

## Assessment of Depression in Health Care Workers Dealing with Coronavirus Disease 2019 (COVID-19) Patients During the Pandemic

Ambreen Butt<sup>1</sup>, Satia Waheed<sup>2</sup>, Muhammad Aqeel<sup>3</sup>, Jawad Ashghar<sup>4</sup>, Asif Hanif<sup>5</sup>

### Abstract

**Objective:** To find frequency and severity of depression among health care workers (HCWs) dealing with coronavirus disease 2019 (COVID-19) patients during the pandemic

**Methods:** This cross sectional survey was done at all medical units, Services institute of medical sciences. Data was collected in 4 weeks of time [1st July, 2020 till 28th July, 2020] using random sampling. A total of 120 health care workers working in medical units of any designation aged 20-60 of either gender were taken. Their basic demographic information was asked and depression was assessed using Hamilton Depression (HAM-D) Rating Scale. All data was collected under supervision of principal author. All collected data was entered and analyzed using SPSS version 24.

**Results:** The mean age of participants was  $26.11 \pm 3.14$  years with minimum and maximum age as 20 and 36 years. There were 56(46.7%) male and 64(53.3%) female participants. According to their designation, 1(0.8%) was paramedic, 2(1.7%) were nurses, 115(95.8%) medical/house officers and 2(1.7%) were assistant professor. The frequency of depression in these HCWs was found in 45(37.5%) while mild depression was seen in 35(29.2%) and moderate depression was seen in 10(8.3%) of the HCWs. There was no difference of frequency of depression among male (48.9%) and female (51.1%), p-value = 0.705

**Conclusion:** It is concluded that the depression was found in more than one third of HCWs during the covid epidemic so effective and significant strategies must be introduced in improving their psychological and mental health. By controlling depression they can put their concentrations for quality health care provision.

**Keywords:** COVID-19, pandemic, health care workers, depression, Hamilton Depression Rating Scale

### Introduction

A disease previously known as severe acute respiratory syndrome coronavirus-2 was first seen in last week of December, 2019 in Wuhan City of China<sup>1</sup> and patients presented with pneumonia for unknown etiology that was later named as coronavirus disease 2019 (COVID-19) by world health organization (WHO).<sup>2,3</sup> In few days it was declared as health emergency by WHO later<sup>2,3</sup> as it spread very quickly in China and later in few days it spread worldwide including America, Australia Europe, Asia including developing countries like Pakistan.<sup>4</sup>

In the start the clinicians focused on clinical features identification then put their efforts to treat the patients.<sup>5</sup> The diagnosis is mainly based on real time reverse transcription-polymerase chain reaction (RT-PCR) assay but sometimes it has false negative rate.<sup>6</sup> Computed tomography and Chest X-rays has also very important role in diagnosis of COVID-19.<sup>7-11</sup>

The pandemic of COVID-19 had huge burden on psychological stress on humans around the globe<sup>12</sup> and eventually has greatly affect the social, mental and physical health of all, especially health care provider, the frontline fighter with the crisis.<sup>13-15</sup> The psychological burden further leads to different advanced psychological issues, like fear, anxiety, depression and lack of sleep.<sup>16-19</sup>

After emergence of COVID-19 in Pakistan, it was also reported that the health care providers faced emotional and physical burden. Moreover the basic reason of this psychological trauma was lack of equipment for safety to get infection, fear of isolation

- |  |                       |
|--|-----------------------|
| 1. Ambreen Butt  | 2. Satia Waheed Chima |
| 3. Muhammad Aqeel  | 4. Jawad Ashghar      |
| 5. Asif Hanif  |                       |
| 1-5. Department of Medicine Unit-IV, Services Institute of Medical Sciences/Services Hospital Lahore |                       |
| 6. University Institute of Public Health, Lahore.  |                       |

#### Correspondence:

Dr. Satia Waheed  
Assistant Professor, Department of Medicine Unit-IV, Services Institute of Medical Sciences/Services Hospital Lahore

Submission Date: 12-08-2020

1st Revision Date: 19-08-2020

Acceptance Date: 08-09-2020

from family or lack of contact with family, and exhaustion after heavy emergency duties.<sup>20</sup> Hence there is a need to assess their psychological and mental health issues.<sup>13</sup> If anxiety and depression is found high then special educational sessions will be arranged for them in order to reduce to risk of further sequel.

