

Research Paper

## Effects of COVID-19 pandemic and the stress levels among dental practitioners— a short study

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### ABSTRACT

The emergence of the Corona Virus (COVID-19) and its consequences that have led to fears, worries, and anxiety among individuals worldwide. The present study is an attempt to design and develop the Fear of COVID-19 Scale (FCV-19S) to understand and complement the clinical efforts of practicing dentists in the frontline, in preventing the spread and treating of COVID-19 cases with emergency dental problems. While doing so, Hans Selye's theory of stress model, General Adaptation Syndrome (GAS) is used to demonstrate the stages of stress and response among the practicing dentists as the point of departure. **Aim:** This paper examines the effects of COVID-19 outbreak on practicing dentists in terms of their stress levels, specifically psychological stress and anxiety using FCV-19S on a nine-item one-dimensional scale with robust psychometric properties that measured stress levels and anxiety aspects. **Methods:** This paper is the result of the analysis of data gathered using online purposive and convenient sampling survey-based study among practicing dentists (n=126) using Google forms from 25th March 2020 to 25th May 2020. The items of the FCV-19S were constructed based on an extensive review of existing scales on fears, professional validations and a pilot study. Various psychometric tests were conducted to ascertain its reliability and validity properties. Also, other properties evaluated using both classical test theory and Rasch model were satisfactory on the nine-item scale. **Results:** Despite having a high standard of knowledge and practice, dental practitioners around the country are in a state of stress and fear while working in their respective clinics due to the COVID-19 pandemic effects on humanity. However, there was no significant difference between the gender of practicing dentists about their apprehension of personal safety from COVID-19. But it was noted that there was a significant difference between the gender of practicing dentists regarding their confidence level to live with COVID-19 and their performance as the 'p'-value was .046. (Table-4) and .001 (Table-5) respectively. **Conclusion:** The analysis of the data demonstrated a significant difference between male and female gender among the

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practicing dentists regarding the stress level due to COVID-19, which is a matter for concern, as the Hippocratic Oath does not permit such gender discrimination in ethical standards. The FCV-19S, a nine-item scale, has robust psychometric properties. It is reliable and valid in assessing fear of COVID-19 among the practicing dentists and will also be useful in allaying COVID-19 fears among individuals with dental problems.

**Keywords:** *Fear of COVID-19 Scale, Dental Practitioners, Hospital Anxiety and Depression Scale.*

One of the emergent global challenges in managing infectious diseases is dealing with the novel coronavirus 2019 (COVID-19). The outbreak of novel coronavirus in the Chinese city of Wuhan began in December 2019, has infected millions of people worldwide. World Health Organization (WHO) raised the threat to the novel coronavirus epidemic to the ‘very high’ level, on February 28, 2020<sup>[1]</sup>. As COVID-19 is declared by WHO as a pandemic, we need to learn to live with it until solutions to the challenges are found by the front-line workers. The dentist is front line professionals especially during dental emergencies and they do have fear and anxiety of COVID-19 infections in their dental clinical settings. On the other hand, dental anxiety is a very common problem that can be quite unpleasant for the patient<sup>[2]</sup> and interferes with dental treatment<sup>[3]</sup>. This research study is an attempt to identify the main stressors during and post COVID-19 pandemic situation, in the community, while examining the main moderating factors, which may mitigate the effect of COVID-19 on practicing dentists and their mental health. The current short study was conducted to assess stress and fear amongst the dentists related to their practice in the clinical settings. Besides, dentists’ perspectives about the various practice and the suggestions for modifications to combat COVID-19 has been evaluated.

### ***Prevention of Oral infections in Dental Clinics***

The infection continues to be one of the most critical issues in healthcare service worldwide. Mental health concerns of people impacted by the coronavirus pandemic have not been adequately addressed. Infection prevention and control of cross-contamination are essential in providing a secure environment for patients and healthcare workers within healthcare settings in general and more specifically in dental practices. Transmission of infection during dental procedures may occur through direct contact with saliva, oral fluids, or blood, airborne droplets containing infective agents, or indirect contact via contaminated objects (W. G. Kohn, 2003)<sup>[4]</sup>. Oral viral infections can be either primary and localized or secondary to systematic infection. The need to create alertness and empower anxiety-driven dentists who are in the frontline in dental clinical settings in times of emergency dental care forms the background of this research study. This is surprising given that mass tragedies, particularly ones that involve infectious diseases, often trigger waves of heightened fear and anxiety that are known to cause massive disruptions to the behaviour and psychological well-being of many in the population (Balaratnasingam & Janca, 2006)<sup>[2]</sup>.

