

Mental Health Status of Dental Professionals Posted For Swab Collection Duty during COVID-19: A Cross-Sectional Study.

Dr Bennett Atlin Correya¹, Dr Shony Mohan², Dr Stephanie Siby Koshy³(intern), Dr Deepa Austin⁴ (Public Health consultant, IIITB), Dr Hareesh M T⁵, Dr Jamshid Usman⁶

(Department of Prosthodontics, Government Dental College, Kozhikode)

Abstract:

Background: COVID-19 pandemic, with its highly contagious nature, rapid spread and high mortality rate have led to psychological unrest, and chaos around the globe, especially among healthcare workers. Our frontline health care workers (FHCW) have been burdened with the additional duty of swab collection, making it essential to understand how our FCHWs are coping with it. Hence this study was undertaken to assess the mental health status of dental professionals posted for swab collection

Objectives: To find the level of stress, anxiety about infection, exhaustion, workload, and feeling of being protected during the pandemic among dental professionals.

Methods: A cross-sectional observational study was conducted among dental professionals posted for swab collection duty in Malabar region. An online structured questionnaire was developed which recorded the sociodemographic details, anxiety about infection, exhaustion, workload, and feeling of being protected during the pandemic among dental professionals using a validated stress questionnaire.

Results: Response rate for the study was 86.4%. Anxiety about being infected, Anxiety due to being a frontline worker, and Anxiety of being infected while commuting was significantly more among dental faculties compared to the other groups. The burden of change in the quality of work, Feeling of being avoided by others, Feeling of being isolated, mental exhaustion and worrying whether the family will care were significantly higher among house surgeons compared to others (p value <0.05). Analysis concerning domains revealed that the highest mean score was reported for the domain 'anxiety about infection' and the lowest was for 'exhaustion.' Analysis of the domains with the designation revealed that anxiety about infection and feeling of being protected during the pandemic were predominately higher among dental faculties whereas exhaustion and workload were mostly seen in house surgeons. Overall the mean stress score was reported to be higher among house surgeons

Conclusion: Little effort has been made by the healthcare system to provide adequate mental support for doctors. It should also be an important part of public health policies to ensure the safety and welfare of dental professionals, and we need specialised programmes to support their mental well-being as well.

Keywords: COVID-19, dental professionals, mental health, stress, swab collection

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I. Introduction

India has been experiencing a massive surge of COVID-19 cases and deaths in several parts of the world. As of April 10, 2021, India is the 3rd leading country based on the USA and Brazil's identified cases. Starting as a mere local transmission from Wuhan city of China, Covid-19 has become a major catastrophe in the world. Since the middle of March 2021, the second wave has started, and on April 09, the highest number of cases (144,829) has been identified in India. The major affected states are Maharashtra, Kerala, Karnataka, Andhra Pradesh, Tamil Nadu, Andhra Pradesh, Delhi, Uttar Pradesh, and West Bengal.^{1,2}

Healthcare providers are vital resources for every country. Their health and safety are crucial not only for continuous and safe patient care but also for the control of any outbreak.³ Whenever situations like this arise, health care workers come into play a major role and doctors and other health care workers do not have the luxury of holding themselves up in their homes to protect themselves from the outbreak.² The mental health impact of a disease outbreak among health care providers is usually neglected during pandemic management although the consequences are costly. Early evidence has shown that health workers directly involved in the diagnosis, treatment, and care of patients with COVID-19 are at risk of developing mental health symptoms such as anxiety, depression, insomnia, and stress.^{2, 4, 5}

Front line health care workers (FHCW) including dental professionals, had to face additional challenges when they got exposed to an entirely new working environment in this stressful situation. It is necessary to gain insights into their lived experience to support them effectively.^{3,6} Therefore, it has become essential to understand how they think and react when they meet a pandemic of such magnitude. Hence this study was undertaken to assess the mental health status of dental professionals posted for swab collection duty during COVID-19.

II. Materials and Method

A cross-sectional observational study was conducted among the dental professionals posted for swab collection in the Malabar region. Ethical clearance was obtained by the Institutional Ethics Committee. The sample size was calculated according to the given formula.^[5]

$$\text{Sample Size (n)} = \frac{4Pq}{d^2}$$

Where,

N = Sample Size

p = Prevalence of the previous study (50% - worst case scenario)

q = 1-p

d = Precision of the study

With a precision of 5 %, the sample size required for the present study is calculated as 400.

Inclusion Criteria

- Dental Doctors who had been employed in swab collection duty were willing to participate in the study.

