



PREVALENCE OF DEPRESSION, ANXIETY AND STRESS AMONG DENTAL INTERNS IN THE SECOND WAVE OF THE COVID-19 PANDEMIC IN BENGALURU – A DESCRIPTIVE SURVEY

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Abstract

Introduction – The COVID-19 pandemic presented severe difficulties for the world's healthcare systems and exerted incomparable pressure on healthcare providers. This study was undertaken to assess the psychological impact among dental interns in dental institutions across Bengaluru during the second wave of COVID-19.

Materials and methods- The descriptive survey was conducted through online questionnaire forms circulated among dental interns in dental institutions across Bengaluru practicing during the second wave of COVID-19. Summary statistics were calculated using SPSS 26.0.

Results- Among the 310 dental interns who responded, 70.3% had anxiety, 60% were stressed, and 83.5% had depression.

Conclusion- The current study provides an estimate of the burden of psychological disturbances manifesting in dental interns in Bengaluru due to the second wave of the COVID-19 pandemic.

Keywords- Anxiety, Covid-19, Dental Interns, Depression, Stress

Introduction

The World Health Organization named the coronavirus illness 2019 (COVID-19), a health crisis of global significance in January 2020.¹ The COVID-19 pandemic resulted in worldwide turmoil, a shocking death toll, and widespread disruptions in the world's economy, society, and mental health. Healthcare workers in particular and the general community in general have experienced mental consequences from the epidemic, including loneliness, dread of contracting the disease, loss of financial stability, and bereavement of family and friends.²

Due to the significant potential of cross-infection during clinical care, the OHCW (Oral Health Care Worker) confronts comparable, if not larger, issues than their medical counterparts. Due to their frequent exposure to liquids and aerosols, especially from the mouth of patients during regular dental treatments including scaling, restorations, and extraction, clinical OHCW, and the dentist in particular, are more susceptible to contracting the lethal COVID-19 infection.³ Thus, providing patients with high-quality care was made extremely difficult for oral healthcare professionals, especially dental interns, as a result of the COVID-19 epidemic. In these unstable times, this can have a serious negative influence on interns who have just begun their clinical training. As a result, this study was carried out to assess the impact of pandemic-induced mental health conditions in dental interns during the lethal second wave of the COVID-19 pandemic across dental institutions in Bengaluru, which had previously gone unreported.

Methodology

Study setting and population

Ethical approval for the study was acquired from the Institutional Review Board at the KLE Society's Institute of Dental Sciences in Bengaluru. This descriptive study was conducted from July 1st, 2021 to August 30th, 2021, when most Indian states began to remove restrictions and dental hospitals and clinical facilities began to open across the country. During this period, online survey forms were distributed to dental interns working in dental institutions all over Bengaluru. Using convenience sampling, the electronic forms were sent via e-mail to the principals of dental institutions which were randomly selected using the lottery method across the four zones of Bengaluru (two institutes from each zone), and it was requested that they circulate this to the interns of their institutions who would consent to participate in the study. After clicking the link, participants were instantly led to the study's materials and informed consent. Dental interns who declined to fill out the forms and incomplete forms were excluded. A pilot study among interns in a randomly selected dental institute was conducted to determine the questionnaire's feasibility.

The Questionnaire

There were two sections in the survey questionnaire. Questions about socio-demographic information, such as age, sex, and place of residence (urban/rural), made up the initial part of the questionnaire. The Depression, Anxiety, and Stress Scale - 21 Items (DASS-21) was included in the second portion.^{4, 5} The three groups of seven items that make up the DASS-21 are each related to depression, anxiety, and stress. The four response possibilities were: did not apply to me at all, applied to me to some extent, applied to me significantly, and did not apply to me at all. The findings were graded as normal, mild, moderate, severe, or extremely severe by aggregating the scores for the relevant items.⁵

Only the electronic forms with full information were examined in the end. Privacy and anonymity were maintained at all times during the data compilation procedure.

Statistical analysis

For categorical data, percentages and frequency distributions were calculated, and for data that was continuous, descriptive statistics like mean and standard deviation were generated. The Software

Statistical Package for Social Science version 26.0 was employed for the data assessment and the significance level was assessed at 5%.

Results

The sample had 310 participants with a mean age of 23.76 ± 1.23 years. Most of the participants were females ($n = 78, 54.8\%$), and hailed from urban backgrounds ($n = 220, 71\%$) [Graph 1]

Stress

Among the 310 Respondents, 186 (60%) dental interns were stressed, among which 41 (13.2%) 41(29.4%), 41 (13.2%), and 13 (4.2%) interns had mild, moderate, severe, and very severe stress scores, respectively [Graph 2]. The mean stress subscale score was found to be 16.32 ± 10.16 [Table 3].