## Methods

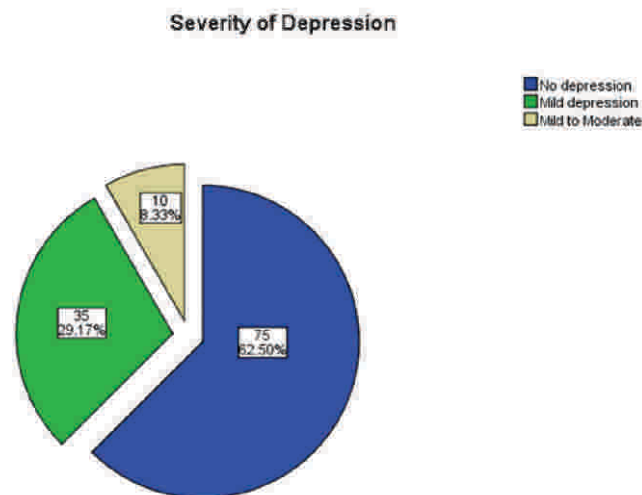
It was a Cross sectional survey. Data was collected in 4 weeks of time [1st July, 2020 till 28th July, 2020] The study was conducted at Medical units, Services institute of medical sciences. A total of 120 health care workers were taken. Random sampling was used. Health care workers working in medical units of any designation between ages 20-60 years of either gender were included. Health care workers having death in family in past 6 months or having history of pre-existing psychiatric illness were excluded.

The study was started after taking informed consent form participant and they were given the structured proforma to be filled. A total of 120 participants were approached and after 24-48 hours they were requested to give it back at unit-4 of medicine, SIMS. Their basic demographic information was asked and depression was assessed using validated proforma i.e. Hamilton Depression (HAM-D) Rating Scale (in current study we found Cronbach's Alpha = 87.9% showing high reliability of data), HCWs with HAM-D score = 0-7 labelled as normal, mild depression was labelled on score 8-16, HCWs with 17-23 scores were labeled as moderate depression and score > 24 were labelled as severe depression.<sup>21</sup> All data was collected under supervision of principal author. All collected data was entered and analyzed using SPSS version 24. Mean ± S.D were calculated for quantitative data like age, HAM-D score. Frequency and percentages were used for categorical data like gender, depression and severity of depression. Chi-square test was applied to compare depression among gender and results of COVID-19, taking p-value ≤ 0.05 as significant.

## Results

The mean age of participants was 26.11 ± 3.14 years with minimum and maximum age as 20 and 36 years. There were 56(46.7%) male and 64(53.3%) female participants. According to their designation, 1(0.8%)

was paramedic, 2(1.7%) were nurses, 115(95.8%) medical/house officers and 2(1.7%) were assistant professor. According to 63(52.5%) health care workers (HCWs) they were sad/down, 43(35.8%) were confused or reduced their ability to concentrate, 45(37.5%) felt extreme guilt about family, 67(55.8%) reported tiredness, 52(43.3%) HCWs had troubled sleep, low energy was reported by 55(45.8%), 33(27.5%) HCWs had thought of impending disaster and in 33(27.5%) HCWs there were weight and appetite change. There were 69(57.5%) HCWs who were tested for COVID-19, among them 25(36.23%) were positive. The mean Hamilton depression score was 6.58 ± 5.95 with minimum and maximum Hamilton depression score as 0-24. The frequency of depression in these HCWs was found in 45(37.5%) while mild depression was seen in 35(29.2%) and moderate depression was seen in 10(8.3%) of the HCWs. There were no difference of frequency of depression among male (48.9%) and female (51.1%), p-value = 0.705. Moreover there was no difference of frequency of depression among those who were tested positive for COVID-19 (26.7%), tested negative for COVID-19 (31.1%) and who were not tested (42.2%), p-value = 0.45.



**Fig-1:** Severity of Depression Among HCWs

## Discussion

The coronavirus disease 2019 (COVID-19) pandemic has caused great financial and psychological havoc. Healthcare professionals (HCPs) are among the many groups of people who are in the frontline and facing a risk of direct exposure to the virus.<sup>22,23</sup>

