Emotional well-being of dentists and the effect of lockdown during the COVID-19 pandemic: A nationwide study

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Abstract:

BACKGROUND: Lockdown in India might have adverse effects on the emotional health of the dental professionals; hence, the aim of the present study was to determine the impact of various factors on emotional well-being of dental professionals due to the effect of lockdown during COVID-19.

MATERIALS AND METHODS: It was a cross-sectional, descriptive, questionnaire study conducted on dentists in India during April 2020. Sampling technique was convenient sampling, and sampling frame was all the dental professionals in India. The questionnaire was prepared online using Google Forms, and the link was generated which was shared among as many dentists accessible as possible, with the help of message, mails, and WhatsApp. The questionnaire consists of questions on Demographic details, practice, and emotional well-being. A total of 1844 dental professionals in 14 states in India responded. The statistical analysis was done using SPSS version no. 20. IBM SPSS version 20.0 (IBM; Armonk, New York USA) Descriptive statistics and multinomial regression test was applied.

RESULTS: Majority of study participants (1096 [59.4%]) belonged to age group of 26–35 years. Emotional well-being score of 1206 (65.4%) dental professionals in the times of COVID-19 outbreak was poor with score between 26 and 78. It was assessed that males have significantly (P = 0.00**) (P < 0.001**) (**highly significant) poorer emotional well-being 0.085 (0.829–1.429) compared to females. Married dental professionals – 0.023 (0.011–1.221) had significantly better (highly significant) poorer emotional well-being 0.085 (0.829–1.429) compared to females. Married dental professionals – 0.023 (0.011–1.221) had significantly better (P = 0.05*) emotional well-being than others.

CONCLUSION: Emotional well-being score of majority of dental professionals in the times of COVID-19 outbreak was poor. Gender, marital status, socioeconomic status, years of experience, practicing in clinic, and average number of patients seen per month before lockdown have significant impact on emotional wellbeing of dental professionals.

Keywords:
COVID-19, dental professionals, dentistry, emotionalwell-being, lockdown, pandemic, quality of life

Introduction

A ccording to the Mental Health Foundation, emotional well-being is usually defined as: “A positive sense of well-being that enables an individual to be able to function in society and meet the demands of everyday life; people in good mental health have the ability to recover effectively from illness, change, or misfortune.”[1]

Emotional well-being is referred to as the emotional quality that an individual experiences.[2] Emotional well-being is influenced by a variety of economic, demographic, and situational factors. For example, emotional well-being was lowered by 74% on the onset of the COVID-19 pandemic.
outbreak. The consequence of reduced emotional well-being are related to mental health concerns such as depression, anxiety, and stress. In turn, contributes to physical health concerns such as sleep disturbances, general lack of energy, and digestive disorders.

On the bright side, improved emotional well-being contributes to a rise in increasing coping ability, productivity at work, self-esteem, longevity, and performance.

COVID-19 infection as a mild-to-severe respiratory illness caused by a coronavirus (severe acute respiratory syndrome coronavirus 2 [SARS-CoV2] of the genus beta coronavirus). It is transmitted mainly by contact with infectious material (such as respiratory droplets) or with surfaces or objects contaminated by the causative virus. It is characterized by fever, sore throat, and shortness of breath which may progress to pneumonia and respiratory failure. COVID-19 infection is caused by a novel coronavirus, SARS-CoV2 that began in Wuhan, China, in late 2019 and spread worldwide.

Given the widespread transmission of SARS-CoV-2 and reports of its spread to health-care providers, they can also become potential carriers of the disease and are at high risk for nosocomial infection. These risks can be due to the unique nature of dental procedures, which include, aerosol generation, handling of sharps, and proximity of the dentist to the patient’s oropharyngeal region.

The lockdown situation due to COVID-19 infection around the world has affected a large number of dentists in every aspect of their life physically, mentally, and economically. A wave of stress, depression, and psychological breakdown is prevalent among dental professionals with closure of dental practice and no clarity in future about resumption of work.