Anxiety

Among the 310 Respondents, 218 (70.3%) dental interns had anxiety, among which 18 (5.8%) 45(14.5%), 41 (13.2%), and 114 (36.8%) dental interns had mild, moderate, severe, and very severe anxiety scores, respectively [Graph 2]. The mean anxiety subscale score was found to be 13.76 ± 9.80 [Table 3].

Depression

Among the 310 Respondents, 259 (83.5%) dental interns had depression, among which 28 (9%) 84 (27.1%), 117 (37.7%), and 30 (9.7%) dental interns had mild, moderate, severe, and very severe depression scores, respectively [Graph 2]. Mean depression subscale scores were found to be 18.08 ± 8.47 [Table 3].

Discussion

This study's objective was to evaluate the COVID-19 pandemic's psychological effects on dental interns at dental hospitals across Bengaluru. Our study found that during the COVID-19 outbreak, a high prevalence of psychological disorders was reported by more than half of the individuals. During this second wave, identical findings were seen in a survey of dentists working in Bengaluru.⁶

Another study conducted in the Middle East, in contrast to our findings, discovered that DAS scores were diminished among dental interns. This might be explained by the time of data collection in that study, which took place during the lockdown period that fell at the end of the academic year and during which participants were entirely released from their clinical responsibilities.⁷

Because dentistry requires close contact with patients as well as the use of rotary and surgical instruments that produce a discernible aerosol spray containing droplets of water, saliva, blood, microorganisms, and other debris, it presents considerable strain on dental personnel to deliver quality care without risking cross-infection. According to studies, dentists' levels of depression, anxiety, and stress were significantly influenced by their concerns about work-related virus exposure, lack of awareness of preventative and mitigation measures, working extra hours during the epidemic, and ongoing burnout from their jobs.^{2, 10}

Whether or not dentist staff members were treating clients, an investigation done in Norway revealed that the COVID-19 epidemic had an enormously detrimental mental health effect on them.¹¹ According to a similar UK poll, nearly 50% of dentists claimed the pandemic had negatively damaged their psychological well-being, and a sizable number (77%) indicated it had harmed their ability to pay their bills making it patent that the epidemic caused disruptions to dentists' professional lives and presented numerous obstacles for the industry.¹²

An Italian study indicated that 85.1% of participants were worried about developing COVID-19 while engaging in professional duties, and this worry was highly correlated with increased mental discomfort.¹³ A study in Israel that examined mental health issues in dentists and dental hygienists during the pandemic discovered that 11.5% of participants experienced increased emotional stress, which was linked to higher levels of perceptual overwork, underlying health problems, and apprehension about contracting the viral infection.¹⁴

Dental professionals are thought to have the second-highest possible susceptibility to SARS-CoV-2 behind medical professionals predisposing the interns to an array of challenges that can influence their psychological wellness as well as their self-confidence and perceptions of their competence as providers of oral health services.⁶

Limitations

This study's limitations include not taking into account the other Indian states and self-reporting bias. To extrapolate the study's findings across India's several significant red zone regions, additional research is required.

Conclusions

According to the results of our study, the COVID-19 pandemic had a significant detrimental influence on dental interns who were working during the subsequent wave of the pandemic, which resulted in a high prevalence of depression, anxiety, and stress. It underlines the importance of dental institutions to understand the special difficulties experienced by dental interns and to place a high priority on their psychological well-being during these pressing times and beyond.