In current study the frequency of depression in these

**Table 1:** Distribution of different Variables Asked during Survey

		Frequency	Percentage
<b>Gender</b>	Male	56	46.7
	Female	64	53.3
<b>Designation</b>	Paramedical	1	.8
	Nursing staff	2	1.7
	Medical officer	115	95.8
	Asst. Prof	2	1.7
<b>Sad/down</b>	Agree	63	52.5
	Indifferent	25	20.8
	Disagree	32	26.7
<b>Confused or reduced ability to concentrate</b>	Agree	43	35.8
	Indifferent	30	25.0
	Disagree	47	39.2
<b>Excessive fears / worries</b>	Agree	45	37.5
	Indifferent	24	20.0
	Disagree	51	42.5
<b>Extreme feeling of guilt about exposing family</b>	Agree	54	45.0
	Indifferent	28	23.3
	Disagree	38	31.7
<b>Tiredness</b>	Agree	67	55.8
	Indifferent	20	16.7
	Disagree	33	27.5
<b>Troubled sleep</b>	Agree	52	43.3
	Indifferent	25	20.8
	Disagree	43	35.8
<b>Low energy</b>	Agree	52	43.3
	Indifferent	25	20.8
	Disagree	43	35.8
<b>Thoughts of impending disaster</b>	Agree	33	27.5
	Indifferent	25	20.8
	Disagree	62	51.7
<b>Weight change / appetite change</b>	Agree	33	27.5
	Indifferent	30	25.0
	Disagree	57	47.5
<b>Tested for COVID-19</b>	Yes	69	57.5
	No	51	42.5
<b>COVID-19 result</b>	Positive	25	20.8
	Negative	45	37.5
	Test not done	50	41.7

**Table 2:** Comparison of Depression with Respect to Gender and Covid-19 Testing

		Depression		Chi-square (p-value)
		Yes	No	
<b>Gender</b>	<b>Male</b>	22(48.9%)	34(45.3%)	0.143 (0.705)
	<b>Female</b>	23(51.1%)	41(54.7%)	
<b>COVID-19 testing</b>	<b>Positive</b>	12(26.7%)	13(17.3%)	1.96 (0.374)
	<b>Negative</b>	14(31.1%)	31(41.3%)	
	<b>Not done</b>	19(42.2%)	31(41.3%)	

HCWs was found in 45(37.5%) while mild depression was seen in 35(29.2%) and moderate depression was seen in 10(8.3%) of the HCWs. Another study was done on 2299 participants (257 administrative staff and 2042 medical staff) to find status of depression using HAM-D scale and reported depression among medical staff as 12.81%.<sup>12</sup> They further concluded that medical staff working with infected patients, had higher 1.4 times higher chances of having fear and 2 times more likely to have depression and anxiety.<sup>12</sup> In same context a longitudinal study was done on general population 2 times (during the initial outbreak and then four weeks later after the COVID peak). They found that there was a significant reduction in mean scores measured for depression (from 32.98 to 30.76,  $p < 0.01$ ) after 4 weeks.<sup>19</sup>

Like our statistics one more study reported depression among doctors was high i.e. 45.6% doctors and anxiety was found in 11.4%<sup>24</sup> they further added it was higher in female HCWs.<sup>24</sup> While in current study both male and female HCWs had same rate of depression. Another study was done on 1210 people and found that moderate to severe psychological impact of the pandemic was measured among 53.8% of respondents.<sup>25</sup> Moreover an Indian study reported that health professionals need special attention because of their higher psychological distress.<sup>15</sup> So mental health of HCWs must be strengthened through specialized team to provide psychologic support during the peak of the pandemic<sup>26</sup> in order to boost their moral and to avoid depression for better control of such infectious diseases and pandemics.<sup>27</sup>

## Conclusion

It is concluded that the depression was found in more than a quarter of HCWs so effective and significant strategies must be introduced in improving their psychological and mental health. By controlling depression they can put their concentrations for quality health care provision.

## Author's Contributions

**AB:** Project Supervise.  
**SW:** Data Collection, Analysis.  
**MA:** Data Collection.  
**ZDB:** Data Reviewer.  
**JA:** Compile Data.  
**AH:** Corrections, analysis & approve.