Emotions such as fear and anxiety may be correlated with the distressing reports on the COVID-19 pandemic by electronic, social, and print media. Mild anxiety is natural and encourages guarding and defensive behavior. In the present situation, people with persistent anxiety may dread and are more likely to make irrational decisions and show irrational behavior. Since dentists are on the list of high-risk professions, severe anxiety about the current COVID-19 situation is very much expected to develop. In such a tensed condition, even though the ADA has published preventive guidelines; the majority of dentists are still in fear and doubt to treat patients.

Due to COVID-19 outbreak, in the past 2 months and above, dental practice in India has come to a halt foreseeing the risk involved. Even after some relaxation in many states, dentists are given guidelines to restrict their practice to emergency services or consultations only. This has affected the whole dental fraternity irrespective the sector, in which the dentists are working in every aspect that is socially, economically, and emotionally. Over that, the risk involved in every case due to contagious and asymptomatic nature of this disease has made the situation worse, leading to emotional breakdown. On research front, to the best of our knowledge in India, no study is conducted till now to assess emotional well-being of dental professionals during the COVID-19 outbreak or impact of factors on it. It is very important to determine the factors impacting the emotional well-being of dental professionals so that they can be manipulated to improve their emotional state. Therefore, the aim of the present study is to determine the impact of various factors on emotional well-being of dental professionals due to the effect of lockdown during the COVID-19 pandemic.

Materials and Methods

Study design
The present study was a cross-sectional, descriptive, questionnaire study conducted on dental professionals in India.

Sampling technique
The sampling technique was convenient sampling, and sampling frame was all the dental professionals in India. The study was conducted by six investigators.

Study settings
The questionnaire was prepared online using Google Forms, and the link was generated which was shared among as many dentists accessible as possible, with the help of message, mails, and WhatsApp and then responses were recorded. Reminder messages were also given to increase the response rate. The study was conducted in April 2020. The responses were accepted for 15 days after sharing the link. A total of 1844 dental professionals in 14 states in India responded.

Ethical consideration
Due to lockdown, ethical approval was obtained from ethical committee of R. R Dental College (RR-RD2020145).

Before the start of main survey, a pilot study was conducted on 10% of total sample size to check the validity and reliability of questionnaire. Internal consistency and reliability of questionnaires were measured by applying Cronbach's-Alpha (α) and Test-Retest. The value obtained was α = 0.91, Kappa (k) = 0.84 Weighted Kappa (k_w) = 0.87. Those questions with less validity and reliability were removed.
Data collection tool and technique
A questionnaire was prepared to assess the emotional well-being of dental professionals due to the effect of lockdown during the COVID-19 pandemic. It consisted of three parts; first part was about the demographic details of study participants such as age, gender, education, socioeconomic status, religion, marital status, and years of experience. Second part consisted of practice details of study participants which included practicing in clinic or not, average number of patients seen per month before lockdown, nature and type of practice, location of practicing field, and practice closed due to outbreak. Third part consisted of 26 questions on emotional well-being of dental professionals. Responses to these questions were assessed on Likert scale ranging from strongly agree – 5, agree – 4, uncertain – 3, disagree – 2, and strongly disagree – 1. The score for emotional well-being ranged from 26 to 130. The score was divided into two categories where in the poor was given a score from 26 to 78 and good was given 79–130 score.

Statistical analysis
Descriptive statistics was used to determine demographic details, practice details, emotional well-being details, and scores. Impact of various factors on emotional well-being of dental professionals due to the effect of lockdown during the COVID-19 pandemic was assessed using Multinomial Logistic Regression model, keeping good emotional well-being as reference category and keeping significance level at 0.001 highly significant and 0.05 as significant.

Results
Response rate of the present study was 84% with 1844 responded to survey out of 2183 respondents.

Table 1 shows that majority of study participants (1096 [59.4%]) belonged to age group of 26–35 years. Male study participants (1280 [69.4%]) were more than the female participants. Hindu Study participants (1481 [80.3%]) were in majority. Most of the study participants (1101 [60.5%]) were having BDS degree. Among specialists dental professionals majority of them belonged to department of Oral and Maxillofacial Surgery (96 [14.93%]). Years of experience among 872 (47.3%) study participants were 1–5 years.

