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Assessment of Depression Levels Using COVID – 19 Depression Scale Among Health Care Workers Due to COVID – 19 Pandemic

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Abstract

Introduction: The emergence of the Novel Severe Acute Respiratory Syndrome Corona virus-2(SARS-Co) better known as COVID -19 was first detected in the end of December, 2019 and its outbreak remains as the greatest medical challenge and a global threat to the humankind in recent times. Amidst the chaos, caused among the people by the pandemic the health care workers are the group of people aiding in the screening and treatment of this infectious condition throughout the continents. Hence, the present study deals with the assessment of depression levels using COVID19 Depression Scale(CDS) among Health care workers due to COVID19 pandemic. **Methodology:** A cross sectional study was conducted among 100 healthcare workers in Pondicherry. A simple random technique was adopted 100 participants. The assessmentof depression levels was done using COVID-19 depression scale (CDS) which is a structured scale designed to measure the depression levelsby using 4 different criteria. Data was entered in Microsoft excel spread sheet and analyzed using SPSS software (version 20). Descriptive statistics were used. **Results:** On an average, among the Health Care Workers, about 17.2%(n=17) had mild depression, 25.3%(n=25) had moderate depression, 46.5%(n=46) had intermediate depression, 11.1%(n=11) had high depression. 15% of doctors had high depression 6.7%of the dentists had high depression and 8.3% of nurses had high depression. **Conclusion:** This study shows that there is a definitive level of depression among the health care workers of Puducherry. Multidisciplinary mental health teams must be set up both at national and regional levels especially in areas harbouring more COVID-19 cases, to provide quality psychological support to the health care workers.

Keywords: Anxiety, Depression, Physician, Dentists, Nurses

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INTRODUCTION

The emergence of the novel severe acute respiratory syndrome corona virus-2 (SARS-Co) better known as COVID-19 was first detected in the end of December 2019 and its outbreak remains as the greatest medical challenge and a global threat to the humankind in recent times.[1] The outbreak of middle east respiratory syndrome coronavirus and SARS in Middle East (2009) and Guangdong,[2,3] China (2002–2003), respectively, are said to be the forerunners of the current pandemic novel coronavirus (COVID-19).[2] An exotic meat-rich wet market in Wuhan, China, served as a flare-up point for the outbreak of the COVID-19 infection. Considering the massive rate of spread, the World Health Organization (WHO) declared it as an "epidemic" in the monthof December 2019. Within a span of a month, the disease wasseen to be transferred from human to human and the spread was increasing locally and internationally and it was consideredas public health emergency in January 2020 and it was termedas pandemic by the WHO in March 2020.[4]

In India, the first confirmed case of COVID-19 was documentedon January 30, 2020.[3] Intending containment, the nation wasplaced on total lockdown since March 25, 2020.[3] As of writingthe article, the nation continues to be under Lockdown phase-5and the total number of cases on August 4, 2020 was 18,56,754COVID-positive cases with 38,993 deaths.[5]

Amidst the chaos, caused among the people by the pandemicthe health-care workers are the group of people aiding in the screening and treatment of this infectious condition throughoutthe continents.[2] The health-care workers being nonimmunizedto COVID-19 are involved in the crisis management of the pandemic and are more prone to infection than others. Even though there is a low mortality rate of 2% in COVID virus infection, it possesses a high transmission rate which is an important reason for having a psychological impact among the health-care workers.[4] On the due course of rapidly increasingconfirmed, suspected cases, increasing workload, inadequatepersonal protection equipment, nonexistence of proper drug regimen, less family time, increased financial burden,[6-10] health-care workers tend to have a increased mental burden.

As the dentists deal with more of splatter of saliva and aerosols,they are at a greater risk of nosocomial infection. Since March 25, 2020, following the universal norms, societal andgovernment advisory, most of the dental practices in India were shut.[3] With the greater possibility of increasing financial implications in the future due to the decreased clinical hours,lack or limited availability of personal protective equipment and an impending anxiety of encountering a COVID-19 patient,dentists are at a state of mental breakdown. This could imperilthe dentist, patients, and the community that they serve.[3]

Till date, the psychological stress perception due to COVID-19 has not been assessed among the health-careworkers in the region of Puducherry, India, though they fall under high-risk group. This article aims at addressing this void from this part of the world. The present study dealswith the assessment of depression levels using COVID-19 Depression Scale (CDS) among health-care workers due to COVID-19 pandemic.

MATERIALS AND METHODS

Study type

Cross-sectional study.

Study Area:

Pondicherry

Study population

Physicians, dentist, and nurses from the medical and dental colleges of Pondicherry.

Inclusion criteria

- Doctors, dentists, and nurses from the dental and medical college are included in the study
- Postgraduates are also included in the study.

Exclusion criteria

- Interns and preclinical students are not included
- Doctors, dentist, nurses those who are not willing are not included in the study.

Ethical clearance

- Before the start of the study, ethical clearance was obtainedfrom the institutional ethics committee, IGIDS, SBV university
- Online informed consent was obtained from the study participant
- The anonymity of the participants was maintained.