**Conflict of Interest:** None

## References

1. Xiao H, Zhang Y, Kong D, Li S, Yang N. The Effects of Social Support on Sleep Quality of Medical Staff Treating Patients with Coronavirus Disease 2019 (COVID-19) in January and February 2020 in China. *Med Sci Monit.* 2020;26:e923549-e.
2. WHO. 2020. WHO characterizes COVID-19 as a pandemic. World Health Organization <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>. Published 2020. Accessed 8-9-2020.
3. Ho CS, Chee CY, Ho RC. Mental health strategies to combat the psychological impact of COVID-19 beyond paranoia and panic. *Ann Acad Med Singapore.* 2020;49(1):1-3.
4. Waris A, Atta UK, Ali M, Asmat A, Baset A. COVID-19 outbreak: current scenario of Pakistan. *New Microb New Infect.* 2020;35:100681.
5. Lipsitch M, Swerdlow DL, Finelli L. Defining the epidemiology of Covid-19—studies needed. *N Engl J Med.* 2020;382:1194-6.
6. Chan JF-W, Yuan S, Kok K-H, To KK-W, Chu H, Yang J, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *The Lancet.* 2020;395(10223):514-23.
7. Chung M, Bernheim A, Mei X, Zhang N, Huang M, Zeng X, et al. CT Imaging Features of 2019 Novel Coronavirus (2019-nCoV). *Radiology.* 2020;295(1):202-7.
8. Pan F, Ye T, Sun P, Gui S, Liang B, Li L, et al. Time Course of Lung Changes On Chest CT During Recovery From 2019 Novel Coronavirus (COVID-19) Pneumonia. *Radiology.* 2020;0(0):200370.
9. Xie X, Zhong Z, Zhao W, Zheng C, Wang F, Liu J. Chest CT for typical 2019-nCoV pneumonia: relationship to negative RT-PCR testing. *Radiology.* 2020:200343.
10. Fang Y, Zhang H, Xie J, Lin M, Ying L, Pang P, et al. Sensitivity of chest CT for COVID-19: comparison to RT-PCR. *Radiology.* 2020:200432.
11. Hui TCH, Khoo HW, Young BE, Haja Mohideen SM, Lee YS, Lim CJ, et al. Clinical utility of chest radiography for severe COVID-19. *Quant Imaging Med Surg.* 2020;10(7):1540-50.
12. Lu W, Wang H, Lin Y, Li L. Psychological status of medical workforce during the COVID-19 pandemic: A cross-sectional study. *Psychiat Res.* 2020;288:112936.
13. Pappa S, Ntella V, Giannakas T, Giannakoulis VG, Papoutsis E, Katsaounou P. Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Brain, Behavior, and Immunity.* 2020;88:901-7.
14. Zhang W-r, Wang K, Yin L, Zhao W-f, Xue Q, Peng M, et al. Mental health and psychosocial problems of medical health workers during the COVID-19 epidemic in China. *Psychotherap Psychosomat.* 2020;89(4):242-50.
15. Rehman U, Shahnawaz MG, Khan NH, Kharshiing KD, Khursheed M, Gupta K, et al. Depression, Anxiety and Stress Among Indians in Times of Covid-19 Lockdown. *Comm Mental Health J.* 2020:1-7.
16. Li W, Yang Y, Liu Z-H, Zhao Y-J, Zhang Q, Zhang L, et al. Progression of Mental Health Services during the COVID-19 Outbreak in China. *Int J Biolog Sci.* 2020;16(10):1732-8.
17. Jungmann SM, Witthöft M. Health anxiety, cyberchondria, and coping in the current COVID-19 pandemic: Which factors are related to coronavirus anxiety? *J Anxiety Disord.* 2020;73:102239.
18. Qiu J, Shen B, Zhao M, Wang Z, Xie B, Xu Y. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations. *General Psychiatr.* 2020;33(2):e100213-e.
19. Wang C, Pan R, Wan X, Tan Y, Xu L, McIntyre RS, et al. A longitudinal study on the mental health of general population during the COVID-19 epidemic in China. *Brain, Behavior, and Immunity.* 2020;87:40-8.
20. Rana W, Mukhtar S, Mukhtar S. Mental health of medical workers in Pakistan during the pandemic COVID-19 outbreak. *Asian J Psychiatr.* 2020;51:102080-.
21. Sharp R. The Hamilton Rating Scale for Depression. *Occupational Med.* 2015;65(4):340-.
22. Wilson W, Raj JP, Rao S, Ghiya M, Nedungalparambil NM, Mundra H, et al. Prevalence and Predictors of Stress, anxiety, and Depression among Healthcare Workers Managing COVID-19 Pandemic in India: a Nationwide Observational Study. *Ind J Psychol Med.* 2020:<https://doi.org/10.1177/0253717620933992>.
23. Shanafelt T, Ripp J, Trockel M. Understanding and addressing sources of anxiety among health care professionals during the COVID-19 pandemic. *JAMA.* 2020;323(21):2133-4.
24. Zhu J, Sun L, Zhang L, Wang H, Fan A, Yang B, et al. Prevalence and Influencing Factors of Anxiety and Depression Symptoms in the First-Line Medical Staff Fighting Against COVID-19 in Gansu. *Frontiers Psychiatr.* 2020;11:386-.
25. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, 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 Environment Res Public Health.* 2020;17(5):1729.
26. Chen Q, Liang M, Li Y, Guo J, Fei D, Wang L, et al. Mental health care for medical staff in China during the COVID-19 outbreak. *The Lancet Psychiatr.* 2020;7(4):e15-e6.
27. Kang L, Li Y, Hu S, Chen M, Yang C, Yang BX, et al. The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. *Lancet Psychiatr.* 2020;7(3):e14. Epub 2020/02/09.