Table 2 shows that, out of all study participants, 1346 (73%) study participants were practicing in clinic and (629 [34.10%]) in private sector. Solo practice (a clinic where single dentist practices) was the trend among 610 (30.20%) study participants. Location of practicing field for 1111 (60.20%) of dental
professionals was urban. Practice of majority of study participants (1355 [73.50%]) was closed due to COVID-19 outbreak.

Table 3 shows majority of dental professionals (799 [43.3%]) strongly agree with the statement that coronavirus outbreak in India is a very serious health situation and can be handled with the help of complete lockdown. Most of the dental professionals (941 [51%]) were suffering from anxiety and depression. Lockdown will have a bad impact on dental practice in future, was the perspective 786 (42.6%) of dental professionals. The main source of information on COVID-19, for majority of study participants (845 [45.8%]), is social media platform or private news channel [Table 3].

Emotional well-being score of 1206 (65.4%) dental professionals in the times of COVID-19 outbreak was poor with score between 26 and 78 [Table 4].

On applying logistic regression model, it was assessed that males have significantly ($P = 0.00^{**}$) poorer emotional well-being $0.085 (0.829–1.429)$ as compared to females. Married dental professionals $-0.023 (0.011–1.221)$ have significantly better ($P = 0.05^*$) emotional well-being than others. Postgraduate students have significantly ($P = 0.00^{**}$) poorer emotional well-being $0.330 (0.752–2.573)$. Dentists belonging to middle socioeconomic status has significantly ($P = 0.00$) better emotional well-being than lower class. Significantly ($P = 0.00^{**}$) poorer emotional well-being was prevalent among dental professionals with least years of experience $0.411 (0.972–2.340)$. Emotional well-being of dental professionals working in a clinic was significantly ($P = 0.05^*$) poor $0.260 (0.551–1.079)$. Dental professionals with average number of patients (11–20) seen per month before lockdown were having significantly better emotional well-being $-0.123 (0.634–1.233)$. Emotional well-being of dental professionals working in government sector $-0.806 (1.457–3.436)$ and academic sector $-0.839 (1.473–3.637)$ was significantly ($P = 0.00$) better than others. Dental professionals working in hospitals were ($P = 0.05^*$) better emotionally $-0.176 (0.431–0.1365)$ [Table 5].

### Table 1: Contd...

| Demographic variables | n (%) |
|-----------------------|-------|
| Years of experience (years) |       |
| 1-5                   | 872 (47.3) |
| 6-10                  | 471 (25.6) |
| 11-15                 | 290 (15.7) |
| >15                   | 211 (11.4) |
| Total                 | 1844 (100) |

### Table 2: Practice details of study participants ($n=1844$)

| Demographic variables | n (%) |
|-----------------------|-------|
| Practicing in clinic  |       |
| Yes                   | 1346 (73) |
| No                    | 498 (27) |
| Total                 | 1844 (100) |
| Average number of patients seen per month before lockdown | |
| 1-10                  | 297 (16.10) |
| 11-20                 | 573 (31.10) |
| 21-30                 | 241 (13.10) |
| >30                   | 732 (39.70) |
| Total                 | 1844 (100) |
| Nature of practice    |       |
| Private sector        | 629 (34.10) |
| Government sector     | 534 (29.00) |
| Academic sector       | 398 (21.60) |
| More than one type of sector | 283 (15.30) |
| Total                 | 1844 (100) |
| Type of practice      |       |
| Solo                  | 610 (30.20) |
| Group                 | 556 (33.10) |
| Hospital              | 397 (21.50) |
| More than one type of practice | 281 (15.20) |
| Total                 | 1844 (100) |
| Location of practicing field | |
| Urban                 | 1111 (60.20) |
| Peri-urban            | 485 (26.30) |
| Rural                 | 172 (9.30) |
| More than one type of location | 76 (4.20) |
| Total                 | 1844 (100) |
| Practice closed due to outbreak | |
| Yes                   | 1355 (73.50) |
| No                    | 159 (8.60) |
| Only emergency patients | 330 (17.90) |
| Total                 | 1844 (100) |

### Discussion

Emotional well-being among dental professionals during COVID-19 in India is an area of concern, which has not been addressed till now. The main area of concern in the times of COVID-19 outbreak is the health professionals who are the frontline warriors against the deadly diseases and should be taken care of but not at the expense of other health professionals such as dentists, who are at much more risk than health professionals.

