

Mental Health Status of Dental Faculty, Students and their Parents during COVID-19 Pandemic in Southern India: A Cross-sectional Study

KSV RAMESH¹, P SWETHA², NVS G SRUTHIMA³, P MOHAN KUMAR⁴, C NARESH KUMAR⁵, B VIVEK⁶, B ANUSHA⁷

ABSTRACT

Introduction: Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) is an infectious and devastating disease that has created heightened levels of anxiety and fear among the general population. Coronavirus Disease-19 (COVID-19) has also brought many changes in everyone's lives including closing of schools, colleges/universities and social isolation in an unexplained manner. In these unprecedented times, lot of sway has been developed among teaching faculty, students and student's parents in the medical profession including dental schools. However, the impact on students is likely to be noteworthy.

Aim: To assess the awareness, attitude, anxiety and perceived mental healthcare during the COVID-19 pandemic among dental faculty, students and their parents in South India.

Materials and Methods: A cross-sectional, observational questionnaire based study was carried out among 1000 dental faculty, students and student's parents in South India between August 2020 to December 2020. A questionnaire with 20 items regarding awareness, attitude, anxiety and perceived mental healthcare was designed on Google forms and sent through e-mails and WhatsApp. Snowball sampling technique was used and 1000 self-selected dental faculty, students and student's

parents in South India were included in the study. Data was subjected to statistical analysis using Statistical Package for the Social Sciences (SPSS) software v. 20.0 International Business Machines Corporation-United States of America (IBM-USA). Chi-square test was used to analyse the data. The p-value <0.05 was considered statistically significant.

Results: The findings showed all the respondents were aware with positive attitude and awareness on this pandemic in regard to its spread and precautions to be taken. However, parents (59.2%) were more preoccupied with eliminate thoughts and more were anxious when compared to faculty (32.1%) and students (32.4%), whereas faculty were more concerned about family's health and safety (49%) and financial status (54.5%) (p<0.001). All the respondents felt that getting engaged and sharing their worries would help them and mental health help requirement is greater in students (86.5%), student's parents (81.4%) followed by faculty (71.5%) (p<0.001).

Conclusion: During this pandemic even though respondents were aware of the possible sequel of infection and preventive measures. The findings suggest a need to address the mental health worries of the people during these pandemics.

Keywords: Attitude, Anxiety, Awareness, Coronavirus disease-2019, Faculty, Mental health

INTRODUCTION

Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) is an infectious disease caused by coronavirus. It first came to light on 31st December 2019 in Wuhan, China. COVID-19 infection usually spreads from person to person through droplets from nose or mouth when a person coughs, sneezes or speaks [1]. World Health Organisation (WHO) has declared the novel coronavirus outbreak a Public Health Emergency of International Concern (PHEIC) on 30th January 2020, Strategic Preparedness and Response Plan (SPRP) was setup to protect the states [2]. These plans were to limit the transmission, provide early healthcare and minimise social and economic impacts. It has become one of the central health crises of a generation and has left a great impact on people of all nations, races, and socio-economic groups [3].

COVID-19 has created heightened levels of anxiety and fear among the general population. Despite Indian government urging people and other stake holders of the society to avoid gatherings like religious ceremonies, family functions etc., the anxiety and health concerns in society are affecting common individuals to some extent [4]. Till date limited data is available about this contagious disease [5,6]. This pandemic disease has brought in its wake closing of schools, colleges/universities and social isolation which

have abruptly changed everyone's daily life. Among many, education is one which has got affected in an unexplained manner. In these exceptional times, the medical profession, including dental schools, has established a great deal of clout among teaching faculty, students, and student's parents. The impact on students, on the other hand, is likely to be enormous. Awareness and attitude of people in this situation has a great degree of influence on personal protection. A good mental health status is of major concern in the pandemic.

Though the pandemic has acclimatised humanity to new technology, it has had a significant influence on a number of issues, including mental health [7]. There is a scarcity of study in the area of dentistry on the mental health of dental faculty, students, and their parents during the pandemic. There is yet to be a research that assesses the mental health of staff, students, and their parents.

One previous study showed that Healthcare Workers (HCWs) had a lack of knowledge and attitude toward COVID-19 [8]. In the pre pandemic and early pandemic era there was less knowledge and awareness regarding transmission based precautions [9].

Hence, the aim of this study was to evaluate awareness, attitude, anxiety and perceived mental healthcare during COVID-19 among dental faculty, students and their parents in South India.