### ***Perspective of Dentists Living with COVID-19***

Changes to daily life have been swift and unprecedented, as cases of the virus surge, the death toll escalates, and draconian measures to contain the spread of the disease increase across regions of the globe. Although there has been substantial attention to measures to identify people with the coronavirus infection, identifying the mental health care needs of people impacted by this pandemic have been relatively neglected (Xiang et al., 2020)<sup>[3]</sup>. Therefore, the purpose of this study was to fill a void in the mental health response from the

perspective of the dentists to this growing public health crisis by designing, developing and validating a brief mental health screener that can be used to reliably identify dysfunctional anxiety and stress severity associated with the coronavirus. Sometimes just the thought of getting through the day produces anxiety. Despite having a high standard of knowledge and practice, dental practitioners around the globe are in a state of stress and fear while working in their respective fields due to the COVID-19 pandemic effects on humanity. Dentists with Generalized Anxiety Disorder (GAD) don't know how to stop the worry cycle and feel it is beyond their control, even though they usually realize that their anxiety is more intense than the situation warrants, and lead themselves to modified unhealthy behaviours (Kessler, R. C et al., 2001) [5]. Hence it is significant to learn the perspective of the practicing dentists, while the narrative is changing to living COVID-19 pandemic in clinical settings.

### ***Stress Model and Levels of Anxiety***

Hans Selye, a Hungarian endocrinologist presented the General Adaptation Syndrome (GAS) to explain his theory of stress model (Hans S 1946) [6]. According to Selye, the body's typical response to cope with stress occurs in 3 stages: Alarm, Resistance & then finally Exhaustion. If increased stress levels go unmonitored, it may cause conditions of chronic stress, leading to work burnout. The COVID-19 pandemic has caused a similar string of reactions from affected individuals, wherein they are experiencing heightened levels of distress. It is important to note that these stress levels may be caused owing to various factors such as uncertainty about the future, concern for the health of friends and family, etc, but the root cause is the outbreak of the pandemic. To equip oneself to deal with the increasing stress, one must adopt methods of coping. COVID-19 infection spreads mainly through respiratory droplets, aerosol, exposing dental surgeons at extreme risk of infection during dental emergencies. This study is an attempt to demonstrate the stages of stress and anxiety as the effect of COVID-19 on practicing dentists.

### ***Risk and Fear of Living with COVID-19***

Even though Preventive measures are undertaken to prevent transmission of this deadly virus dental professionals are at the maximum risk of receiving and transmitting COVID-19 as stated by (Abhishek S., et al., 2020) [7]. The human-to-human transmission of COVID-19 occurs mainly through respiratory droplets in air suspension and aerosol and direct or indirect contact<sup>[8-9]</sup>. The highly unpredictable and mysterious nature of this viral infection has put every human being at risk of contracting and/or transmitting this infection (Parveen Dahiya et al., 2020) [10].

## **MATERIALS AND METHODS**

The research relied on the data collected from the short survey study, after obtaining the consent, using online Google forms which were self-administered by the practicing dentists (n=126) in various parts of the country. The FCV-19S, a nine-item scale, that robust psychometric properties were used in the design of the questionnaire as part of the research instrument. The Google forms consisted of a set of nine questions designed and developed after professional validation and pilot study. A purposive and convenient sampling method was used to gather data that consisted of answers to questions prepared based Rasch Analysis (RA) approach. Descriptive and inferential analysis of the data was done using statistical package for social sciences (SPSS) version-19 using tools like chi-square correlation test for finding the significance of the relationship between age and gender, the perspective of dentists about major contributing factors to stress, the priority of dental health, personal safety, confidence level, patient safety and performance as a dental professional.