With, all resources used at single target of controlling the virus, and researches conducted to support the general health workers, the mental health of dental professionals is being ignored to a large extent, and to add to this situation, fake news in various social media platforms has created confusion, leading to increase in the risk by many folds.
Table 3: Emotional well-being details of study participants (n=1844)

| Domain                                                                 | Strongly agree, n (%) | Agree, n (%) | Uncertain, n (%) | Disagree, n (%) | Strongly disagree, n (%) | No answer, n (%) | Total, n (%) |
|------------------------------------------------------------------------|-----------------------|--------------|------------------|-----------------|-------------------------|-----------------|--------------|
| Q1. Corona virus outbreak in India is a very serious health situation and can be handled with the help of complete lockdown | 799 (43.3)            | 156 (8.5)    | 125 (6.8)        | 394 (21.3)      | 370 (20.1)              | 0               | 1844 (100)   |
| Q2. Due to the lockdown, dental professionals in India are not suffering from anxiety and depression | 52 (2.8)              | 115 (6.2)    | 472 (25.6)       | 941 (51.0)      | 264 (14.3)              | 0               | 1844 (100)   |
| Q3. As a dental professional I am taking this lockdown as an opportunity to re-energies myself from the busy schedule | 133 (7.2)             | 294 (15.9)   | 235 (12.7)       | 858 (46.5)      | 324 (17.6)              | 0               | 1844 (100)   |
| Q4. During the period of lockdown government should not allow dental professionals to practice due to risk of spread of COVID-19 infection | 244 (13.2)            | 221 (12.0)   | 167 (9.1)        | 605 (32.8)      | 607 (32.9)              | 0               | 1844 (100)   |
| Q5. Lockdown due to COVID-19 will not have a bad impact on dental practice in future | 80 (4.3)              | 109 (5.9)    | 466 (25.3)       | 786 (42.6)      | 403 (21.9)              | 0               | 1844 (100)   |
| Q6. During the lockdown, priority of practicing dentistry has become secondary | 128 (6.9)             | 335 (18.2)   | 201 (10.9)       | 923 (50.1)      | 257 (13.9)              | 0               | 1844 (100)   |
| Q7. I shut down my dental clinic, foreseeing the risk of spread of COVID-19 infection and not due to advisory by dental council of India/ministry of health and family welfare | 190 (10.3)            | 299 (16.2)   | 191 (10.4)       | 521 (28.3)      | 286 (15.5)              | 357 (19.4)     | 1844 (100)   |
| Q8. I had continued my dental consultation online to help my patients during lockdown | 234 (12.7)            | 278 (15.1)   | 172 (9.3)        | 668 (36.2)      | 492 (26.7)              | 0               | 1844 (100)   |
| Q9. At this time, not practicing dentistry is the main contribution of dentist towards containment of this disease | 296 (16.1)            | 271 (14.7)   | 148 (8.0)        | 586 (31.8)      | 543 (29.4)              | 0               | 1844 (100)   |
| Q10. During lockdown, I think dentists could also help other health professionals for the containment of COVID-19 infection | 603 (32.7)            | 288 (15.6)   | 215 (11.7)       | 271 (14.7)      | 467 (25.7)              | 0               | 1844 (100)   |
| Q11. I think conditions for practicing dentistry in India would be better after the second lockdown | 114 (6.2)             | 210 (11.4)   | 738 (40.0)       | 617 (33.5)      | 165 (8.9)               | 0               | 1844 (100)   |
| Q12. During this period of lockdown, I think it is practically impossible for a dental professional to follow all the precautionary guidelines in a private practice | 265 (14.4)            | 699 (37.9)   | 210 (11.4)       | 275 (14.9)      | 395 (21.4)              | 0               | 1844 (100)   |
| Q13. Once the lockdown ends, still, there will be a need to follow all the mentioned precautions to start usual dental practice to prevent spreading of infection even after few months | 411 (22.3)            | 229 (12.4)   | 81 (4.4)         | 431 (23.4)      | 692 (37.5)              | 0               | 1844 (100)   |
| Q14. During lockdown, I am gathering all information about COVID-19 which can affect the dental practice | 263 (14.3)            | 336 (18.2)   | 130 (7.0)        | 692 (37.5)      | 423 (22.9)              | 0               | 1844 (100)   |
| Q15. During lockdown, I am not suffering from anxiety and depression and there is no need for me to follow every message or news regarding COVID-19 on different social media platform | 208 (11.3)            | 255 (13.8)   | 282 (15.3)       | 785 (42.6)      | 314 (17.0)              | 0               | 1844 (100)   |
| Q16. The main reason of anxiety or depression among dental professionals is the confusion created by fake news on different social media platform | 210 (11.4)            | 741 (40.2)   | 377 (20.4)       | 269 (14.6)      | 247 (13.4)              | 0               | 1844 (100)   |