MATERIALS AND METHODS

A cross-sectional, observational study was carried out among dental faculty, students and their parents in South India. The study protocol was approved by Institutional Ethical Committee (VDC/RP/2020/20), Vishnu Dental College, Andhra Pradesh for a period of August 2020 to December 2020.

A questionnaire was sent to dental faculty, dental students and student's parents of 10 different institutes randomly. Dental faculty, dental students were informed to send the questionnaire to as many as possible to receive additional responses. Upon clicking the link the participants were asked to read and accept the informed consent and answer the questionnaire.

Using Google forms, an online questionnaire with 20 items containing the following four sections relating to awareness (5 items), attitude (5 items), anxiety (7 items) and perceived mental healthcare (3 items) was developed by a statistician with an experience of seven years based on the study done by Roy D et al., [10]. Face validity was evaluated by including few respondents. A total of 180 subjects were considered for pilot study. The content validity was tested by using Content Validity Index (CVI with score >3.5) and the expert panel were asked to assess various aspects including relevance, clarity, simplicity, ease of understanding, time taken, confusion among items, opinion on language and the length of the questionnaire. The panel was also provided with an opportunity to provide free-text comments. The data gathered from CVI, free-text comments and subsequent qualitative analysis helped in some meaningful additions and subtractions to items in the questionnaire for three questions.

Sample size calculation: After receiving the forms, Cronbach's alpha value was determined to be 0.86 indicating that the variables were adequate to correlate and to proceed. Sample size was calculated based on the findings of pilot study considering 95% confidence level, 3% margin of error and 63.5% of awareness. Upon this, sample size was calculated as 1000 participants and were included in the study.

Study Procedure

Potential participants, accessing the questionnaire, were informed about the following: the purpose of the survey no known risks of participation data confidentiality and overall eligibility criterion of participants were faculty, dental students and their parents being capable of understanding the questionnaire.

The respondents were allowed to choose more than one option from the given choices according to their understanding. The link of the questionnaire (Google form) was sent through e-mails, WhatsApp of the investigators as it requires much less time and effort, and supports cost minimisation. Each person was free to select whether or not to take part in the survey.

Dental faculty and students from 10 teaching institutes from different states of South India participated in the study. Student's parents with internet access able to understand English and willing to give informed consent were included. All the data was collected from the sent Google forms were subjected to statistical analysis.

STATISTICAL ANALYSIS

As this study has adopted a snowball sampling technique, via self-selection form, the response rate cannot be computed. In general, the survey was closed when a total of 1000 completed responses were received. All the obtained data was subjected to statistical analysis using SPSS software v. 20.0 (IBM-USA). Chi-square test was used to analyse the data. The p-value <0.05 was considered statically significant. For easy understanding and evaluation results were categorised under 4 sections i.e., awareness, attitude, anxiety and perceived mental healthcare.

RESULTS

Demographic details: Out of the 1000 participants, 728 (72.8%) participants were of age 18-24 years, 195 (19.5%) participants of age 25-44 years, 75 (7.5%) participants of age 45-64 years, 2 (0.2%) participants of age above 64 years, among which 327 (32.7%) were males and 673 (67.3%) were females. Dental teaching faculty (16.5%), dental students (80.8%), student's parents (2.7%) were included in the study [Table/Fig-1].

Groups	Frequency N (%)	Age (years) Mean±SD	Gender	
			Males (32.7%)	Females (67.3%)
Faculty	165 (16.5%)	34.5± 13.7	86 (52%)	79 (47%)
Students	808 (80.8%)	21±8.1	222 (27.4%)	586 (72.6%)
Parents	27 (2.7%)	42±11.4	19 (35.1%)	8 (64.9)

[Table/Fig-1]: Demographic details.

Awareness

Out of the total participants, 98.8% of faculty, 97.2% students, and 70.3% student's parents answered that the virus spreads through multiple modes like hand shaking, sneezing, coughing; also 91.5% of faculty, 94.6% of students, 77.7% of parents were aware that the virus infection is highly contagious (p=0.757). Among the faculty, 49% have opined that individuals with systemic diseases are more prone for COVID-19, whereas greater number of students (43.5%) felt that older individuals are more prone and 44.4% of parents regarded that the middle age groups are more prone to COVID-19. However, most participants, 84.8% of faculty, 81% of students, 85.1% of parents acknowledged that isolating a person with symptoms stops the spread of the infection and 58.7% of faculty, 54.3% of students, 59.2% of parents regarded spending 20 seconds or more in washing hands helps in preventing of COVID-19 infection [Table/Fig-2].

