Original Article

Access this article online

Quick Response Code:

Website: www.jehp.net

DOI: 10.4103/jehp.jehp_1388_20

Psychological consequences of lockdown on dental professionals during the early phase of the COVID-19 pandemic

Bhuvan Jyoti, Manisha Kiran[1], Rahul Srivastava[2], Vikas Jaiswal[1], Swati Kumari[1], Amitabh K. Sinha[3]

Dental Surgeon, Department of Dental Surgery, Ranchi Institute of Neuropsychiatry and Allied Sciences, Ranchi, Jharkhand, India, [1]Department of Psychiatric Social Work, Ranchi Institute of Neuropsychiatry and Allied Sciences, Ranchi, Jharkhand, India, [2]Department of Oral Medicine and Radiology, Rama Dental College Hospital and Research Centre, Kanpur, Uttar Pradesh, India, [3]Department of Oral Medicine and Radiology, Buddha Institute of Dental Sciences and Hospital, Patna, Bihar, India

Address for correspondence:
Dr. Bhuvan Jyoti, C 103, Harmu Housing Colony, Ranchi - 834 002, Jharkhand, India.
E-mail: drbhuvanjyoti@gmail.com

Received: 13-10-2020
Accepted: 15-04-2021
Published: 31-12-2021

Abstract:

BACKGROUND: Severe acute respiratory syndrome coronavirus 2, the virus that causes COVID-19, mainly spreads through respiratory droplets. The dental profession is particularly at risk. Routine dental care was suspended after the announcement of the first lockdown in India. This makes the group vulnerable to psychosocial consequences. The present study aims to evaluate the psychosocial issues among dental professionals during COVID-19 pandemic.

MATERIALS AND METHODS: A cross-sectional study was conducted among 627 dental professionals of India, using online Google Forms from April 23, 2020, through April 30, 2020. Participants were evaluated using self-constructed and self-administered personal and professional hardship and fear checklist specifically developed for this study. The 9-item Patient Health Questionnaire (PHQ-9) Depression Scale and 7-item Generalized Anxiety Disorder Scale and PHQ-15 were used to assess the depression, anxiety, and somatic symptoms.

RESULTS: Fear had a remarkable impact on 80.7% of responders. Among the participants, 40.5%, 24.5%, and 30.6% reported symptoms of depression, anxiety, and somatic symptoms, respectively. Somatic symptoms were significantly associated with gender ($P = 0.000$). Work setting was significantly associated with depression ($P = 0.011$) and anxiety symptoms ($P = 0.001$). Concern, worry, and fear due to COVID-19 were significantly associated with depression ($P = 0.000$), anxiety ($P = 0.033$), and somatic symptoms ($P = 0.009$). There was a positive correlation between depression and anxiety symptoms ($P = 0.01$) and between age and somatic symptoms ($P = 0.5$).

CONCLUSIONS: This group reported a high level of depression, anxiety, and somatic symptoms. Female dental professionals and private practitioners had more depression, anxiety, and somatic symptoms. Immediate and special intervention is needed for this group. Further exploration into the nature and its effects of the psychological symptoms may be required.

Keywords:

Anxiety, COVID-19, pandemic, stress disorders

Introduction

Effects of COVID-19 have become a serious public health concern[1] and have influenced every aspect of life.[2] The novel coronavirus was first identified and reported in the Chinese city of Wuhan in December 2019,[3] although South China Post (March 14, 2020) traced the first possible case back to November 17, 2019, in a 55-year-old individual from Hubei province in China. It spread quickly in many other countries, causing an outbreak of acute infectious pneumonia.[4] On March 11, 2020, the World Health Organization (WHO) has declared the novel coronavirus outbreak as a global pandemic.[5] The International

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Jyoti B, Kiran M, Srivastava R, Jaiswal V, Kumari S, Sinha AK. Psychological consequences of lockdown on dental professionals during the early phase of the COVID-19 pandemic. J Edu Health Promot 2021;10:472.

Committee on Taxonomy of Viruses has suggested the name "novel coronavirus" for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) because this virus is related to SARS-CoV species.[6]

The most common pathway of transmission of novel coronavirus is from person to person through direct or indirect contact[7] (indirect transmission like coughing, sneezing, and droplet inhalation transmission and direct transmission such as contact with oral, nasal, and eye mucous membranes).[8] Remarkably, Times of India in April 2020 reported that 69% of all cases could be asymptomatic in India, i.e. infected people would not show any signs of illness.[9]

A study suggested that COVID-19 may be airborne through aerosols formed during dental treatment.[10] Aerosols (<5 μm) containing SARS-CoV-2 (105.25 50% tissue-culture infectious dose per milliliter) were generated with the use of a three-jet Collison nebulizer and fed into a Goldberg drum to create an aerosolized environment. The virus can survive on aerosols for a few hours (3 h) and some above the surface for a few days (72 h after application to surfaces).[11] The dental profession is particularly at risk due to the possibility of generation of aerosols produced by saliva droplets.