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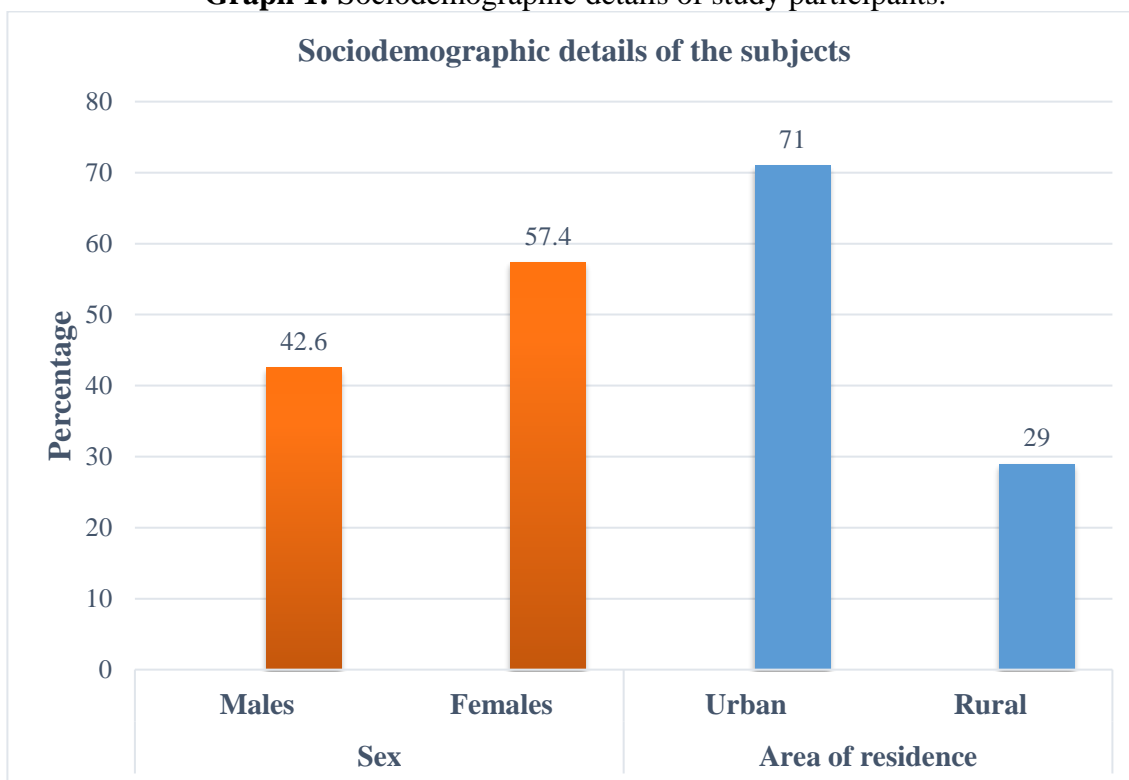
References:

1. Castro-Pérez Vargas AM, Céspedes-Porras J, Echeverri-Junca LH, Córdova-Limaylla NE, López-Gurreonero C, Castro-Mena MJ, Cayo-Rojas CF. Depression, Anxiety and Stress Associated With Fear of COVID-19 in Peruvian Dental Students: A Multivariate Analysis With 12 Sociodemographic Factors. *J Int Soc Prev Community Dent.* 2022 Oct 27;13(3):208-220.
2. Ramachandran S, Shayanfar M, Brondani M. Stressors and mental health impacts of COVID-19 in dental students: A scoping review. *J Dent Educ.* 2023 Mar;87(3):326-342.
3. Chaudhary FA, Ahmad B, Ahmad P, Khalid MD, Butt DQ, Khan SQ. Concerns, perceived impact, and preparedness of oral healthcare workers in their working environment during COVID-19 pandemic. *Journal of occupational health.* 2020;62(1):e12168.
4. Shinkre R, Srivastava BK, Eshwar S, Jain VK. INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH.
5. Ali AM, Alkhamees AA, Hori H, Kim Y, Kunugi H. The Depression Anxiety Stress Scale 21: Development and Validation of the Depression Anxiety Stress Scale 8-Item in Psychiatric Patients and the General Public for Easier Mental Health Measurement in a Post COVID-19 World. *Int J Environ Res Public Health.* 2021 Sep 27;18(19):10142.
6. Rohan Shinkre, Ishan Mukherji, Souma Mukherjee, Aarya Bharadwaj, B.K Srivastava, Shruthi Eshwar. (2023). Mental Health Status of Dentists in an Indian Metropolitan City during the Post-Lockdown Period of the Covid-19 Pandemic – A Cross-Sectional Study. *Journal for ReAttach Therapy and Developmental Diversities*, 6(10s(2), 1086–1091.

7. Khanagar SB, Alfadley A. Psychological Impact of the COVID-19 Pandemic on Dental Interns in Riyadh, Saudi Arabia: A Cross-sectional Survey. *Int J Clin Pediatr Dent.* 2020 Sep-Oct;13(5):508-512.
8. 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(1):9.
9. Li J, Guo J, Zhao J, Guo Y, Chen C. Influencing Factors of Mental Health Status of Dentists Under COVID-19 Epidemic. *Front Psychiatry.* 2022 Jul 11;13:933514. Akinkugbe AA, Garcia DT, Smith CS, Brickhouse TH, Mosavel M. A descriptive pilot study of the immediate impacts of COVID-19 on dental and dental hygiene students' readiness and wellness. *J Dent Educ.* 2021;85(3):401-410.
10. Uhlen MM, Ansteinsson VE, Stangvaltaite-Mouhat L, Korzeniewska L, Skudutyte-Rysstad R, Shabestari M, Mdala I, Hovden EA. Psychological impact of the COVID-19 pandemic on dental health personnel in Norway. *BMC Health Services Research.* 2021 Dec;21(1):1-1.
11. Collin V, O' Selmo E, Whitehead P. Psychological distress and the perceived impact of the COVID-19 pandemic on UK dentists during a national lockdown. *British dental journal.* 2021 Jan 22:1-8.
12. Consolo U, Bellini P, Bencivenni D, Iani C, Checchi V. Epidemiological aspects and psychological reactions to COVID-19 of dental practitioners in the Northern Italy Districts of Modena and Reggio Emilia. *International journal of environmental research and public health.* 2020 Jan;17(10):3459.
13. 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. *International journal of environmental research and public health.* 2020 Jan;17(8):2900.