Sl. No.	Items	Choices	Dental faculty (165) n (%)	Dental students (808) n (%)	Student's parents (27) n (%)	p-value
1.	How does COVID-19 virus spread (multiple options were given)	Hand shaking	0 (0)	18 (2.2%)	1 (3.7%)	0.081
		Sneezing	11 (6.7%)	36 (4.4%)	12 (44.4%)	
		Coughing	9 (5.5%)	56 (6.9%)	13 (48.1%)	
		All of the above	163 (98.8%)	786 (97.2%)	19 (70.3%)	
2.	Is COVID-19 virus infection highly contagious	Yes	151 (91.5%)	764 (94.6%)	21 (77.7%)	0.757
		No	5 (3.0%)	12 (1.4%)	0 (0)	
		May be	9 (5.5%)	32 (3.9%)	6 (22.2%)	
3.	Which age groups of population are more prone to COVID-19 infection?	Below 10 years	0 (0)	0 (0)	0 (0)	<0.001
		Adolescents	2 (1.2%)	21 (2.5%)	4 (14.8%)	
		Middle age	46 (27.8%)	256 (31.6%)	12 (44.4%)	
		Older age group	36 (21.8%)	352 (43.5%)	6 (22.2%)	
		Individuals with systemic diseases	81 (49%)	179 (22.1%)	5 (18.5%)	
4.	Isolating a person with symptoms stops the spread of the COVID-19 virus?	Yes	140 (84.8%)	655 (81%)	23 (85.1%)	0.169
		No	5 (3%)	17 (2.1%)	1 (3.7%)	
		May be	20 (12.2%)	136 (16.8%)	3 (11.2%)	
5.	How much time do you spend in washing your hands?	5 seconds	0 (0)	0 (0)	0 (0)	0.129
		10 seconds	31 (18.7%)	142 (17.6%)	6 (22.2%)	
		15 seconds	37 (22.7%)	227 (28.1%)	5 (18.5%)	
		20 seconds	97 (58.7%)	439 (54.3%)	16 (59.2%)	

[Table/Fig-2]: Awareness related to COVID-19 pandemic. p-value <0.05 considered significant

Attitude

Most of the participants agreed that primary contacts with COVID-19 infection should be isolated for 14 days faculty (95.7%), students (90.2%), students parents (77.7%) and also faculty (97%), students (95.2%), parents (85.1%) believed that social distancing is essential to stop the virus from spreading. However 92.6% parents, 93.3% faculty and 85.3% students considered a person having fever and cough should be in isolation and in quarantine. Also 95.1% faculty, 92.9% students and all parents regarded traveling across or within the country as unsafe. All the respondents almost equally felt that they were not able to participate actively in their daily routine when compared to before the COVID-19 outbreak ($p=0.005$) [Table/Fig-3].

Sl. No.	Items	Choices	Dental faculty (165) n (%)	Dental students (808) n (%)	Student's parents (27) n (%)	p-value
1.	Primary contacts with COVID-19 infection should be isolated for?	1 day	0	3 (0.3%)	0	0.261
		5 days	2 (1.2%)	9 (1.1%)	0	
		7 days	5 (3.0%)	68 (8.4%)	6 (22.2%)	
		14 days	158 (95.7%)	728 (90.2%)	21 (77.7%)	
2.	Do you think Social distancing is essential to stop the spread of COVID 19 virus?	Yes	160 (97%)	769 (95.2%)	23 (85.1%)	0.533
		No	0	5 (0.6%)	0	
		May be	5 (3%)	34 (4.2%)	4 (14.8%)	
3.	Do you think if a person having fever and cough should quarantine and isolate themselves?	Yes	154 (93.3%)	689 (85.3%)	25 (92.6%)	0.165
		No	0	36 (4.5%)	2 (7.4%)	
		May be	11 (6.7%)	83 (10.2%)	0	
4.	Do you think travelling across or within the country is safe during this time?	Yes	2 (1.2%)	24 (3.0%)	0 (0%)	0.355
		No	157 (95.1%)	751 (92.9%)	27 (100%)	
		May be	6 (3.7%)	33 (4.1%)	0	
5.	Compare to before the COVID-19 outbreak were family members able to participate actively in their daily routine	Yes	51 (30.9%)	309 (38.2%)	10 (37%)	0.005
		No	84 (50.9%)	425 (52.6%)	17 (63%)	
		May be	30 (18.2%)	74 (9.2%)	0	