## RESULTS AND DISCUSSIONS

The analysis of the data regarding practicing dentists (n=126) in terms of gender and age depicted that there is no significant difference (Table-1) between the age and gender as the ‘p’-value was .256, demonstrating that the sample selected for the study from various parts of the country belonged to a homogenous group of practicing dentists. Correlation of the gender of the practicing dentists with regarding their perspective about COVID-19 as the major contributing factor for fear demonstrated that majority (57.14%) of them were in agreement with opinion that COVID-19 was a major factor and 86.50% of them gave priority to safety from COVID-19 over dental health. However, there was no significant difference in terms of the gender of practicing dentists regarding apprehension about personal safety from COVID-19. But there was a significant difference in their confidence in living with COVID-19 in terms of gender, as 19.84% belonged to female gender among practicing dentists. A majority (96.03%) of the practicing dentists expressed their apprehension about patient safety from COVID-19 and majority of them (78.57%) felt that COVID-19 has affected their professional performance due to anxiety. However, it may be noted that there was a significant difference between the gender (37.30% were female) among the practicing dentists (Table-6) in terms of their position as a dental surgeon being in the front line in a time of dental emergencies as the ‘p’ value was .000.

Both descriptive and inferential analysis of the data gathered demonstrated that even though there was no significant difference between the age and gender of practicing dentists, the fear remained the major contributing factor. There was a significant difference between gender practicing dentists (Table-3) in their priority concern about safety from COVID-19 over dental health as ‘p’ value was .007. However, there was no significant difference between the gender of practicing dentists about their apprehension of personal safety from COVID-19. But it may be noted that there was a significant difference between the gender of practicing dentists regarding their confidence level to live with COVID-19 and their performance as the ‘p’-value was .046. (Table-4) and .001 (Table-5) respectively. The analysis of the data demonstrated a significant difference between male and female gender among the practicing dentists concerning the stress level due to COVID-19, which is a matter for concern, as the Hippocratic Oath does not permit such discrimination in ethical standards.

## TABLES AND FIGURES

*Table No.1. Classification of the Practicing Dentists in Terms of Gender and Age*

Gender	Age Group				Total
	23 to 30 Years of Age	31 to 40 Years of Age	41 to 50 Years of Age	51 to 60 Years of Age	
Female	54	11	3	0	1
Male	43	13	0	1	0
<b>Total</b>	97	24	3	1	1

*p’-value=.256*

*Table No. 2 Classification of the Opinion of Practicing Dentists in terms of Gender that Consider COVID-19 as Major Contributor to Stress*

Gender	Opinion of Practicing Dentists that Consider COVID-19 as Major Contributor to Stress					Total
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Female	32	11	16	5	5	69
Male	29	10	7	8	3	57

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Gender	Opinion of Practicing Dentists that Consider COVID-19 as Major Contributor to Stress					Total
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Female	32	11	16	5	5	69
Male	29	10	7	8	3	57
Total	61	21	23	13	8	126

'p'-value=.434

**Table No.3 Classification of the Opinion of Practicing Dentists in terms of Gender that Prioritize Safety of Self from COVID-19 Over Dental Health**

Gender	Prioritize Safety of Self from COVID-19 Over Dental Health					Total
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Female	58	1	5	1	4	69
Male	38	12	5	0	2	57
Total	96	13	10	1	6	126

'p'-value=.007

**Table No.4 Classification of the Opinion of Practicing Dentists in terms of Gender that are Confident to Live with COVID-19**

Gender	Confident to Live with COVID-19					Total
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Female	58	1	5	1	4	69
Male	38	12	5	0	2	57
Total	96	13	10	1	6	126

'p'-value=.046

**Table No.5 Classification of the Opinion of Practicing Dentists in terms of Gender that COVID-19 will Affect their Performance as Dentist**

Gender	COVID-19 will Affect their Performance as Dentist					Total
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Female	58	1	5	1	4	69
Male	38	12	5	0	2	57
Total	96	13	10	1	6	126

'p'-value=.001

**Table No.6 Classification of the Opinion of Practicing Dentists in terms of Gender that Stress is due to COVID-19 as a Dentist**

Gender	Stressed due to COVID-19 as a Dentist					Total
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Female	58	1	5	1	4	69
Male	38	12	5	0	2	57
Total	96	13	10	1	6	126