Exclusion Criteria

- Dental doctors already under consultation for psychiatric disorders
- Dental doctors already under medication for stress, anxiety

Study Procedure

A cross-sectional, observational study was conducted among the dental professionals posted for swab collection duty. Email ids of those dentists were collected by the investigator. An online structured questionnaire was developed, with a consent form attached to it. The link to the questionnaire was sent through e-mails and WhatsApp to the contacts of the participants. On receiving and clicking the link, the participants get auto-directed to the information about the study with informed consent. Once they accepted to take the survey, they had to fill in the demographic details. Then, a set of 20 questions appeared sequentially, which the participants had to answer.

The questionnaire was formed into two sections: the first section was for background data which included age, gender, specialization, and designation of the dental doctors, and the second section contains a self-reported stress questionnaire.⁶ The stress questionnaire comprises items contained in 4 sections: anxiety about infection, exhaustion, workload, and feeling of being protected during the pandemic. Each item will be rated on a 5-point Likert scale (1: not at all, 2: slightly, 3: definitely, 4: markedly, 5: very severely). Completeness and consistency were checked for the collected information and the results were collected anonymously on Survey Monkey (www.surveymonkey.com).

Statistical Analysis

Descriptive statistics of participants' responses to different questions were assessed using IBM SPSS (Statistical Package for Social Sciences) Version 21.0, Chicago. Each item of the stress questionnaire was summarized as mean and standard deviation. ANOVA was used to compare stress questionnaire item scores across various designations.

III. Results

Among 414 responses obtained, a total of 358 completed questionnaires were amenable to statistical analysis yielding a response rate of 86.4%. The majority of the respondents were single (53.7%) with a female predominance (68.5%) belonging to an age group of 20 and 29 years (71.6%). Most of the respondents were constituted by postgraduates (39.87%) (Table 1). The highest stress score was seen in the item "anxiety about infecting family." The least stress scores were seen in the item "Worrying whether the family will care". "Anxiety about being infected", "Anxiety due to being a frontline worker", and "Anxiety of being infected while commuting" were significantly ($p < 0.05$) higher among dental faculties compared to the other groups. "Burden of change in the quality of work", "Feeling of being avoided by others", "Feeling of being isolated", "mental exhaustion" and "worrying whether the family will care" were significantly higher among house surgeons compared to others (Table 2). Analysis for domains revealed that the highest mean score was reported for the domain 'anxiety about infection' and the lowest was for 'exhaustion'. The total mean score of the stress

questionnaire was 39±10.5 as shown in Table 3. Analysis of the domains in relation to the designation revealed that anxiety about infection and feeling of being protected during the pandemic were predominately more among dental faculties whereas exhaustion and workload were mostly seen in house surgeons. Overall the mean stress score was reported to be higher among house surgeons as depicted in Table 4.

IV. Discussion

The new coronavirus disease 2019 (COVID-19) is currently a threat to global health in an unprecedented manner. FHCWs play a crucial role in providing care to infected persons. They are working in a situation beyond their capacities, and the risk of contracting the infection poses them a risk of mental health problems. Literature suggests a high prevalence of mental health problems among front-line workers (such as burnout, insomnia, anxiety, depression, illness anxiety, PTSD, and so on) which is mediated by various biopsychosocial factors. Despite this, the mental health issues of the FHCWs and other health workers are often overlooked. It is considered that such disasters are often faced by this group of population and hence they would be able to manage themselves well.^{5,7,8,9,10} According to the study conducted by Fasalulla. O et al. dentists who are working during the COVID-19 pandemic reported various psychiatric morbidities. It was seen that 30.33% of dentists were depressed, 27.4% were anxious and 15.6% were stressed which is surely an alarming situation. Hence this study is the first of its kind to exclusively evaluate the mental health status of dental professionals posted for swab collection duty during COVID-19.

The ever-increasing number of confirmed and suspected cases, devastating workload, stretched working hours, shortage of specialist staff, inadequate PPE, lack of FDA-approved prophylactic drugs or specific vaccines, and feelings of inadequately supported may all contribute to the stress in FHCWs. Among the various stressors associated with the COVID-19 outbreak, safety was the major concern for the FHCWs according to the study conducted by Khanam et al.⁶ whereas in our study the highest stress score was seen for the item anxiety about infecting the family. Seeing their colleagues displaying COVID-19-like symptoms, testing positive or getting intubated, and patients dying in front of them from COVID-19, as well as the fear that they could transmit the disease to their families or friends were extremely stressful situations faced by FHCWs. According to Lee et al. other significant stressors experienced by the FHCWs, were whether their family would be looked after in their absence and whether compensation will be provided to them if they died of COVID-19 infection.¹¹