Health-care professionals are vulnerable to psychological unease[12] including a high risk of infection, isolation, workload, and overwhelming number of patients with negative emotions. It has significantly resulted in a large number of psychosocial consequences as well as uncertainty about future; this in return can generate or exacerbate fear, depression, anxiety, distress, and insomnia. If this unease is extended, it may increase the risk of serious mental health conditions. Work-related stress disproportionately affects health-care workers[13] and is related to excessive workloads, emotionally charged environments where demand outweighs capacity. This harsh condition is causing mental health problems such as anxiety, depressive symptoms, insomnia, and fear. The mental health of adult medical workers has received widespread attention during the COVID-19 outbreak.[14] A recent study by Lai *et al*. suggests that among Chinese health-care workers, women, nurses, those in Wuhan, and frontline health-care workers have a high risk of developing adverse mental health outcomes; the study indicates that 50.4% of participants reported depressive symptoms, 44.6% reported anxiety, 34% reported insomnia, and nearly 71% reported distress, especially women, nurses, and those worked as frontline health-care workers and directly engaged in diagnosing, treating, or providing nursing care to patients with suspected or confirmed COVID-19. They need immediate psychological support or intervention.[15]

During a recent pandemic of SARS in 2003, half of health-care workers experienced psychological distress.[16] Risk factors for psychological distress included being quarantined, self-isolation, treating colleagues who were infected,[17] fear of infection,[18] job stress, perception of stigma, and concerns for family well-being.[17,19] A study conducted during COVID-19 outbreak on dental professionals in Israel revealed that 11.5% of dental professionals had the risk of elevated psychological distress.[20] Another study done by Ahmed *et al*. demonstrated that nearly 78% of dentists from 30 countries were anxious and fearful by the devastating effects of COVID-19.[21]

It is important to mention that dental care practice was suspended in January 2020, but 3 months later, it has started to gain impetus.[22] In India, dental clinics across the country have been advised to suspend all nonessential treatments from the first phase of lockdown (March 25, 2020, to April 14, 2020).[23] Only emergency and urgent dental care service was provided with advice on strict personal protection, avoiding surgeries and procedures that can generate production of droplets and aerosols.[24] Dental profession is at highest risk than any profession in relation to COVID-19.[25] Majority of the dentists are stressed and have fear to treat their patients during COVID-19 crisis.[21] A study revealed that the health-care professionals had lower anxiety levels in comparison to dentists toward pandemic flu.[26]

The COVID-19 pandemic outbreak has brought the world to a halt, however, the situation has now improved in most of the countries. Global lockdown has affected various professions and for quite a few protocols and guidelines post COVID-19 would be altogether a different one and would have to be incorporated as work ethics forever. One such profession is dentistry. Dental professionals have been concerned about their own health, their family's health, and their patient's health along with financial burdens during and post COVID-19. These issues have disturbed their psychological well-being and led to the present pilot study. To the best of our knowledge, there are no Indian studies regarding impact on psychological well-being of dental professionals due to COVID-19 outbreak till now, however, a recent Indian study described about the perceived stress and psychological distress among Indian endodontists during COVID-19 pandemic. The study was done on only one (postgraduate) specialization of dental professionals and did not include graduate/general dental practitioners. Results revealed that one in every two Indian endodontists had distress and four in every five of them had perceived stress. Female endodontists had higher perceived stress than male counterpart.[27] The objective of the present study is to assess the personal and professional hardship, fear, depression, anxiety, and

somatic symptoms among dental professionals during COVID-19 pandemic.

Materials and Methods

Study design and setting

It was a cross-sectional survey conducted among dental professionals of India, using an online Google Forms from April 23, 2020, to April 30, 2020.

Study participants and sampling

A total of 627 dental professionals participated in the study. The online survey link was circulated through a social media platform to dental professionals. Snowball sampling technique was used for collecting samples.