Contd...
Table 3: Contd...

| Q   | Strongly agree, n (%) | Agree, n (%) | Uncertain, n (%) | Disagree, n (%) | Strongly disagree, n (%) | No answer, n (%) | Total, n (%) |
|-----|-----------------------|--------------|------------------|----------------|--------------------------|-----------------|--------------|
| Q18 | 192 (10.4)            | 845 (45.8)   | 263 (14.3)       | 294 (15.9)     | 250 (13.6)               | 0               | 1844 (100)  |
| Q19 | 331 (18.0)            | 268 (14.5)   | 171 (9.3)        | 576 (31.2)     | 498 (27.0)               | 0               | 1844 (100)  |
| Q20 | 329 (17.8)            | 284 (15.4)   | 152 (8.2)        | 600 (32.5)     | 479 (26.0)               | 0               | 1844 (100)  |
| Q21 | 314 (17.0)            | 307 (16.4)   | 179 (8.3)        | 609 (33.0)     | 435 (23.6)               | 0               | 1844 (100)  |
| Q22 | 289 (13.4)            | 418 (22.7)   | 262 (14.2)       | 599 (32.5)     | 276 (12.8)               | 0               | 1844 (100)  |
| Q23 | 208 (11.3)            | 298 (16.2)   | 320 (17.4)       | 734 (39.8)     | 284 (15.4)               | 0               | 1844 (100)  |
| Q24 | 188 (10.2)            | 342 (18.2)   | 260 (14.1)       | 805 (43.7)     | 249 (13.5)               | 0               | 1844 (100)  |
| Q25 | 168 (9.1)             | 300 (16.3)   | 452 (20.9)       | 731 (39.6)     | 193 (10.5)               | 0               | 1844 (100)  |
| Q26 | 146 (7.9)             | 189 (10.2)   | 441 (23.9)       | 810 (43.9)     | 258 (14.0)               | 0               | 1844 (100)  |
| Q27 | Earlier I thought dentistry was enough for my finances but now I think a side business too is also the need of the hour. I need to take sterilization and disinfection more seriously and follow proper protocol and guidelines which I did not bother to follow before. Earlier I thought dentists are safer than other health professionals but now I think dentists are at greater highest risk than any other health professionals. I skipped taking proper history of patients before, but now I feel detailed history is as important as the clinical procedure. |

ICMR=Indian council of medical research

Table 4: Emotional well-being scores of study participants (n=1844)

| Emotional well-being score | n (%) |
|----------------------------|-------|
| Good (79-130)              | 638 (34.6) |
| Poor (26-78)               | 1206 (65.4) |
| Total                      | 1844 (100) |

The present study is conducted to evaluate emotional well-being of dental professional and factors impacting it, as due to lockdown for containment of COVID-19 and in times of unlock 1.0. Dental professionals do not get any relaxation which has affected the dentists in India in all aspects, leading to emotional breakdown and decreased working efficiency. Being, not able to work in stress free environment and seeing the plight of the patients suffering from dental diseases has increased the frustration which should be addressed in proper manner. The study can be used as starting point to focus on this issue.