According to the study conducted by Khanam et al.⁶ stress due to the burden of an increase in the quantity of work was more in FHCWs working in swab collection centres. To identify the asymptomatic cases and to save the region from catastrophe, they were pushed for aggressive testing.¹² In our study, the highest stress score was seen among house surgeons followed by dental faculties posted for swab collection duty. House surgeons who are extremely new to this unusual situation probably resulted in increased stress scores among them. The rapid escalation in cases, staggering death figures exceeding those of previous pandemics, provision of inadequate PPE such as N95 masks or face shields, splash shields, and centrifuge safety cups, and increase in death toll among doctors might have caused the heightened response in the FHCWs.⁶

V. Conclusion

Highest stress score was seen among house surgeons followed by dental faculties posted for swab collection duty. Little effort has been made by the healthcare system to provide adequate mental support for doctors. It should also be an important part of public health policies to ensure the safety and welfare of dental professionals, and we need specialised programmes to support their mental well-being as well.

Table 1: Demographic Characteristics of Study Participants

Variable	Frequency
Age	
20-29 years	71.6%
30-39 years	19.1%
Above 40	9.3%
Gender	
Males	31.5%
Females	68.5%
Designation	
General Dentists	25.95%
Postgraduates	39.87%
Dental Faculties	16.46%

House surgeons	17.72%
Marital Status	
Yes	46.3%
No	53.7%

Table 2: Responses to Stress Questionnaire in relation to the Designation of the Study Participants

Variable	General Dentists	Postgraduates	Dental Faculties	House surgeons	P value
Anxiety about being infected	2.19±1.03	2.39±0.95	2.84±0.92	2.71±1.35	0.04*
Anxiety about infecting family	3.04±1.13	3.26±1.18	3.23±0.99	3.71±1.04	0.11
Anxiety due to being a frontline worker	1.9±1.01	2.15±1.1	2.76±1.06	2.35±1.49	0.03*
Anxiety due to colleagues testing positive	2.51±1.18	2.77±1.19	3.07±0.93	2.92±1.18	0.22
Anxiety of being infected while commuting.	2.24±0.88	2.49±1.14	3.0±1.05	2.71±1.3	0.04*
Burden of an increase in the quantity of work	2.51±1.2	2.73±1.15	3.0±1.2	2.7±1.3	0.405
Burden of change in the quality of work	2.36±1.11	2.76±1.18	3.0±1.2	3.3±1.2	0.008*
Change in motivation to work	2.12±1.16	2.3±1.1	2.57±1.1	2.10±0.7	0.334
Feeling of being avoided by others	1.6±0.9	2.04±1.06	1.88±0.76	2.6±1.1	0.001*
Feeling of being protected by national and local governments	2.51±1.02	2.3±0.9	2.5±0.9	2.03±0.8	0.183
Feeling of being protected by hospital authorities	2.5±1.02	2.2±0.9	1.96±0.9	2.1±0.8	0.112
Feeling of being isolated	1.5±0.8	2.03±1.04	1.9±0.7	2.17±1.02	0.04*
Feeling sad and pessimistic	1.5±0.8	2.14±1.2	2.11±1.1	2.07±1.1	0.06
Mental exhaustion	2.3±1.1	2.9±1.2	2.9±1.2	3.03±1.1	0.03*
Physical exhaustion	2.4±1.2	2.8±1.1	2.9±1.1	3.03± 1.17	0.167
Worrying whether the family will care	1.43±0.77	1.8±1.21	1.8±1.12	2.3±1.47	0.01*

Table 3: Mean scores of the included domains

Domains	Mean Score
Anxiety about infection	13.3± 4.5
Exhaustion	7.43 ±2.9
Workload	7.7 ±2.74
Feeling of being protected during the pandemic	10.4 ±2.6
Total	39.± 10.5

Table 4: Mean scores of the included domains in relation to the designation of the participants

Domains	Mean scores			
	General Dentists	Postgraduates	Dental Faculties	House surgeons
Anxiety about infection	11.9 ±3.7	13.09± 4.6	14.9± 3.7	14.4 ±5.7
Exhaustion	6.2±2.4	7.6 ±2.8	7.7 ±2.9	8.4 ±3.2
Workload	9.8 ±2.5	10.6 ±2.8	10.3 ±2.5	11±2.2
Feeling of being protected during the pandemic	7. ±2.8	7.7 ±2.7	8.6 ±2.7	8.1 ±2.4
Total	34.9 ±8.5	39.2± 10.6	41.6 ±9.8	41.9 ±12.1