Scheduling

Data collection was scheduled in the month of July and Augustof 2020.

Sample size

The sample size was calculated as 100.

Sampling technique

A list of medical and dental college in Pondicherry was obtained from the directory of Medical and Dental Council ofIndia. A simple random technique was adopted. Using lotterymethod, 5 colleges are selected randomly which included 3 medical colleges and 2 dental college from Pondicherry. 100participants were selected randomly.

Survey instrument

A revalidated set of questionnaire was used for the survey purpose. The first section collected demographic information of the participants such as age, gender, levelof education. The second part of the questionnaire consisted of 10 questions with 1 depression scale analysis to assess the level of depression in health-care workers.

The assessment of depression levels was done using CDS which is a structured scale designed to measure the depression levels by using 4 different criteria. The scale ranges from0 to 100 categorized as mild (0–25), moderate (25–50),intermediate (50–75), high (75–100).

Survey Instrument

After a brief introduction on the purpose and intent of the study questionnaire, Google form link was sent.

Filled questionnaires were collected. Only fully filled questionnaires were considered for analysis.

Statistical Analysis

Data were entered in Microsoft Excel spreadsheet and analyzedusing IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.

Descriptive statistics were used. For significance level, a $P < 0.05$ was considered statisticallysignificant.

RESULTS

On comparison of age among the respondents, it is seenthat mean value of male (32.2000) is greater than that ofthe females (31.1525). On comparison of the family income among the respondents, the mean value of male (81,200.0000)is greater than that of the females (68,457.6271) [Table 1].

On combining both the criteria (age, family income), it is seenthat the mean value of male (23.6000) is greater than that of the females (22.5593). The mean value of each question was calculated by descriptive statistics and a total mean of 22.9681 was obtained [Table 2].

Rotated component matrix was calculated for each question and only two components – Financial burden and Anxiety toward COVID-19 – were taken into consideration as the Eigene value of financial burden (5.668) and anxiety towardCOVID-19 (1.712) was statistically significant. Percentage variance of financial burden was 47.2 and anxiety toward COVID-19 was 14.2. Alpha Kaiser Normalization for financialburden was found to be 0.710 and 0.704 [Table 3].

On interpretation of the CDS, it is seen that among themales, 17.5% (n = 7) were found to have mild depression, 30% (n = 12) were found to have moderate depression,42.5% (n = 17) were found to have intermediate depression, and 10% (n = 4) were found to have high depression. Among thefemales, 16.9% (n = 10) were found to have mild depression,22% (n = 13) were found to have moderate depression,49.2% (n = 29) were found to have intermediate depression, and11.9% (n = 7) were foung to have high depression [Table 4].

On an average, about 17.2% (n = 17) of the participants had mild depression, 25.3% (n = 25) had moderate depression, 46.5% (n = 46) had intermediate depression, and 11.1% (n = 11) had high depression [Table 4].

On interpretation of the depression levels consideringthe designation as a variable, among the doctors, about 12.5% (n = 5) had mild depression, 27.5% (n = 11) had moderate depression, 45% (n = 18) had intermediate depression, 15% (n = 6) had high depression. Among the dentists, 26.7% (n = 8) had mild depression, 30% (n = 9)had moderate depression, 36.7% (n = 11) had intermediate depression, 6.7% (n = 2) had high depression. Among the nurses, 12.5% (n = 3) had mild depression, 16.7% (n = 4) had moderate depression, 62.5% (n = 15) had intermediate depression, 8.3% (n = 2) had high depression. Among the others, 20% (n = 1) had mild depression, 20% (n = 1) had moderate depression, 40% (n = 2) had intermediate depression, 20% (n = 1) had high depression [Table 5].

On an average, among the health-care workers, about 17.2% (n = 17) had mild depression, 25.3% (n = 25) had moderate depression, 46.5% (n = 46) had intermediate depression, 11.1% (n = 11) had high depression [Table 5].

Table 1: Comparison between the age and family incomeof the study population

Group statistics	Gender	*n*	Mean	SD	*P*
Age	Male	40	32.2000	9.50627	>0.05
	Female	59	31.1525	9.01496	
Family income	Male	40	81200.0000	108240.757	>0.05
	Female	59	68457.6271	67710.1637	
Total	Male	40	23.6000	6.22979	>0.05
	Female	59	22.5593	6.31165	

Table 2: Descriptive statistics of the study population

Descriptive statistics	Mean	SD	Analysis (*n*)
Scale	2.5638	0.89873	94
Are you feeling stressed on working even after knowing the consequences of COVID-19?	2.1170	0.77399	94
Do you feel hopeless during the management of COVID-19 pandemic?	2.5000	1.08509	94
Do you have any kind of fear that you will be affected by COVID in this pandemic?	2.1170	0.87813	94
Do you have any kind of fear that you will be the reason for the spread of disease amongyour family members in this pandemic?	2.1170	1.00382	94
Do you feel any kind of financial burden during the management of COVID-19 pandemic?	2.3085	0.90431	94
Do you find any difficulties in managing the daily household expenses in this pandemic?	2.4362	0.96785	94
Do you find any kind of difficulty in managing the medical needs?	2.3830	1.03805	94
Do you find it stressful when public ignores/dislikes your presence?	2.2872	1.04339	94
Do you feel that you have less time to spend with family members?	2.2340	1.10157	94
Do you feel sleep deprived because of the work burden during this pandemic?	2.4681	0.98048	94
Total	22.9681	6.43153	94