In the present study, impact of demographic variables on emotional well-being is evaluated as compared to the study by Shacham et al.,[15] in which effect of self-efficacy on psychological stress was determined. Self-efficacy is defined as “people’s judgments of their capabilities to organize and execute causes of action required attaining designated types of performances.”[16] In association with emotional well-being, self-efficacy can be one of the
Table 5: Multinomial regression analysis to assess the impact of demographic variables on emotional well-being of dental professionals

| Emotional well-being subscales | Poor emotional well-being | Factors | b       | 95% CI                | P       |
|-------------------------------|---------------------------|---------|---------|-----------------------|---------|
|                              |                           | Age group (years) |         |                       |         |
|                              |                           | 26-35    | −0.322  | 0.257-2.044           | 0.72    |
|                              |                           | 36-45    | −0.285  | 0.264-2.139           | 0.42    |
|                              |                           | 46-55    | 0.433   | 0.460-5.160           | 0.65    |
|                              |                           | >55      | 0       |                       |         |
|                              |                           | Gender   |         |                       |         |
|                              |                           | Male     | 0.085   | 0.829-1.429           | 0.001** |
|                              |                           | Female   | 0       |                       |         |
|                              |                           | Marital status |         |                       |         |
|                              |                           | Married  | −0.023  | 0.011-1.221           | 0.05*   |
|                              |                           | Unmarried | 0.531   | 0.477-1.118           | 0.09    |
|                              |                           | Widower  | 0       |                       |         |
|                              |                           | BDS      |         |                       |         |
|                              |                           | Yes      | 1.520   | 0.031-1.543           | 0.19    |
|                              |                           | No       | 0       |                       |         |
|                              |                           | Socioeconomic status |         |                       |         |
|                              |                           | High     | −1.412  | 1.164-3.256           | 0.23    |
|                              |                           | Upper middle | −1.434  | 1.333-6.821           | 0.001** |
|                              |                           | Lower middle | −0.082  | 0.599-1.044           | 1.49    |
|                              |                           | Lower    | 0       |                       |         |
|                              |                           | Postgraduate |         |                       |         |
|                              |                           | Yes      | 0.330   | 0.752-2.573           | 0.001** |
|                              |                           | No       | 0       |                       |         |
|                              |                           | Years of experience (years) |         |                       |         |
|                              |                           | 1-5      | 0.411   | 0.972-2.340           | 0.001** |
|                              |                           | 6-10     | 0.151   | 0.741-1.827           | 0.06    |
|                              |                           | 11-15    | 0.110   | 0.679-1.836           | 0.89    |
|                              |                           | >15      | 0       |                       |         |
|                              |                           | Practicing in clinic |         |                       |         |
|                              |                           | Yes      | 0.260   | 0.551-1.079           | 0.05*   |
|                              |                           | No       | 0       |                       |         |
|                              |                           | Average number of patients seen per month before lockdown |         |                       |         |
|                              |                           | 1-10     | 0.038   | 0.716-1.506           | 0.16    |
|                              |                           | 11-20    | −0.123  | 0.634-1.233           | 0.001*  |
|                              |                           | 21-30    | 0.280   | 0.866-2.023           | 0.43    |
|                              |                           | >30b     | 0       |                       |         |
|                              |                           | Nature of practice |         |                       |         |
|                              |                           | Private sector | 0.056   | 0.637-1.403           | 0.73    |
|                              |                           | Government sector | −0.806  | 1.457-3.436           | 0.001** |
|                              |                           | Academic sector | −0.839  | 1.473-3.637           | 0.001** |
|                              |                           | More than one type of sector | 0       |                       |         |
|                              |                           | Type of practice |         |                       |         |
|                              |                           | Solo     | −0.128  | 0.583-1.328           | 0.94    |
|                              |                           | Group    | −0.096  | 0.599-1.378           | 0.45    |
|                              |                           | Hospital | −0.176  | 0.431-1.365           | 0.05*   |
|                              |                           | More than one type of practice | 0       |                       |         |
|                              |                           | Location of practice |         |                       |         |
|                              |                           | Urban    | 0.321   | 0.754-2.522           | 0.94    |
|                              |                           | Peri-urban | 0.342   | 0.740-2.677           | 0.93    |
|                              |                           | Rural    | 0.422   | 0.744-3.125           | 0.72    |
|                              |                           | More than one type of location | 0       |                       |         |
|                              |                           | Practice closed due to outbreak |         |                       |         |
|                              |                           | Yes      | 0.008   | 0.703-1.399           | 0.70    |
|                              |                           | No       | 0.265   | 0.431-1.365           | 0.22    |