[Table/Fig-3]: Attitude Related to COVID-19 Pandemic.
p-value <0.05 considered significant

Anxiety

Parents (59.2%) were more pre-occupied about this COVID-19 pandemic more than faculty (32.1%) and students (32.4%) which made them worried all day. Total 58.1% of faculty were more apprehensive and worried about contacting the coronavirus ($p<0.001$), whereas 49% and 54.5% of faculty were worried about their family's health ($p=0.006$) safety and financial status, respectively ($p<0.001$) when compared to students and student's parents. However, 44.4% of students and 29.6% of student's parents were worried about contacting the coronavirus on everyday basis and 43.4% of students, 11.1% of student's parents were worried about their family's health and safety during the ongoing pandemic over the last few weeks [Table/Fig-4].

Perceived Mental Healthcare

In the present study, 18.7% of faculty, 27.6% students and 22.3% student's parents responders felt that doing something they were good at improved their mental health status ($p<0.001$). About 53.3% of dental faculty, 65.2% students and 59.2% of student's parents felt that it would be nice to talk about their worries ($p=0.004$). About 71.5% of faculty, 86.5% students and 81.4% of student's parents thought it would be necessary to get mental health help when anyone gets panicked in this pandemic situation ($p<0.001$) [Table/Fig-5].

Sl. No.	Items	Choices	Dental faculty (165) n (%)	Dental students (808) n (%)	Student's parents (27) n (%)	p-value
1.	Are you thinking about the COVID-19 infection more frequently that keep you worried all the day?	Yes	53 (32.1%)	262 (32.4%)	16 (59.2%)	0.245
		No	54 (32.7%)	299 (37%)	7 (25.9%)	
		May be	58 (35.2%)	247 (30.6%)	4 (14.8%)	
2.	From the last few weeks do you feel worried about contacting the coronavirus?	Not at all	24 (14.5%)	250 (30.9%)	11 (40.7%)	<0.001
		More than half a days	41 (24.8%)	200 (24.7%)	8 (29.6%)	
		Early everyday	100 (60.6%)	358 (44.4%)	8 (29.6%)	
3.	Are you worrying too much about it's effect on your family's health and safety?	Not at all	21 (12.7%)	121 (15.0%)	5 (18.6%)	0.006
		More than half a days	63 (38.2%)	336 (41.6%)	19 (70.3%)	
4.	Are you worrying much about its effect on your family's financial status?	Not at all	20 (12.2%)	218 (27%)	5 (18.5%)	<0.001
		More than half a days	55 (33.3%)	215 (26.8%)	16 (59.2%)	
5.	Are you worried of how your new normal life is going to be?	Yes	87 (52.8%)	537 (66.5%)	20 (74.1%)	<0.001
		No	25 (15.1%)	125 (15.5%)	0 (0%)	
		May be	53 (32.1%)	146 (18.1%)	7 (25.9%)	
6.	Are you getting easily annoyed or irritable?	Not at all	71 (43%)	361 (44.7%)	10 (37%)	0.766
		More than half a days	66 (40%)	307 (38.0%)	14 (51.8%)	
		Everyday	28 (17%)	140 (17.3%)	3 (11.2%)	
7.	From the last few weeks do you feel afraid if anyone in your social circle reports of being sick?	Yes	81 (49.2%)	457 (56.6%)	20 (74.1%)	0.039
		No	42 (25.4%)	205 (25.4%)	5 (18.5%)	
		May be	42 (25.4%)	146 (18.1%)	2 (7.4%)	

[Table/Fig-4]: Anxiety Related to COVID-19 Pandemic.
p-value <0.05 considered significant

DISCUSSION

Humans often get infected with viruses which are transmissible and infectious [1]. The earlier outbreaks such as Severe Acute Respiratory Syndrome-Coronavirus-2 (SARS-CoV-2) and Middle East Respiratory Syndrome-Coronavirus (MERS-CoV) in 2003 and 2015 were similar to the recent coronavirus outbreak that was first reported in December 2019 [11].

Epidemics and pandemics emerge periodically. The SARS-CoV-2 contains positive-sense single stranded Ribonucleic Acid (RNA), and genetically closes to bat coronavirus. Family of these viruses is known for developing human sickness including common cold to more severe diseases such as severe MERS [12].