'p'-value=.000

## CONCLUSION

Even though it is a minuscule online survey-based research done in a limited time and relies only on responses from a small sample (n=126) of practicing dentists the fact, majority of

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them (78.57%) felt that COVID-19 has affected their professional performance due to anxiety is a matter of concern considering the COVID-19 pandemic situation India (Table-1). This is consistent with similar studies conducted by Byck, G et al.,<sup>[10]</sup>. However, it was noted that there was a significant difference between gender of practicing dentists in their priority concern about safety from COVID-19 over dental health as ‘p’ value was .007 is appreciable under the existing scenario and government regulations to control the spread and transmission of COVID-19 as practicing dentist play a vital role as front line workers during dental emergencies. But covid-19 remained as the major contributing factor for fear as majority (57.14%) of practicing dentists, demonstrating the need for psychological and social support in practicing their dental profession within ethical standards (Kacerik, M. G., 2006)<sup>[11]</sup>.

## REFERENCES

1. Ajay Parihar, Ashish Saxena, Amit Rawat and Arvind Jain (2020). COVID–19: Influenced alteration in dental OPD management, *International Journal of Applied Dental Sciences* 2020; 6(2): 349-355, Available online and accessed on 17<sup>th</sup> May 2020: <http://www.oraljournal.com/pdf/2020/vol6issue2/PartF/6-2-43-203.pdf>
2. Balaratnasingam, S., & Janca, A. (2006). Mass hysteria revisited. *Current Opinion in Psychiatry*, 19, 171–174
3. Xiang, Y., Yang, Y., Li, W., Zhang, L., Zhang, Q., Cheung, T., & Ng, C.H. (2020). Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet*, 7, 228–229
4. Kohn, W. G., Collins, A. S., Cleveland, J. L., Harte, J. A., Eklund, K. J., & Malvitz, D. M. (2003). Guidelines for infection control in dental health-care settings--2003. *MMWR. Recommendations and Reports : Morbidity and Mortality Weekly Report. Recommendations and Reports / Centers for Disease Control*, 52(RR-17), 1–61.
5. Kessler, R. C., Keller, M. B., & Wittchen, H. U. (2001). The epidemiology of generalized anxiety disorder. *Psychiatric Clinics of North America*, 24(1), 19–39. [http://doi.org/10.1016/S0193-953X\(05\)70204-5](http://doi.org/10.1016/S0193-953X(05)70204-5)
6. Selye, H. (1946). The general adaptation syndrome and the diseases of adaptation. *Journal of Allergy*, 17(4), 231–247. [http://doi.org/10.1016/0021-8707\(46\)90148-7](http://doi.org/10.1016/0021-8707(46)90148-7)
7. Abhishek Singh, Naqoosh Haidry, Gourab Das, Arunima Singh, Naved Aleem Ansari, (2020) Recommended infection control protocol in dental health care settings during pandemic Covid-19 with current and future challenges for dental practice *International Journal of Dental Science and Innovative Research (IJDSIR)* Available Online at: [www.ijdsir.com](http://www.ijdsir.com) Volume – 3, Issue – 3, May - 2020, Page No. : 363 - 369
8. Kleinknecht RA, Klepac RK, Alexander LD. Origins and characteristics of fear of dentistry. *J Am Dent Assoc* 1973; 86:842-8.
9. Coldwell SE, Wilhelm FH, Milgrom P, Prall CW, Getz T, Spadafora A, (2007) Combining alprazolam with systematic desensitization therapy for dental injection phobia. *J Anxiety Disorder* 2007; 21:871-87
10. Parveen Dahiya, Reet Kamal, Varun Sharma, Saravpreet Kaur (2015)“Hepatitis” – Prevention and management in dental practice, *Journal of Education and Health Promotion* | Vol. 4 | May 2015
11. Kacerik, M. G., Prajer, R. G., & Conrad, C. (2006). Ethics instruction in the dental hygiene curriculum. *Journal of Dental Hygiene : JDH / American Dental Hygienists' Association*, 80(1), 9

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***Conflict of Interest***

The author declared no conflict of interest.

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