## Dietary Habits and Choices before and During COVID-19 Pandemic Among Medical Students of Pakistan

Amarha Naeem<sup>1</sup>, Rimsha Munir<sup>2</sup>, Arfa Aziz<sup>3</sup>, Farhat Ijaz<sup>4</sup>, Rana Khurram Aftab<sup>5</sup>, Haroon Rashid<sup>6</sup>

### Abstract

**Objective:** COVID-19 pandemic which was emerged in China and in December 2019 but later it was become a pandemic and Pakistan also get affected from it due to which all educational institution gets closed on 14th March. This study was aimed to explore the changes in dietary habits and choices among medical students of Pakistan.

**Methods:** An online survey was conducted in June 2020 involving 385 medical and dental students of the age (16-31 years) from different medical colleges. After providing informed consent participants complete this online survey.

**Results:** Majority students were having normal BMI (18.5-24.9) having no dietary problem and not currently losing weight. Majority of students used to skip meals before COVID-19 but during COVID-19 this ratio lessened out, the ratio to eat in between meals had increased as 260(79%) females and 43(76.8%) males during the period of COVID-19 but the habit to eat at night was same before and during COVID-19. About the preference of food, we found that student's preference towards fresh fruits, pasta and rice, bread /cereals, pulses, snacks, fruit juices, soft/fizzy drinks, tea/coffee, milk remained the same. Preference of cakes and ice-cream, pizza, packed/readymade food decreased during COVID-19.

**Conclusion:** Healthy preferences and habits during COVID-19 among medical students were founded in this study.

**Keywords:** COVID-19, Dietary habits, Dietary preferences

### Introduction

COVID-19 was first reported in Wuhan city of China in December 2019 in March 2020 WHO declared it as Pandemic.<sup>1</sup> In Pakistan first case of COVID-19 was reported on 26th March in Karachi. But later on all educational institution get closed on 14th March 2020. As a result of mandatory lockdown produced problems like low mod irritability, psycho-

logical distress, anger, exhaustion and insomnia. These stressful events effect the eating patterns.<sup>1</sup> Stress alter overall eating habits resulting under and over eating which is influenced by the severity of stress. Acute stress which leads to the activation of the sympathetic adrenal medullary system (release of catecholamines) which may decrease food intake.<sup>2</sup> Anxiety, uneasiness, anger, apathy is commonly accompanying chronic stress due to hyperactivation of hypothalamic pituitary adrenal axis which lead to increase in the release of the cortisol which is referred as a stress hormone which cause some individual to binge eating.<sup>2-3</sup>

Some diets are having positive effect on mood possibly by providing polyphenols, vitamins and tryptophan for serotonin production. Psychological factors have great influence on the dietary preference.<sup>4</sup> It is recommended by the WHO "If you must stay at home, maintain a healthy lifestyle - including proper diet, sleep, exercise and social contacts with loved ones at home and by email and phone with other family and

1. Amarha Naeem
  2. Rimsha Munir
  3. Arfa Aziz
  4. Farhat Ijaz
  5. Rana Khurram Aftab
  6. Haroon Rashid
- 1-3: CMH LMC & IOD, Lahore, Pakistan  
 4. Department of Physiology, CMH Lahore Medical College & Institute of Dentistry  
 5. Punjab Institute of Cardiology, Lahore, Pakistan  
 6. CMH Lahore Medical College & IOD, CMH LMC & IOD (NUMS), Lahore, Pak

#### Correspondence:

Farhat Ijaz  
 Department of Physiology, CMH Lahore Medical College & Institute of Dentistry (NUMS),  
 Lahore, Pakistan.  
 Email: farhat\_khurram\_rana@cmhlahore.edu.pk

Submission Date: 15-08-2020  
 1st Revision Date: 21-08-2020  
 Acceptance Date: 06-09-2020