COVID-19 is an example of a pandemic that began in China and quickly spread across borders, infecting individuals all over the world and posing a number of issues. WHO reported that more than 80% of COVID-19 patients showed mild symptoms and recovered without any medical intervention, approximately 20% of infected

Sl. No.	Items	Choices	Dental faculty (165) n (%)	Dental students (808) n (%)	Student's parents (27) n (%)	p-value
1	How are you looking after your mental health? (multiple options were selected)	Doing meditation	44 (26.7%)	208 (25.7%)	14 (51.8%)	<0.001
		Eating well	77 (46.6%)	231 (28.6%)	5 (18.5%)	
		Caring for others	13 (7.8%)	146 (18%)	2 (7.4%)	
		Doing something am good at	31 (18.8%)	223 (27.6%)	6 (22.3%)	
2.	Do you think it would be nice to talk about your worries for the COVID-19 viral pandemic?	Yes	88 (53.3%)	527 (65.2%)	16 (59.2%)	0.004
		No	39 (23.6%)	105 (13.0%)	8 (29.6%)	
		May be	38 (23.1%)	176 (21.8%)	3 (11.2%)	
3.	Do you think it is necessary to get mental health help if anyone panics in this pandemic situation?	Yes	118 (71.5%)	699 (86.5%)	22 (81.4%)	<0.001
		No	24 (14.5%)	34 (4.2%)	2 (7.4%)	
		May be	23 (14%)	75 (9.3%)	3 (11.2%)	

[Table/Fig-5]: Perceived mental healthcare related to COVID-19 pandemic. p-value <0.05 considered significant

cases had a severe illness such as shortness of breath, septic shock and multiorgan failure, and it has been reported that an estimated 2% of cases can be fatal with increased risk in elderly and with underlying chronic diseases [13]. As prevention is better than cure; regular hand washing with soap, using face masks, isolating confirmed and suspected cases are the best prevention methods [14].

Lack of knowledge of the issue frequently leads to an uncaring attitude, which can have a significant impact on the ability to meet these obstacles. As a result, there is an increase in anxiety and a stressful environment. The impact of this pandemic is severe, and it has had a negative impact on the mental health of a particular demographic. People's conduct has been impacted by the fear and worry associated with the epidemic [10]. Hence, this study was attempted to evaluate the awareness, attitude, anxiety and perceived mental healthcare needs during COVID-19 in the community. It is very important to provide health awareness for effective prevention of disease spread and for good mental health [10].

In the present study, results indicated that almost all the respondents equally had a good level of awareness and adequate knowledge about the COVID-19 infection and also on clinical symptoms and its preventive measures. It was possibly due to the media platforms emphasising more on the clinical symptoms and preventive measures [15]. A recent study on the coronavirus pandemic disease outbreaks has stated, high levels of COVID-19 awareness was seen among general population and healthcare professionals due to varied reasons [10]. However, parents followed by faculty, students showed a favourable attitude toward combating the COVID-19 epidemic by agreeing to avoid travel (100%), adopting appropriate hygiene measures like hand washing (59.2%), and self-quarantining (92.6%) of those with symptoms. Almost majority of the people polled said that social isolation was the most effective way to combat the pandemic. An earlier study by Modi PD et al., showed similar results where 52.5% of the responders aware of the proper oral hygiene measures as compared to our study with 59.5% awareness [8]. This lack in complete awareness among the various respondents proves that there is a need for COVID-19 infection control strategies with ongoing educational interventions and training programmes among all healthcare professionals [8].

In the present study, more than faculty and students, parents were more pre occupied in thinking about the disease which could be due

to lockdown imposed. Faculty was more worried about contacting coronavirus infection, family's health and safety and their financial status than the students and parents. This could be due to rules imposed by the government to the doctors including dentists to attend the COVID-19 screening camps due to lack of man power, though after training would have made them invariably apprehensive and more anxious in few states of South India [16]. Later students were more anxious than parents in contacting the infection, family's health and financial status as they were prime supporters to them in every possible manner.

Interestingly parents were more concerned, annoyed or irritable and worried followed by students and faculty about how new normal life is going to be in different aspects like student's education, family health and financial status. Moreover, there were fewer opportunities to vent out their stress as they are made to stay at home due to lockdown situation. Many participants felt the need to talk about their worries with someone related to COVID-19 pandemic. This is important to provide necessary information to support family guiding strategies for parents [17].