Data collection tool and technique

The focus of the study was to measure personal and professional hardship, fear, depression, anxiety, and somatic symptoms among dental professionals during COVID-19 pandemic. Depression, anxiety, and general health were assessed using a standardized scale, and the 9-item Patient Health Questionnaire (PHQ-9)[28] was used to assess the severity of depressive symptoms. The 7-item Generalized Anxiety Disorder (GAD-7)[29] was used to assess the severity of anxiety. PHQ-15[30] was used to assess the severity of somatic symptoms. PHQ-9 has a score range of 0–27 and GAD-7 has a score range of 0–21, which scores each of the item as "0" (not at all), "1" (several days), "2" (more than half the days), and "3" (nearly every day).[28,29] PHQ-15 has a score range of 0–30, which scores each of items as "0" not bothered at all, "1" bothered a little, and "2" bothered a lot.[30] The total scores of these measurement tools were interpreted as: PHQ-9, normal (0–4), mild (5–9), moderate (10–14), moderately severe (15–29), and severe (20–27) depression; GAD-7, normal (0–4), mild (5–9), moderate (10–14), and severe (15–21) anxiety; and PHQ-15, minimal (0–4), low (5–9), medium (10–14), and high (15–30) levels of somatization. The cutoff score for detecting symptoms of major depression, anxiety, and somatic symptoms was 10, 7, and 15, respectively.[28-30] PHQ-15 showed good internal consistency (Cronbach's α =0.80) in one study with 6000 participants from general internal medicine and family practice clinics.[30] The test–retest reliability for PHQ-9 was 0.91. PHQ-9 score was found to be positively correlating to SCL-20 (r = 0.46); it indicated that it was a valid measure of depression.[28] The internal consistency of the GAD-7 was excellent (Cronbach = 0.92). Test–retest reliability was also good (intraclass correlation = 0.83). The GAD-7 correlated most strongly with SF-20 in all the domains: mental health (0.75), followed by social functioning (0.46), general health perceptions (0.44), bodily pain (0.36), role functioning (0.33), and physical functioning (0.30).[29]

Two self-prepared checklists were specifically developed for the study to assess the personal and professional hardship during COVID-19 and fear. Personal and professional hardship checklists were divided into two parts: the first part assessed personal hardship and the second part assessed professional hardship during COVID-19. The fear during COVID-19 was assessed by the questions: have you been concerned, worried, or had any fears about coronavirus, fear of getting infected with COVID-19, fear of the loss of loved ones, fear of dying, fear of being put up in quarantine, fear to treat patients, worried/uncertainty about when the lockdown would end, and uncertain future.

The statistical analyses were done on IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp. and descriptive and parametric tests were employed wherever appropriate. The sociodemographic characteristics, personal and professional hardship, fear, depression, anxiety, and somatic symptoms were initially described using numbers and percentages; age was calculated through mean and standard deviation. Chi-square test was used to assess the association of demographic variables with level of depression, anxiety, and somatic symptoms. The intermatrix correlation between depression, anxiety, somatic symptoms, and age was analyzed by Pearson correlation test.

Ethical consideration

The research protocol was submitted for consideration, comment, guidance, and approval to the institute (Rama Dental College Hospital and Research Centre, Kanpur, Uttar Pradesh, India) Research Ethics Committee and approval was taken. Informed consent was taken by the participants and every precaution was taken to protect the privacy of research subjects.

Results

Total 627 dental professionals completed the survey across India during the study period "April 23, 2020, to April 30, 2020," in the second phase of lockdown in India which was from April 15, 2020, through May 03, 2020. Of the 627 respondents, 319 (50.9%) were male and 309 (49.1%) were female. The mean age of the respondents was 35.13 (7.98) years. The participants were mostly graduate (BDS) dentists (331 [52.8%]) and were married (481 [76.7%]). Majority of them belong to urban area of India (446 [71.1%]), worked as a private practitioner (444 [70.8%]), and their income <50,000/-month (338 [53.9%]).

Total 398 (63.5%) responders stated that their usual way of life was disturbed, and 305 (48.6%) responders were facing difficulties in terms of lack of domestic

help such as maids, labor, and cook. About 541 (86.3%) responders elucidated that their social life was disturbed, 17 (2.7%) responders experienced physical assault, and 111 (17.7%) responders experienced emotional assault during COVID-19. Around 296 (47.2%) responders stated that their family relationship strengthened during COVID-19, however, 28 (4.5%) responders reported that their family relationship was harmed during COVID-19 and 303 (48.3%) reported as usual/normal family relationship. In professional hardship criteria, 556 (88.7%) responders reported disturbed professional work, 114 (18.2%) reported loss of job, 177 (28.2%) responders were unpaid during lockdown, and 413 (65.9%) responders reported loss in income [Table 1].