Table 3: Rotated component matrix

Rotated component matrix	Component	
	Financial burden	Anxiety toward COVID-19
Scale	−0.047	−0.688
Are you feeling stressed on working even after knowing the consequences of COVID-19?	0.183	0.693
Do you feel hopeless during the management of COVID-19 pandemic?	0.152	0.801
Do you have any kind of fear that you will be affected by COVID in this pandemic?	0.194	0.708
Do you have any kind of fear that you will be the reason for the spread of disease amongyour family members in this pandemic?	0.063	0.629
Do you feel any kind of financial burden during the management of COVID-19 pandemic?	0.826	0.242
Do you find any difficulties in managing the daily household expenses in this pandemic?	0.878	0.204
Do you find any kind of difficulty in managing the medical needs?	0.821	0.176
Do you find it stressful when public ignores/dislikes your presence?	0.468	0.647
Do you feel that you have less time to spend with family members?	0.583	0.419
Do you feel sleep deprived because of the work burden during this pandemic?	0.617	−0.070
Total	0.734	0.672
Eigene value	5.668	1.712
Percentage varience	47.2	14.2
Alpha Kaiser normalization	0.710	0.704

Table 4: Levels of depression among different gender

	0-25	25-50	50-75	75-100	Total
Gender					
Male					
Count	7	12	17	4	40
Percentage withingender	17.5	30.0	42.5	10.0	100.0
Female					
Count	10	13	29	7	59
Percentage within gender	16.9	22.0	49.2	11.9	100.0
Total					
Count	17	25	46	11	99
Percentage within gender	17.2	25.3	46.5	11.1	100.0

Table 5: Levels of depressions based on their designation

Designation	0-25	25-50	50-75	75-100	Total
Doctor					
Count	5	11	18	6	40
Percentage within designation	12.5	27.5	45.0	15.0	100.0
Dentist					
Count	8	9	11	2	30
Percentage within designation	26.7	30.0	36.7	6.7	100.0
Nurse					
Count	3	4	15	2	24
Percentage within designation	12.5	16.7	62.5	8.3	100.0
Other					
Count	1	1	2	1	5
Percentage within designation	20.0	20.0	40.0	20.0	100.0
Total					
Count	17	25	46	11	99
Percentage within	17.2	25.3	46.5	11.1	100.0

DISCUSSION

This pandemic has made the people to feel their own livesas so uncertain and has left them with socioeconomic stress and apprehension. This cross-sectional survey enrolled 100 respondents and revealed a high prevalence of mental healthsymptoms among health-care workers in Puducherry. Overall,47.2% and 14.2% of all participants reported experiencing factors contributing depression such as financial burden and anxiety to COVID-19, respectively.

Single doctors were found to be more prone to depression than the married as stated in a study done in Singapore.[11] However, in our study, it was found that the woman group demonstrated more levels of depression than the male and the women groupwere found to be at a lower age than the men.

According to a report, the most common factors contributingfor stress among the younger population was lack of social support, lack of communication with seniors, maladaptive coping, and lack of training.[10] This is in line with a cohort studydone in China which has shown that, in univariate analysis, even in normal conditions unlike this pandemic, the female health workers showed more stress levels.[8] and this pandemic situation would add up to the already existing levels of stressamong the female health-care workers.[8,9] In this study, it was found that the doctors showed high stress levels than thedentists, nurses, and the other health-care workers which is not in co-ordance with a review done on 23 articles related to stress and depression according to which the nurse population showedhigh stress levels than that of the other health-care workers.[12] The reason for this might be that the cases of COVID-19 arein continuous hike and our study population included doctorsinvolved in COVID-19 wards who are at a higher risk.

In a study done among the health care workers in China, it was seen that since the outbreak of the pandemic, about 9.47% of the medical personnel received psychological counseling and about 65.87% of the medical personnel neededpsychological counseling.[1] These pandemic projects to be amajor threat both in terms of physiological and psychological to the mankind. In China, this issue was well managed by using a psychological intervention comprising of 4 different teams namely, the psychosocial response team, psychological intervention technical support team, psychological intervention medical team, psychological assistance hotline teams.[6] As India seems to have a constant increase in positive cases alongwith numerous claims of death, it is essential to think more interms of the depression levels of the health-care workers and implement highly efficient strategies.

CONCLUSION

This study shows that there is a definitive level of depression among the health-care workers of Puducherry. Multidisciplinary mental health teams must be set up both at national and regional levels, especially in areas harboring more COVID-19 cases, to provide quality psychological support to the health-care workers. Periodic monitoring of the mental health status of the health-care workers has to be done and the factors contributing to depression have to be addressed by psychotherapeutic means and stress adaptation strategies must be made more familiar among the health-care workers.

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Conflicts of interest
There are no conflicts of interest.

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