Contd...
important factors which can be evaluated further among dental professionals.

In the present study, a large number of dental professionals has poor emotional well-being, and as no study was conducted among dental professionals in India in our best of the knowledge, the present study is compared to studies in general health workers which shows similar results. In the present study, male dental professionals had poorer emotional well-being than females, same results were seen in a study by Aboalshamat et al., conducted among dental students reported that male dental students had higher distress than female. This may be due to the fact that men with COVID-19 are more at risk for worse outcomes and death, independent of age.

In this study, gender, marital status, socioeconomic status, postgraduation, years of experience, practicing in clinic and average number of patients seen per month before lockdown, and nature and type of practice have significant impact on emotional well-being of dental professionals. Similar results were shown in review article by Spoorth et al. In a study by Shacham et al., various factors which were significantly associated with increased psychological stress were subjective overload, self-efficacy, and psychological distress scales.

In the present study, the presence of any debilitating diseases was not measured which can be a one of the important factors of poor emotional well-being of dental professionals. The same was reported in a study by Shacham et al.

In the present study, majority of study participants were disagree with the statement that they have gathered all information about COVID-19 which can affect the dental practice. In contrary to this in a study by Ravi et al., in which it was reported that general dental practitioners have maximum awareness regarding the COVID-19 infection. In another meta-analysis by Jafari et al., in which it was concluded that knowledge, attitude, and practice among dentists were high regarding COVID-19 infection.

In a study by Yang and Ma that is conducted to determine factors that worsens emotional well-being of people including health professionals. In this study, married people with high income has higher level of emotional well-being which is consistent with the findings in the present study, this may be due to the fact that married people have psychological support from family and cope better in stressful conditions. In this study, it was quoted that a very less knowledge was present about various factors that have a worsening or protective impact on emotional well-being during an outbreak. It is very important to identify these factors, as they inform policies and interventions aimed at protecting people’s psychological well-being in the age of pandemics. Therefore, the present study is an effort to put some light on the same.

**Limitation and recommendation**
The study was first of its type, during the COVID-19 pandemic, which explored in detail the emotional well-being of the dental professionals, and till now, no study was conducted on the same in Indian Scenario. There is severe paucity of data regarding the same and hopefully it will fill to certain extent the lacunae of knowledge gap. The questionnaire was developed by the investigators after analyzing the personal experiences of a large number of dental professional, which fits to determine the emotional well-being of the dental professionals.

**Conclusion**
From above, it was concluded that, emotional well-being score of majority of dental professionals in the times of COVID-19 outbreak was poor. Gender, marital status, socioeconomic status, postgraduation, years of experience, practicing in clinic, average number of patients seen per month before lockdown, and nature and type of practice have significant impact on emotional well-being of dental professionals. Further studies are needed among dentists with more factors to be researched in order to improve the emotional well-being.

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**Conflicts of interest**
There are no conflicts of interest.

