

# Apprehension of dental treatment and awareness of virtual dental consultation among rural population in Karnataka during COVID-19 pandemic lockdown

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## Abstract

**Background:** The goal of “Health for All” initiated by WHO envisions securing the health and well-being of people across the globe. SARS-COV-2 coronavirus discovered in December 2019 is said to cause severe pneumonia characterized by fever, cough, shortness of breath and was declared as a global pandemic by WHO. In India the second wave of coronavirus has caused lot of problems with hospitals and medical facilities overwhelmed. WHO and CDC has recommended several biosafety measures and guidelines due to high risk of contamination during dental care. Covid-19 pandemic risk and lockdown measures to curtail the transmission has led to suspension of dental healthcare to the public in many places. Teleconsultation/ Telehealth refers to interactions that happen between a clinician and a patient for the purpose of providing diagnostic or therapeutic advice through electronic means. Teledentistry a subunit of telehealth can be used in routine dental practise to avoid unnecessary exposure of the healthy subjects to the suspects and to decrease the possibility of transmission in dental office. **Methodology:** A quantitative dichotomous cross-sectional questionnaire survey will be conducted among the rural population. The study population will be chosen randomly among rural population. Only adults will be considered in the survey. Researcher made Questions will be given to the participants in hard copy. The questions will include the Demographic data, Gender, accessibility of dental set up and dentists and awareness of dental tele-consultations. Data obtained will be utilised to assess the accessibility of dental treatment for the public and mode of dental tele consultation preference among rural population. **Conclusion:** COVID-19 pandemic has caused a lot of concerns regarding the safety during dental procedures. Since the risk of transmission is high due to the very nature of the procedure, assessing the awareness in rural population is crucial. Teledentistry can play a key role in bridging the dental issues and the accessibility of dentists. Proper protocol about its usage with training about it to the dental professionals would be advised. Further steps are required to create awareness about it in the rural population.

**Keywords:** Dental Treatment, Awareness, Health For All, Oral Hygiene

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## INTRODUCTION

SARS-CoV-2 coronavirus discovered in December 2019, is a part of family of viruses that cause respiratory infections and in March 2020, World Health Organization (WHO) considered its disease (COVID-19) as a global pandemic.<sup>1</sup> long incubation period, ease of transmission through direct and contact routes and development of nonspecific symptoms has made it extremely difficult to contain the spread.<sup>1,2</sup> Social

distancing has emerged as the most widely adopted strategy for its mitigation and control. Avoiding social contacts in workplaces, schools and other public places has been the main target measure. It aims to reduce interactions to avoid transmission between large community of people.<sup>3</sup> However, the surge of Covid-19 cases since march 2021 in India has led to second wave of the disease in the country with hospitals and medical facilities overwhelmed.<sup>4</sup> WHO and CDC has recommended several biosafety measures and guidelines due to high risk of contamination during dental care. Aerosols caused by dental devices can transmit pathogenic microorganisms through air and can remain suspended in air for long time. Thus, considering the covid-19 pandemic risk and the lockdown measures to curtail the transmission has led to suspension of dental healthcare to the public in many places.<sup>5-9</sup> Teleconsultation / Telehealth refers to interactions that happen between a clinician and patient for the purpose of providing diagnostic or therapeutic advice through electronic means. Tele-dentistry a subunit of telehealth can be used in routine dental practise to avoid unnecessary exposure of the healthy subjects to the suspects and decrease the possibility of transmission in dental office.<sup>10</sup> The second wave of covid-19 being very severe in India with lockdown in place, assessing the awareness of dental teleconsultation will be vital for dental care.

**METHODOLOGY**

A Quantitative dichotomous cross-sectional questionnaire survey was conducted among Rural

population during covid-19 pandemic lockdown. A total of 300 subjects between the age group of 20-70 years participated in the study as per sample size estimation.

**Questionnaire design:** Researcher made questions were given to the participants in hard copy. Pilot study was done for both content validation and face validation of the questionnaire and was found to be satisfactory. Internal consistency of the questions was done using cronbach alpha analysis and was 0.81. Study population were chosen randomly among rural population at village and taluk level. The questions will include the demographic data, gender, accessibility of dental setup, dentists and awareness of dental tele-consultations. Participants how have attended all the questionnaires are only taken into consideration. Data obtained will be utilised to assess the accessibility of dental treatment for the public and mode of tele consultation preference among rural population.

**Statistical analysis:** The characteristics, apprehension and awareness of study population towards the dental tele-consultation were analyzed using the descriptive statistics. SPSS 21.0 version (SPSS Inc., Chicago, IL, USA) statistical software was used in the study.

**RESULTS**

The baseline characteristics of the participants in study are shown in table 1. Of the 300 participants, 197 (66%) were males and 103 (34%) were females. Participants from village were more (37.3%), and from taluk (41%), and less from city (21.6%). The largest age group was 29-39 years (27.3%). occupation of most of the participants was farming (46.6%).