Total 506 (80.7%) participants were concerned/worried or had fears due to COVID-19, in which 371 (73.3%) responders were afraid of getting infected, 274 (54.2%) responders were afraid of loss of loved ones, and 93 (18.4%) were fearful of dying due to COVID-19. About 131 (25.9%) responders feared of being put up in quarantine if they got infected, especially when their patients/contact person got infected due to COVID-19 (contact tracing). Around 274 (54.25) dental professionals feared or were concerned to treat patients during outbreak, as they did not know that their patients were infected or not (many of the patients in India currently are asymptomatic) due to lack of testing and false travel histories. Total 291 (57.5%) responders were worried that when the lockdown would end. Around 296 (58.5%) of the responders were worried about their future [Table 2].

Table 1: Personal and professional hardships during coronavirus disease 2019

Variables	*n*=627, *n* (%)
Personal hardship	
What you experienced as a result of COVID-19 pandemic? (click all that applies)	
Loss of usual way of life	398 (63.5)
Lack of domestic help (maids, labor, cook, assistants, etc.)	305 (48.6)
Disrupted social life	541 (86.3)
Physically assaulted	17 (2.7)
Emotionally assaulted	111 (17.7)
How did the COVID-19/lockdown affect your family relationship?	
Strengthened the relationship	296 (47.2)
Harmed the relationship	28 (4.5)
Same as before	303 (48.3)
Professional hardship	
What you experienced as a result of COVID-19 pandemic? (click all that applies)	
Disrupted professional work	556 (88.7)
Loss of job	114 (18.2)
Unpaid during lockdown	177 (28.2)
Loss of income	413 (65.9)

COVID-19=Coronavirus disease 2019

A significant percentage of responders had symptoms of depression 40.5% (n = 254), anxiety 24.5% (n = 155), and somatic symptoms 30.6% (n = 192). Whereas, the proportions of responders with mild, moderate, moderately severe, and severe depression were 21.2%, 12.6%, 4.8%, and 1.9%, respectively. Mild, moderate, and severe anxiety were seen in 15.3%, 6.4%, and 3.0% participants respectively, and somatic symptoms were in low (24.4%,), medium (4.5%) and high (1.7%) proportions [Table 3].

Chi-square tests were conducted to identify the association of depression, anxiety, and somatic symptom levels with demographic factors such as gender, education, marital status, work setting, monthly income, and domicile and fear. Demographic factor such as gender was significantly associated with somatic symptoms (P = 0.000) and work setting was significantly associated with depression (P = 0.011) and anxiety symptoms (P = 0.001). Concern, worry, and fear due to COVID-19 were significantly associated with depression (P = 0.000), anxiety (P = 0.033), and somatic symptoms (P = 0.009). It is worth noting that the education, marital status, monthly income, and domicile of dental professionals were not associated with level of anxiety and depression and somatic symptoms and hence were removed from further analysis [Table 4].

The correlation coefficient between depression (PHQ-9) and anxiety symptoms (GAD-7) was 0.189 with P = 0.01 and between age and somatic symptoms was 0.079 with P = 0.05 [Table 5].

Discussion

As there is no similar pertinent literature based on COVID-19, the present results cannot be supported or refuted. However, results in the literature review have supported that pandemics have increased loneliness and reduced social interactions.[31] The economic burden cannot be underestimated, as it could potentially influence all other spheres of life. If the world fails to protect the economy, COVID-19 will damage the overall health not just now but also in future.[32]

In the present study, 54.25% feared to treat patients during outbreak. Similarly, a worldwide survey reported that 87% of participants were fearful of getting infected with COVID-19 from any a patient or a co-worker.[21] More than 72% of participants felt nervous to treat patients in close vicinity, 92% were afraid about their families whereas, in the current study, about 54.2% reported the same, and 77% were afraid of getting quarantined if they got infected which was not in consonance to our study in which only 25.9% reported the same.[21]

Table 2: Fear in dental professionals due to coronavirus disease 2019

Question	Response	*n*=627, *n* (%)
Have you been concerned, worried, or had any fears about coronavirus?	Yes	506 (80.7)
	No	121 (19.3)
If yes, click all that applies	Response (*n*=506)	
	Fear of getting infected with COVID-19	371 (73.3)
	Fear of the loss of loved one's due to COVID-19	274 (54.2)
	Fear of dying due to COVID-19	93 (18.4)
	Fear of being put up in quarantine	131 (25.9)
	Fear to treat patients	274 (54.2)
	Worried/uncertainty about when the lockdown would end	291 (57.5)
	Uncertain future	296 (58.5)

