was conducted after permission from Institutional Review Board. It is institutional based cross-sectional study 271 participants were included in the study. Participants were administered a semi-structured questionnaire to obtain details about sociodemo graphic status and DASS 21 scale was administered to identify various psychological problems like Depression, Anxiety, Stress in the various health care workers during the pandemic of covid 19. we have found stress, anxiety and depression statistically significant among health care workers at tertiary care hospital. Resident doctors who are working more than three months found to have significantly high covid infection compared to resident doctors who are working less than 3 months. There is high psychological impact on all the health care workers arising out of this pandemic situation.

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Key Words
Covid 19, mental health, DASS-21, health care workers

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INTRODUCTION

The novel corona virus 19 (COVID-19) is started from Wuhan city of china in 2019. since then, it has affected most of the countries globally because of its rapid spread and it has been declared as public health emergency by WHO and later declared as pandemic by WHO in March 11[1]. It is obvious that during this pandemic, people feeling afraid, worried, anxious, and depressed due to continuous changing alert regarding the spread of the virus. The onset of this infection all over the world has placed people under psychological trauma. previous epidemics such as H1N1 influenza in 2009 and SARS in 2003 has clearly proven the psychological impact of such illness on people and health care workers[2].

As the health care works are the front-lines to deal this pandemic conditions .they suffer from severe psychological side effects than the general population[3] which may be attributed to extremely long working hours, heavy work load, constant contact with covid infected patients and environment, feelings of inadequate support[4]. As a result, health-care workers will be under overwhelming psychological pressure which may lead to various psychological problems, such as anxiety, fear, depression and stress[5]. Many studies have been conducted on the mental health of health-care workers during the pandemic in different countries but there are very few Indian studies on the mental health of Health care Workers, hence we have conducted the study. The results of this study can provide important data to support health-care managers and the allocation mental health services for health-care workers. Moreover, understanding the mental health impacts of COVID-19 on health-care providers is important to identify possible interventions.

Therefore, this study aimed to assess the mental health adverse effects of COVID-19 and associated factors of COVID-19 on health professionals working in a tertiary care hospital.

MATERIALS AND METHODS

It is an observational study done at a tertiary care hospital after Institutional Ethics Committee approval, designed in accordance with the Declaration of Helsinki. Patients in the age group of 18-60yrs were included in the study. Patients of age >60 yr and <18 year patients were excluded from the study. A total of 271 study sample with above inclusion and exclusion criteria and who gave consent, were randomly selected for the study as cases. They were administered semi structured questionnaires to obtain details about socio- demographic status and illness variables.

Depression, Anxiety and Stress Scale-21 (DASS-21)[6] is a set of three self-report scale, consist of 21 questions designed to measure the emotional states of depression, anxiety and stress.

Statistical analysis: Statistical analysis was done using SPSS Software version. Qualitative data (age, gender etc.) were described using frequency and percentages. chi square test for Association is used, $p<0.05$ was considered significant.

RESULTS

The total of 271 participants were included in the study consist of health care workers, The average age of participants was 28 yrs with SD±8.5. Out of total sample 128 (47.23%) were male participants and 143 (52.77%) were female participants. Out of 271 health care involved in the study 79 (29.15%) were nursing staff, 73 (26.94%) were intern doctors, 57 (21.03%) were resident doctors, 54 (19.93%) were faculty doctors and 8 (2.95%) were health care workers like social workers, technicians etc.

Among the sample 30 (11.07%) participants found to have medical/surgical illness. Among health care workers 86 (31.73%) were COVID infected during the pandemic and 185 (68.27%) were Not infected. Out of the total sample 12 (4.43%) have history of alcohol intake, 3 (1.11%) have history of tobacco intake, while 255 (94.09%) reported no history any substance intake. Among the nursing staffs who were working <3 months, 14.02% were infected and working >3 months 15.13% were infected. Among faculty doctor working <3 months 1.85% were infected and those working >3 month 18.08 % were infected. Among intern doctors working <3 months 26.94% were covid infected. Among resident doctor working <3 months 2.21% were infected and those working >3 month 19.93 % were infected ($X2 = 3.85$, $df = 1$, $p = 0.05$). We found

Table 1: Gender distribution.

Gender	N	Percentage
Male	128	47.23
Female	143	52.77
Total	271	100

Table 2: Designation of healthcare workers.

Designation	N	Percentage
Nursing Staff	79	29.15
Faculty Doctor	54	19.93
Intern Doctor	73	26.94
Resident Doctor	57	21.03
Health Care Worker	8	2.95
Total	271	100

Table 3: History of medical illness.

History of medical Illness	Yes	No
	30 (11.07%)	241 (88.93%)

Table 4: History of covid-19 infection.

H/O infection with covid-19	N	Percentage
Yes	86	31.73
No	185	68.27
Total	271	100

Table 5: History of substance use.

H/O substance use	N	Percentage
Alcohol	12	4.43
Tobacco	3	1.11
Other	1	0.37
No	255	94.09
Total	271	100

Table no.6: duration of exposure and covid infection.