About 70-80% of the total responders felt a need for mental health help among which dental students (86.5%) and students' parents (81.4%) were having greater anxiety and need of mental health help. These results were similar to an earlier study where they have evaluated the necessity for mental health help among general population and healthcare professionals which suggested a similar percent of responders opting for a need for mental health help [16]. However, to the best of the knowledge available there were no anxiety related surveys conducted in students parents. Considering the risk of the spread of COVID-19 infection it would be of great benefit that an online mental health consultation would be helpful to parents [18].

The present study's findings suggest that faculty and students were aware about taking precautionary measures. Faculty, parents and students had concern about their family's health, safety and financial status and would have helped in alleviating the anxiety levels. However, all these measures are dependent on the severity and the stage of the outbreak. Facts suggest that public awareness is critical in combating pandemics. Therefore, assessing parent's knowledge and attitude towards pandemic plays a crucial role [19]. Previous studies done on pandemic diseases recommend that knowledge and attitudes towards infectious diseases are connected with level of anxiety, emotion among the individuals [Table/Fig-6] [10,16,17,20-24].

Author	Conclusion
Roy D et al., 2020 [10]	More than 80% of participants stated that they needed mental healthcare.
Hamid K et al., 2020 [16]	During the COVID-19 pandemic, there is a need to raise awareness and address people's mental health concerns.
Ebrahim A et al., 2020 [17]	Parents' COVID-19 Information seeking behaviour patterns and traits have the ability to influence the degree of anxiety symptoms in their children.
Giao H et al., 2020 [20]	The majority of healthcare staff were knowledgeable about COVID-19 and had a favourable opinion toward pandemic.
Mohammed BasheeruddinAsdaq S et al., 2021 [21]	There is a need for more manpower, better COVID-19 management training, and strategies to reduce anxiety among healthcare professionals.
Limbu DK et al., 2020 [22]	With increasing age, appropriate infection control practice is associated with increased understanding and a favourable attitude toward COVID-19 infection.
Yesse M et al., 2021 [23]	Type of health facilities, level of education, training on COVID-19, work experience, type of source of information were significantly associated with knowledge, attitude and practice of healthcare workers.
Parajuli J et al., 2020 [24]	There was a significant gap in information source, sufficient knowledge and low positive attitude about COVID-19 among healthcare workers.

[Table/Fig-6]: Various studies on knowledge, anxiety among healthcare workers [10,16,17,22-24].

Limitation(s)

The study was limited to the teaching faculty, students and their parents without including the general population. Another limitation was participants with smartphones with e-mail IDs only were able to take the survey. Importantly questionnaire was self-reported and chances of bias would be more.

CONCLUSION(S)

During the COVID-19 pandemic, the majority of healthcare workers including faculty, students, and their parents, were aware of the risk of infection and had a favourable attitude towards prevention. However, there is a significant discrepancy in anxiety and mental healthcare needs between the groups, with faculty being more anxious and students and their parents requiring more mental healthcare.

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PARTICULARS OF CONTRIBUTORS:

1. Professor, Department of Periodontics, Vishnu Dental College, Bhimavaram, Andhra Pradesh, India.
2. Professor, Department of Oral Pathology, Vishnu Dental College, Bhimavaram, Andhra Pradesh, India.
3. Professor, Department of Periodontics, Vishnu Dental College, Bhimavaram, Andhra Pradesh, India.
4. Reader, Department of Periodontics, Vishnu Dental College, Bhimavaram, Andhra Pradesh, India.
5. Reader, Department of Periodontics, Vishnu Dental College, Bhimavaram, Andhra Pradesh, India.
6. Senior Lecturer, Department of Periodontics, Vishnu Dental College, Bhimavaram, Andhra Pradesh, India.
7. Senior Lecturer, Department of Periodontics, Vishnu Dental College, Bhimavaram, Andhra Pradesh, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. KSV Ramesh,
Flat No. 309, SLV Siva Sri Gowri Bhadra Enclave, 32nd Ward, Netaji Street,
Bhimavaram, Andhra Pradesh, India.
E-mail: rameshksv@vdc.edu.in

PLAGIARISM CHECKING METHODS: ^[Jain H et al.]

- Plagiarism X-checker: Feb 16, 2021
- Manual Googling: Jan 21, 2022
- iThenticate Software: Jan 31, 2022 (11%)

ETYMOLOGY: Author Origin

AUTHOR DECLARATION:

- Financial or Other Competing Interests: None
- Was Ethics Committee Approval obtained for this study? Yes
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

Date of Submission: **Feb 05, 2021**

Date of Peer Review: **May 14, 2021**

Date of Acceptance: **Jan 24, 2022**

Date of Publishing: **Feb 01, 2022**