COVID-19=Coronavirus disease 2019

Table 3: Severity categories of depression, anxiety, and somatic symptoms of dental professionals during coronavirus disease 2019

Scale	Total score, mean (SD)	Severity category	*n*=627, *n* (%)
PHQ-9 (depressive symptoms)	5.04 (5.16)	Normal	373 (59.5)
		Mild	133 (21.2)
		Moderate	79 (12.6)
		Moderately severe	30 (4.8)
		Severe	12 (1.9)
GAD-7 (anxiety)	3.15 (4.11)	Normal	472 (75.3)
		Mild	96 (15.3)
		Moderate	40 (6.4)
		Severe	19 (3.0)
PHQ-15	3.77 (3.87)	Minimal	435 (69.4)
		Low	153 (24.4)
		Medium	28 (4.5)
		High	11 (1.7)

PHQ=Patient Health Questionnaire, GAD=Generalized Anxiety Disorder, SD=Standard deviation

The pandemic has caused uncertainty about future.[31] H1N1 influenza (2209) and Ebola (2014), observed that there was a widespread fear-induced over-reactive behavior among the general public resulting in a significant psychological impact.[33,34]

In the current study, overall 40.5% of participants reported depressive symptoms, 24.5% reported anxiety, and 30.6% reported somatic symptoms, respectively. Around 11.5% of dentists in Israel had the risk of elevated psychological distress due to COVID-19 factor,[20] and health-care workers in China reported a high rate of depression (50.4%), anxiety (44.6%), insomnia (34.0%), and distress (71.5%).[35] Medical workers have been facing huge pressure, including a high risk of contagion, isolation, patients with negative emotions, and overwork.[35]

During SARS outbreak similar to the COVID-19 pandemic, health-care professionals experienced acute fragility, uncertainty, and risk to life, besides somatic and cognitive symptoms of anxiety[36] and psychological distress.[16] During the H1N1 (2009) pandemic, more than 50% of health-care workers reported moderately high anxiety and subsequent psychological distress in a Greek tertiary care hospital.[33] In China, pediatric medical staff reported anxiety and depression during COVID-19 outbreak.[37]

The association of sociodemographic was like the Indian study that assesses the perceived stress and psychological distress among Indian endodontists during COVID-19.[27] Female nurses (90%) in a Chinese survey reported severe symptoms of depression, anxiety, and stress.[35] Those females who reported specific physical symptoms and poor self-rated health status had a greater psychological impact of the outbreak and higher levels of stress, anxiety, and depression.[38]

The participants who worked as a private practitioner and were concerned, worried, or fearful due to COVID-19 had a higher score in depression, anxiety, and somatic symptoms in comparison to those who worked as government employees. Private practitioners were either not paid or did not have any income during the outbreak as routine dental care was suspended from January 2020.[24]

Intermatrix correlation between depression, anxiety, and somatic symptoms among dental professionals revealed a positive correlation between depression and anxiety, age, and somatic symptoms, respectively. The bidimensional model analysis found that there was a large positive correlation between anxiety and depression (r = 0.638).[39] The positive correlation between age and somatic symptoms was similar to the German study. The study demonstrated that when confounding was reduced, psychosocial factors (lack of social support, adverse life events, loneliness, depression, generalized anxiety, panic, and social phobia) remained the strongest predictors of somatic symptoms.[40]

Hence, strategies should be implemented for prevention, intervention, and management to reduce the adverse effect on mental health. However, the long term effects of

Table 4: Association of sociodemographic characteristics and concern/worried or fear due to coronavirus disease 2019 with level of depression, anxiety, and somatic symptoms