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**Table 5: Contd...**

| Emotional well-being subscales | Poor emotional well-being |
|-------------------------------|--------------------------|
| Factors | b | 95% CI | P |
| Only emergency patients | 0 |  | |

*Predictor variable, *P*≤0.05, **P*≤0.001. CI=Confidence interval.
References

1. Slade M. Mental illness and well-being: The central importance of positive psychology and recovery approaches. BMC Health Serv Res 2010;10:26.
2. Bikdeli B, Talasz AH, Rashidi F, Sharif-Kashani B, Farrokhpour M, Bakhshandeh H, et al. Intermediate versus standard-dose prophylactic anticoagulation and statin therapy versus placebo in critically-ill patients with COVID-19: Rationale and design of the INSPIRATION/INSPIRATION-S studies. Thromb Res 2020;196:382-94.
3. Yang H, Ma J. How an epidemic outbreak impacts happiness: Factors that worsen (vs. Protect) emotional well-being during the coronavirus pandemic. Psychiatry Res 2020;289:113045.
4. Mushtaq R, Shoib S, Shah T, Mushtaq S. Relationship between loneliness, psychiatric disorders and physical health? A review on the psychological aspects of loneliness. J Clin Diagn Res 2014;8:WE01-4.
5. Fredrickson BL, Joiner T. Positive emotions trigger upward spirals toward emotional well-being. Psychol Sci 2002;13:172-5.
6. Law S, Leung AW, Xu C. Severe acute respiratory syndrome (SARS) and coronavirus disease-2019 (COVID-19): From causes to preventions in Hong Kong. Int J Infect Dis 2020;94:156-63.
7. Singhal T. A review of coronavirus disease-2019 (COVID-19). Indian J Pediatr 2020;87:281-6.
8. 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.
9. Lan L, Xu D, Ye G, Xia C, Wang S, Li Y, et al. Positive RT-PCR test results in patients recovered from COVID-19. JAMA 2020;323:1502-3.
10. Ather A, Patel B, Ruparel NB, Diogenes A, Hargreaves KM. Coronavirus disease 19(COVID-19): Implications for clinical dental care. J Endo 2020;46:584-95.
11. 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.
12. Fazel M, Hongwood K, Stephan S, Ford T. Mental health interventions in schools 1: Mental health interventions in schools in high-income countries. Lancet Psychiatry 2014;1:377-87.
13. Ng K, Poon BH, KiatPuar TH, Shun Quah JL, Loh WJ, Wong YJ, et al. COVID-19 and the risk to health care workers: A case report. Ann Intern Med 2020;172:766-7.
14. Alharbi A, Alharbi S, Alqaidi S. Guidelines for dental care provision during the COVID-19 pandemic. Saudi Dent J 2020;32:181-6.
15. 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.
16. Bandura A. Toward a psychology of human agency. Perspect Psychol Sci 2006;1:164-80.
17. Tan BY, Chew NW, Lee GK, Jing M, Goh Y, Yeo LL, et al. Psychological impact of the COVID-19 pandemic on health care workers in Singapore. Ann Intern Med. 2020;173:317-20.
18. Aboalshamat K, Hou XY, Strodl E. Psychological well-being status among medical and dental students in Makkah, Saudi Arabia: A cross-sectional study. Med Teach 2015;37 Suppl 1:S75-81.
19. Min Jin J, Bai P, He W, Wu F, Fang Liu X, Min Han D, et al. Gender differences in patients with COVID-19: Focus on severity and mortality. Front Public Health 2020;8:152.
20. Spoorthy MS, Pratapa SK, Mahant S. Mental health problems faced by healthcare workers due to the COVID-19 pandemic – A review. Asian J Psychiatr 2020;51:102119.
21. Ravi RC, Ponugubati CC, Bonu SK, Athkuri S, Uppalapati LV, Majeti C. Knowledge and awareness on novel coronavirus spread among dental fraternities in Visakhapatnam, India: A questionnaire-based survey. J Educ Health Promot 2020;9:353.
22. Safar A, Mohammadpour M, Ghanbarzadegan A, Rossi-Fedele G, Bastani P. Oral health practitioners’ knowledge, attitude, and awareness about coronavirus: A systematic review and meta-analysis. J Educ Health Promot 2021;10:39.