Designation	Duration of Exposure	N	Yes	No	Percentage
Nursing staff	< 3months	38	9	29	14.02
	>3 months	41	10	31	15.13
Faculty doctors	< 3months	5	2	1	1.85
	>3 months	49	22	29	18.08
Intern doctors	< 3months	73	21	52	26.94
	>3 months	0	0	0	0.00
Resident doctors	< 3months	6	0	6	2.21
	>3 months	54	22	32	19.93
Healthcare worker	< 3months	1	0	1	0.37
	>3 months	4	0	4	1.48
Total		271	86	185	100.00

Table 7: DASS 21 Sub-scale a) dass 21 (depression).

Designation	Normal	Mild	Moderate	Severe	Extremely Severe	Total	Percentage
Nursing Staff	57	8	10	4	0	22	8.12
Faculty Doctor	44	4	3	1	2	10	3.69
Intern Doctor	42	12	10	4	5	31	11.44
Resident Doctor	36	4	6	4	10	24	8.86
Healthcar E worker	3	1	1	0	0	2	0.74
total	182	29	30	13	17	89	32.84

Table 8: B) dass21 (anxiety).

Designation	Normal	Mild	Moderate	Severe	Extremely Severe	Total	Percentage
Nursing Staff	48	6	11	7	7	31	11.44
Faculty Doctor	42	5	3	0	4	12	4.43
Intern Doctor	30	9	17	4	13	43	15.87
Resident Doctor	30	6	8	5	11	30	11.07
Healthcar E worker	3	1	0	0	1	2	0.74
total	153	27	39	16	36	118	43.54

Table 9: C) dass21 (stress).

Designation	Normal	Mild	Moderate	Severe	Extremely severe	Total	Percentage
Nursing Staff	59	15	2	1	2	20	7.38
Faculty Doctor	41	8	3	1	1	13	4.80
Intern Doctor	45	16	9	2	1	28	10.33
Resident Doctor	32	11	10	3	4	28	10.33
Healthcar E worker	3	1	1	0	0	2	0.74
total	180	51	25	7	8	91	33.58

statistically significant association of duration of working of resident doctors with COVID infection. Among other health care workers working <3 months 0.37% were infected and those working >3 month 1.48 % were infected.

(X2 = 28.06, df = 6, p<0.05) The association of depression in COVID health care workers found to be statistically significant. Among health care workers 32.84% were having Depression, intern doctors having 11.44%, resident doctors 8.86%, Nursing staff 8.12 %, Faculty doctors 3.69, other health care workers 0.74%. (X2 = 27.51, df = 6, p<0.05) The association of anxiety in COVID health care workers found to be statistically significant. Among health care workers 43.54% were having Anxiety, intern doctors having 15.87%, resident doctors 11.07%, Nursing staff 11.44 %, Faculty doctors 4.43%, other health care workers 0.74%. (X2 = 19.81, df = 6, p<0.05) The association of stress in COVID health care workers found to be statistically significant. Among health care workers 33.58% were having Stress, intern doctors having 10.10%, resident doctors 10.10%, Nursing staff 7.38%, Faculty doctors 4.80%, other health care workers 0.74%.

DISCUSSIONS

Psychological problems like stress, anxiety and depression are very common and important public health problems following such epidemics. We found that Covid has affected the mental health of people globally and specifically health care workers as they are directly dealing with the infected patients. In our study we found that there is statistically significant

association in all the three subscale scores of DASS21 in the health care workers. On subscale of DASS 21 stress was found in 33.58% among health care workers. In which resident doctors 10.33%, intern doctors 10.33%, nursing staff 7.38%, faculty doctors 4.80% and other health care workers 0.74%.

On sub-scale of DASS 21 anxiety was found in 43.54% among health care workers. In which resident doctors 11.07%, intern doctors 15.87%, nursing staff 11.44%, faculty doctors 4.43% and other health care workers 0.74%. On sub-scale of DASS 21 depression was found in 32.84% among health care workers. In which resident doctors 8.86%, intern doctors 11.44%, nursing staff 8.12%, faculty doctors 3.69% and other health care workers 0.74%.

Among the health care workers who are working in Covid, resident doctors who are working more than 3 months are having significantly high number of infections with Covid compared to resident doctors who are working in Covid for <3 months. Whereas in other health care workers no such association of duration of working in Covid and contracting with Covid infection was found. This might be due to longer duration of the exposure to the infectious environment of the resident doctors who are the main frontline doctors in treating the patients, further studies needed to find out the relation of duration of exposure and getting infected with the virus. In our study we found the health care worker who are directly dealing diagnosis treatment and care of the patient with covid 19 patient found to have higher psychological problems like depression anxiety and stress similar findings were found in study done by Jianbo Lai *et al* [7].

CONCLUSION

During this pandemic thousands of health care workers were under tremendous psychological distress leading to emotional disturbances including exhaustion and burning out. So, there is need of psychological and psychiatric care to the health care workers[8]. Consistent with Chong *et al*. who called SARS as bio-disaster. We also supposed that SARS-CoV-2 pandemic as bio-disaster[9].

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