Scale	Gender				Work setting				Concerned, worried, or fears			
	Male, *n* (%)	Female, *n* (%)	χ^2/ Fisher's exact test	*P*	Private, *n* (%)	Government, *n* (%)	χ^2/ Fisher's exact test	*P*	Yes, *n* (%)	No, *n* (%)	χ^2/ Fisher's exact test	*P*
PHQ-9, depressive symptoms												
Normal	192 (51.5)	181 (48.5)	3.11	0.543	256 (68.6)	117 (31.4)	12.88	0.011*	268 (71.8)	105 (28.2)	47.16	0.000***
Mild	73 (54.5)	61 (45.5)			93 (69.4)	41 (30.6)			123 (91.8)	11 (8.2)		
Moderate	36 (45.6)	43 (54.4)			56 (70.9)	23 (29.1)			75 (94.9)	04 (5.1)		
Moderately severe	12 (40.0)	18 (60.0)			28 (93.3)	2 (6.7)			29 (96.7)	01 (3.3)		
Severe	6 (54.5)	5 (45.5)			11 (100)	00			11 (100)	0		
GAD-7, anxiety symptoms												
Normal	247 (52.2)	226 (47.8)	3.73	0.297	319 (67.4)	154 (32.6)	16.30	0.001***	371 (78.4)	102 (21.6)	8.66	0.033
Mild	48 (50.5)	47 (49.5)			78 (82.1)	17 (17.9)			85 (89.5)	10 (10.5)		
Moderate	18 (45.0)	22 (55.0)			28 (70)	12 (30)			32 (80.0)	8 (20.0)		
Severe	6 (31.6)	13 (68.4)			19 (100)	00			18 (94.7)	1 (5.3)		
PHQ-9, somatic symptoms												
Normal	255 (58.1)	184 (41.9)	37.62	0.000***	311 (70.8)	128 (29.2)	1.86	0.610	340 (77.4)	99 (22.6)	11.57	0.009**
Low	57 (38.3)	92 (61.7)			102 (68.5)	47 (31.5)			129 (86.6)	20 (13.4)		
Medium	3 (10.7)	25 (89.3)			22 (78.6)	6 (21.4)			26 (92.9)	2 (7.1)		
High	4 (36.4)	7 (63.6)			9 (81.8)	2 (18.2)			11 (100)	0		

*P<0.05, ** P<0.01, *** P<0.001. PHQ=Patient Health Questionnaire, GAD=Generalized Anxiety Disorder

Table 5: Intermatrix correlation between depression, anxiety, somatic symptoms, and age among dental professionals

	Correlation			
Variables	Depression symptoms (PHQ-9)	Anxiety (GAD-7)	Somatic symptoms (PHQ-15)	Age
Depression symptoms (PHQ-9)	1	0.189**		0.043
Anxiety (GAD-7)		1	0.047	
Somatic symptoms (PHQ-15)	0.044		1	0.079*
Age	0.043	0.055		1

*Significant at the 0.05 level (two-tailed), **Significant at the 0.01 level (two-tailed). PHQ=Patient Health Questionnaire, GAD=Generalized Anxiety Disorder

the study could not be established as when the COVID-19 outbreak would end then the severity of symptoms could vary, as shown in a previous study that SARS (2003) outbreak was stressful for health-care professionals but not for long term.[17] Otherwise, the persistence of these physical and psychological complications that could continue after COVID-19, may lead to further problem in both the quantity of life and quality of the workforce.[41]

Future directions

Looking into the near future, containing the COVID-19 epidemic is likely to take several months; public health interventions will be directed toward social distancing and improving hygienic practices. These interventions have to be balanced with getting back to normal life and everyday activities to the best extent possible until reversing the trajectory of the pandemic is traced. Antibody testing has to be implemented on a large scale to identify who is already immune to the virus. Multiple trials are currently underway to develop novel treatment options as well as a vaccine to treat the respiratory syndrome, but results are still awaited. Even though herd immunity develops over time, vulnerable groups as the health-care workforce and elderly people should still be preserved. In addition, timely identification, efficient diagnosis, rapid isolation, and clinical management would remain in the forefront.

Limitation and recommendation

This study has some limitations; therefore, the generalization of the result is limited. Data were collected in a short duration of time (8 days) during the last week of second-phase of the lockdown, if the study was done during increased outbreak in the fourth phase of

lockdown, the psychosocial consequences among dental professionals could have been even more severe.

Conclusions

Dental professionals having personal and professional hardship were not able to perform usual way of life, had impact on social life and family relationship, experienced emotional outbursts, and were even physically assaulted during COVID-19. It also included fear of getting infected while treating patients, worried about their loved ones, worried about their future, and reported a high rate of depression, anxiety, and somatic symptoms. Female dentists had more somatic symptoms; private practitioners had more depression and anxiety. Depression and anxiety, age, and somatic symptoms were positively correlated. Dental professional is an integral part of public health measures. Special interventions to promote mental well-being in dental professionals should be immediately implemented, with special care for female dentists and private practitioners. In the future, dental professionals should be trained for preparedness for such pandemics and be a part of disaster management committee. They also need social and financial security for that they can be absorbed into various government health schemes. This will generate a larger secured workforce that would be actively participated in the propagation of oral health-care needs of the general population and be well prepared psychosocially and financially to handle such pandemics.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