Tables and Figures

Graph 1: Sociodemographic details of study participants:



Graph 2: Distribution of Depression, Anxiety, and Stress among study participants

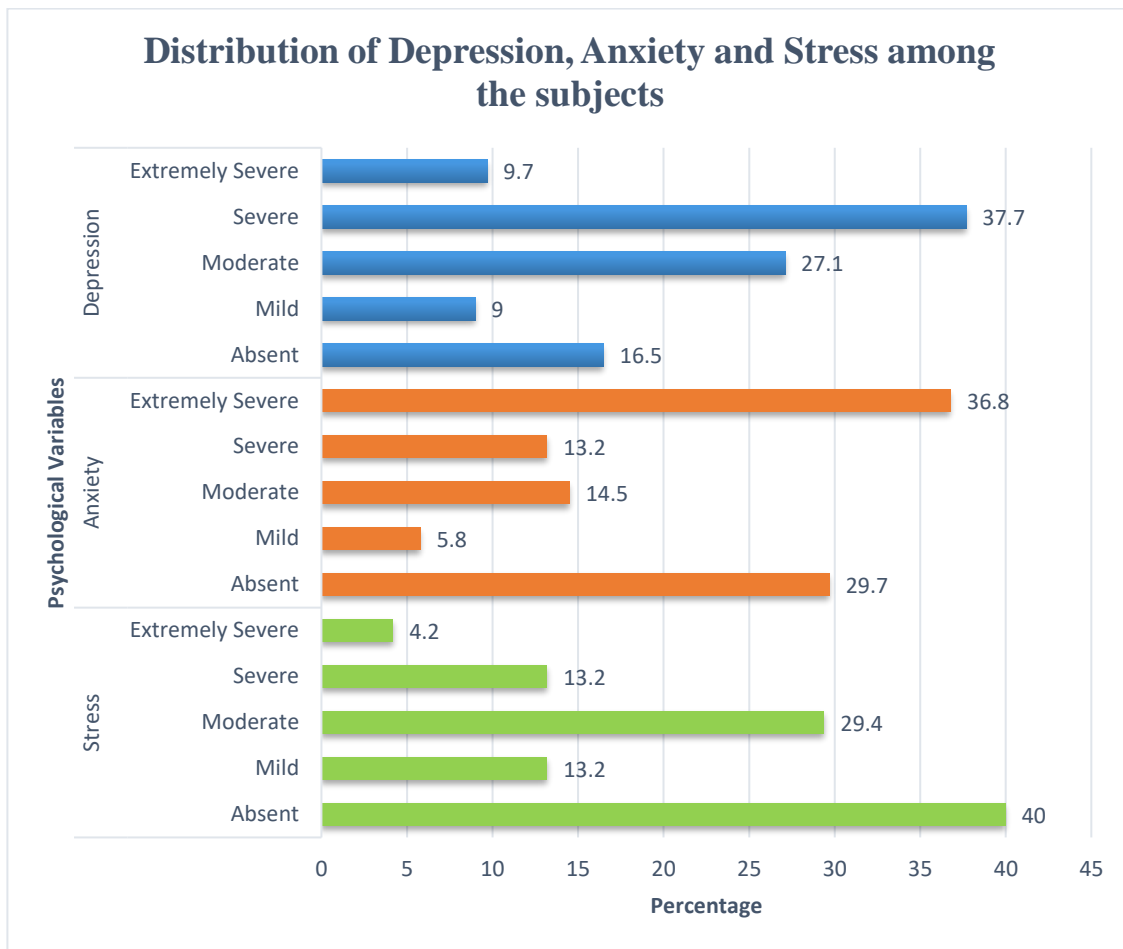


Table 3: Mean scores of Depression, Anxiety, and Stress recorded on the DASS-21 scale among the subjects

Psychological variables	Mean scores	SD scores
Stress	16.32	10.165
Anxiety	13.76	9.802
Depression	18.08	8.469