**Table 1: Demographic details of the participants**

	Number (n)	Percentage (%)
<b>GENDER</b>		
Male	197	66%
Female	103	34%
<b>AGE</b>		
19-29	68	22.66
29-39	82	27.33
39-49	76	25.33
49-59	54	18
59-69	12	4
69-79	4	1.33
<b>OCCUPATION</b>		
Farmer	140	46.66
business	57	19
professional	37	12.33
housewife	66	22
<b>RESIDENCE</b>		
Village	112	37.33
Taluk	123	41
City	65	21.66

**Table 2:** Frequency of answers given to Dental issues faced by the participants

characteristic	YES	NO
Dental problem	131 (43.6%)	169 (56.3%)
Hampering the daily routine	86 (28.6%)	214 (71.3%)
Able to meet Doctor or not	16 (12.2%)	115 (87.7%)
Medication taken	74 (56.5%)	57 (43.5%)
Prescription given by doctor	13 (17.5%)	61 (82.4%)

Frequency of response to the dental issues of the participants is enlisted in table 2. There was a significant number of participants facing dental problems. 131 participants (43.6%) faced dental issues with 86 of them (28.6%) facing hampered daily routine. Significant number of patients (87.7 %) were not able to meet the dentists during lockdown. On the question asked for medication taken or not for the dental problem, 56.5% of the participants had taken medication of which 82.4% of the participants had not got it prescribed by doctor.

**Table 3:** Apprehension of dental treatment / going to dental clinic

	YES	NO
village	42 (37.5%)	70 (62.5%)
taluk	89 (72.3%)	34 (27.6%)
city	59 (90.7%)	6 (9.2%)

Apprehension of patients to dental treatment and going to dental clinic is recorded in table 3. Taluk resident participants had most apprehension (29.6%) about the dental treatment with city resident participants having least apprehension (2%).

**Table 4:** Awareness of dental tele consultation:

	YES	NO
Village	04 (3.5%)	108 (96.4%)
Taluk	36 (29.3%)	87 (70.7%)
City	42 (64.6%)	23 (35.3%)

The extent of awareness of dental tele consultation is recorded in table 4. City resident participants recorded the highest awareness (64.6%). Whereas, Village resident participants recorded the least with 96.4% of participants unaware about Tele dentistry.

**Table 5:** frequency of response to the Dental tele consultation beneficial or not question

	YES	NO
Village	06 (5.3%)	106 (94.64%)
Taluk	89 (72.3%)	34 (27.6%)
City	56(86.1%)	09 (13.84%)

Though many of the participants were not aware of tele-dentistry, in response to the question tele-dental consultation being beneficial or not, taluk resident participants responded well with 72.3% of the population positive with dental teleconsultation being beneficial. However, 94.6% of the village resident participants thought of no use to them about

**Table 6:** Frequency of response to the question for Mode of Tele consultation helpful to them

	Phone call	WhatsApp messenger Inc	Video call	SMS
village	06	00	00	00
taluk	28	06	00	00
city	34	18	02	02

In the table 6 depicting mode of tele consultation of choice, 6 participants from village residence responded that phone call would be the choice of mode of teleconsultation to them. 28 participants from taluk residence opted phone call as the choice of communication with dentists for tele-consultation. 18 city resident participants opted WhatsApp messenger Inc mobile application would be the ideal choice of tele consultation mode.

## DISCUSSION

The goal of "Health for All" initiated by WHO envisions securing the health and well-being of people across the globe. The advancement in information and communication technology has gained a lot of importance in medical care service. In dental procedures,

contamination with blood and saliva is unavoidable because of the nature of the profession. In the previous survey studies related to covid-19 pandemic outbreak, knowledge of students and dentists were carried out.<sup>6,11-13</sup> However, the awareness of dental procedural risks involved during the pandemic among the rural population

and accessibility to the dentists for them had to be surveyed. various studies previous to the covid-19 pandemic have emphasized the importance of awareness among patients and their apprehension as critical in addressing the issue. In this study we assessed the Apprehension of patients towards the dental treatment and visiting dental clinic during the pandemic and the awareness of online dental tele consultation in rural population. The results obtained from similar studies previously shows that higher age group had apprehension and identified themselves as risk group. In our study, the baseline characteristics of the participants was recorded with all the details which included gender, Age, residence and occupation. The target of subjects were rural population and farming occupation formed the largest group. Significant number of participants had dental issues and couldn't meet the dentist professional for the treatment (87.7%).

Teledentistry a subunit of telemedicine was used by NASA first in 1970s. With the technological innovations and high-speed internet networks teledentistry can prove to be of a great help for patients with dental emergencies. Conversations through online allows the data exchange of several types. However, there are pitfalls in teledentistry wherein procedural treatment cannot be done.

In our study the apprehension of visiting dentists was least among the village resident population which was comparable with study done by kumar *et al.* This can attribute to the low levels of awareness of the risks involved during dental treatment. However, many participants even though they had little awareness about tele dentistry, the response of dental tele consultation being beneficial to them was striking. village participants opted the phone call mode of communication with the dentists as beneficial. This can be attributed to the less usage of smartphones and unreliable internet connectivity in the rural areas. Taluk participants very optimistic about the beneficials involved in teledentistry. Overall, teledentistry can be vital for addressing the dental issues of the rural population during the current pandemic situation.

## CONCLUSION

COVID-19 pandemic has caused a lot of concerns regarding the safety during dental procedures. Since the risk of transmission is high due to the very nature of the procedure, assessing the awareness in rural population is crucial. Teledentistry can play a key role in bridging the dental issues and the accessibility of dentists. Proper

protocol about its usage with training about it to the dental professionals would be advised. Further steps are required to create awareness about it in the rural population.

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