References

1. Gudi SK, Tiwari KK. Preparedness and lessons learned from the novel coronavirus disease. Int J Occup Environ Med 2020;11:1977-08.
2. Gralinski LE, Menachery VD. Return of the coronavirus: 2019-nCoV. Viruses 2020;12:135.
3. Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, *et al*. A novel coronavirus from patients with pneumonia in China, 2019. N Engl J Med 2020;382:727-33.
4. Bao Y, Sun Y, Meng S, Shi J, Lu L. 2019-nCoV epidemic: Address mental health care to empower society. Lancet 2020;395:e37-8.
5. World Health Organisation. WHO Director-General's Opening Remarks at the Media Briefing on COVID19 -March 2020; 2020. Available from: https://silverbelt.com/article/who-director-generals-opening-remarks-at-the-media-briefing-on-covid-19. [Last acessed on 2020 Sep 09].
6. Gorbalenya AE, Baker SC, Baric RS, de Groot RJ, Drosten C, Gulyaeva AA *et al.* Severe acute respiratory syndrome-related coronavirus – The species and its viruses, a statement of the Coronavirus Study Group. Nat Microbiol 2020;5:536-44.
7. Peng X, Xu X, Li Y, Cheng L, Zhou X, Ren B. Transmission routes of 2019-nCoV and controls in dental practice. Int J Oral Sci 2020;12:9.
8. Lu CW, Liu XF, Jia ZF. 2019-nCoV transmission through the ocular surface must not be ignored. Lancet 2020;395:e39.
9. Times of India/Times News Network. How Asymptomatic Cases Fuelled Spread of Coronavirus; 2020 Apr 23. Available from: http://timesofindia.indiatimes.com/articleshow/75292506.cms?utm_source=contentofinterest and utm_medium=text and utm_campaign=cppst_prime.
10. Wax RS, Christian MD. Practical recommendations for critical care and anesthesiology teams caring for novel coronavirus (2019-nCoV) patients. Can J Anaesth 2020;67:568-76.
11. van Doremalen N, Bushmaker T, Morris DH, Holbrook MG, Gamble A, Williamson BN, *et al.* Aerosol and surface stability of SARS-CoV-2 as compared with SARS-CoV-1. N Engl J Med 2020;382:1564-7.
12. Alkrisat M. The Impact of Workplace Stress and Stress of Conscience on the Moral Distress of Nurses in Acute Care Settings. Azusa, CA, USA: Ph.D. Thesis, Azusa Pacific University; 2011.
13. Russell H, Maître B, Watson D, Fahey É. Job stress and Working Conditions: Ireland in Comparative Perspective. In: An Analysis of the European Working Conditions Survey. The Economic and Social Research Institute.Whitaker Square, Sir John Rogerson's Quay, Dublin 2: Research Series; 2018.
14. Shanafelt TD, Mungo M, Schmitgen J, Storz KA, Reeves D, Hayes SN, *et al.* Longitudinal study evaluating the association between physician burnout and changes in professional work effort. Mayo Clin Proc 2016;91:422-31.
15. Xiang YT, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, *et al.* Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. Lancet Psychiatry 2020;7:228-9.
16. Tam CW, Pang EP, Lam LC, Chiu HF. Severe acute respiratory syndrome (SARS) in Hong Kong in 2003: Stress and psychological impact among frontline healthcare workers. Psychol Med 2004;34:1197-204.
17. Maunder RG, Lancee WJ, Balderson KE, Bennett JP, Borgundvaag B, Evans S, *et al.* Long-term psychological and occupational effects of providing hospital healthcare during SARS outbreak. Emerg Infect Dis 2006;12:1924-32.
18. Ho SM, Kwong-Lo RS, Mak CW, Wong JS. Fear of severe acute respiratory syndrome (SARS) among health care workers. J Consult Clin Psychol 2005;73:344-9.
19. Wong TW, Yau JK, Chan CL, Kwong RS, Ho SM, Lau CC, *et al.* The psychological impact of severe acute respiratory syndrome outbreak on healthcare workers in emergency departments and how they cope. Eur J Emerg Med 2005;12:13-8.
20. Shacham M, Hamama-Raz Y, Kolerman R, Mijiritsky O, Ben-Ezra M, Mijiritsky E. COVID-19 factors and psychological factors associated with elevated psychological distress among dentists and dental hygienists in Israel. Int J Environ Res Public Health 2020;17:2900.
21. Ahmed MA, Jouhar R, Ahmed N, Adnan S, Aftab M, Zafar MS, *et al.* Fear and practice modifications among dentists to combat novel coronavirus disease (COVID-19) outbreak. Int J Environ Res Public Health 2020;17:2821.
22. Meng L, Hua F, Bian Z. Coronavirus disease 2019 (COVID-19): Emerging and future challenges for dental and oral medicine. J Dent Res 2020;99:481-7.
23. Booth J. Be Prepared for COVID-19, but Don't Panic, Says Indian Dental Association. Dental Tribune; 2020 Mar 25. Available from: https://www.dental-tribune.com/news/be-prepared-for-covid-19-but-dont-panic-says-indian-dental-association/. [Last accessed on 2020 May 22].
24. Li RW, Leung KW, Sun FC, Samaranayake LP. Severe acute respiratory syndrome (SARS) and the GDP. Part II: Implications for GDPs. Br Dent J 2004;197:130-4.
25. Gamio L. The Workers Who Face the Greatest Coronavirus Risk.

The New York Times; 2020 Mar 15. Available from: https://www.nytimes.com/interactive/2020/03/15/business/economy/coronavirus-worker-risk.html. [Last accessed on 2020 Sep 10].
26. Mishra P, Bhadauria US, Dasar PL, N S, Kumar S, Lalani A, *et al.* Knowledge, attitude and anxiety towards pandemic flu a potential bio weapon among health professionals in Indore City. Przegl Epidemiol 2016;70:41-5, 125-7.
27. Nair AK, Chellaswamy KS, Kattula D, Thavarajah R, Mohandoss AA. Perceived stress and psychological (Dis) stress among Indian endodontists during COVID19 pandemic lock down. medRxiv 2020 Jan 1. DOI: 10.1101/2020.05.06.20092601. Available from: https://www.medrxiv.org/content/10.1101/2020.05.06.2009 2601v1.full.pdf. [Last accessed on 2020 Sep 10].
28. Kroenke K, Spitzer R. "The PHQ-9: A new depression diagnostic and severity measure." Psychiatr Ann 2002;32:509-15.
29. Spitzer RL, Kroenke K, Williams JB, Löwe B. A brief measure for assessing generalized anxiety disorder: The GAD-7. Arch Intern Med 2006;166:1092-7.
30. Kroenke K, Spitzer RL, Williams JB. The PHQ-15: Validity of a new measure for evaluating the severity of somatic symptoms. Psychosom Med 2002;64:258-66.
31. Fiorillo A, Gorwood P. The consequences of the COVID-19 pandemic on mental health and implications for clinical practice. Eur Psychiatry 2020;63:e32.
32. McKee M, Stuckler D. If the world fails to protect the economy, COVID-19 will damage health not just now but also in the future. Nat Med 2020;26:640-2.
33. Goulia P, Mantas C, Dimitroula D, Mantis D, Hyphantis T. General hospital staff worries, perceived sufficiency of information and associated psychological distress during the A/H1N1 influenza pandemic. BMC Infect Dis 2010;10:322.
34. Chong MY, Wang WC, Hsieh WC, Lee CY, Chiu NM, Yeh WC, *et al.* Psychological impact of severe acute respiratory syndrome on health workers in a tertiary hospital. Br J Psychiatry 2004;185:127-33.
35. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, *et al.* Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. JAMA Netw Open 2020;3:e203976.
36. Shultz JM, Cooper JL, Baingana F, Oquendo MA, Espinel Z, Althouse BM, *et al.* The role of fear-related behaviors in the 2013-2016 West Africa Ebola virus disease outbreak. Curr Psychiatry Rep 2016;18:104.
37. Chen Y, Zhou H, Zhou Y, Zhou F. Prevalence of self-reported depression and anxiety among pediatric medical staff members during the COVID-19 outbreak in Guiyang, China. Psychiatry Res 2020;288:113005.
38. 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 Environ Res Public Health 2020;17:1729.
39. Xie J, Bi Q, Li W, Shang W, Yan M, Yang Y, *et al.* Positive and negative relationship between anxiety and depression of patients in pain: A bifactor model analysis. PLoS One 2012;7:e47577.
40. Beutel ME, Wiltink J, Ghaemi Kerahrodi J, Tibubos AN, Brähler E, Schulz A, *et al.* Somatic symptom load in men and women from middle to high age in the Gutenberg Health Study – Association with psychosocial and somatic factors. Sci Rep 2019;9:4610.
41. Basudan S, Binanzan N, Alhassan A. Depression, anxiety and stress in dental students. Int J Med Educ 2017;8:179-86.