

**IJDSDR : Dental Publication**Available Online at: [www.ijdsdr.com](http://www.ijdsdr.com)

Volume – 2, Issue – 1, January – February - 2023, Page No. : 06 – 13

**Effectiveness Analysis of telemedicine in management of oral and maxillofacial surgery patients during COVID 19 pandemic – A cross-sectional study**<sup>1</sup>Eda Barco Altman, Maxillo-Facial Surgery Unit, Department of Experimental and Clinical Medicine, Catanzaro, Italy<sup>2</sup>Daniela Vozikis, Maxillo-Facial Surgery Unit, Department of Experimental and Clinical Medicine, Catanzaro, Italy<sup>3</sup>Dlio Giuffre, Maxillo-Facial Surgery Unit, Department of Experimental and Clinical Medicine, Catanzaro, Italy<sup>4</sup>Davide Blessandro, Maxillo-Facial Surgery Unit, Department of Experimental and Clinical Medicine, Catanzaro, Italy**Correspondence Author:** Eda Barco Altman, Maxillo-Facial Surgery Unit, Department of Experimental and Clinical Medicine, Catanzaro, Italy.**How to Cite This Article:** Eda Barco Altman, Daniela Vozikis, Dlio Giuffre, Davide Blessandro, “Effectiveness Analysis of telemedicine in management of oral and maxillofacial surgery patients during COVID 19 pandemic – A cross-sectional study”, IJDSDR – January – February - 2023, Vol. – 2, Issue – 1, P. No. 06 – 13.**Open Access Article:** This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.**Type of Publication:** Review Article**Conflicts of Interest:** Nil**Abstract**

Telemedicine can be broadly defined as the use of telecommunications technologies to provide medical information and services. Telemedicine allows health care professionals to evaluate, diagnose and treat patients at a distance using telecommunications technology. Interest in the field has increased dramatically in the 1990s. Telemedicine is a medium that encompasses any medical activity involving an element of distance. Basically, it is a doctor-patient interaction involving tele communication. A few years ago, the term telemedicine began to be supplanted by the term telehealth, which was thought to be more “politically correct,” but in the past years, this too has been

overtaken by even more fashionable terms such as online health and e-health. As tele communication technology has advanced and costs have declined over the past decade, there has been a steady growth in telemedicine. Telemedicine is conceived of as an integrated system of healthcare delivery that employs tele communications and computer technology as a substitute for face-to-face contact between provider and client. It has the potential for ameliorating seemingly intractable problems in healthcare such as limited access to care among segments in the population, especially the geographically disadvantaged uneven quality of care, and cost inflation.

**Keywords:** Telemedicine, Covid-19, E-Health, Pandemic.

### **Introduction**

The tele-communication is a bridge communication for the whole world. And they serve as a medium to connect people all over the world. They are the new and advanced technology to create a web of communication that can help us in difficult situations. They apply to the medical field too.

Patients who have difficulty, but are unable to go to the doctor, people who have problems within them but cannot go to doctor because of reserved society or heaving situations like pandemic, telecommunication can play a major role. Telecommunication is a direct connection of the patient and the doctor through a global network. Telecommunication works on three principles, they are real time telemedicine, remote patient monitoring and store and forward telemedicine. Real time telecommunication is the direct communication with the patient and their guardian, and collection of chief complaints, history of complaint, family history and medication history. The chief complaint is usually taken from the patient and based on the way they express it. The family history is collected both from the patient and guardian, and assesses all to check for the primary diagnosis. Real time tele communication can be taken in appointments and they are the process of interacting with the patient. They serve to connect the doctor and the patient and maintain the bond between them. This will build trust in the doctor and this makes the patient very close to the doctor. The second principle is remote patient monitoring, it can be defined as a technology to enable monitoring of patients outside of conventional clinical settings, such as in the home or in a remote area, which may increase access to care and decrease healthcare delivery costs. This is a process purely done

by the patient, this process requires few common equipment which should be present in house hold settings. Common equipment like thermometer and BP level analyzer, sometimes pulse level and pulse oximeter. The patient and guardian should cooperate with each other and should record all this information over the chart provided to them. These are the vital analyses and they help in the diagnosis. And the last principle is store and forward, this is the process of saving the complete history of the patient and storing in the cloud service. The cloud service is the common access provided to all the doctors who are involved in telemedicine. They are the reserve of all the patient details auto update each and every hour. Once the ID of the patient is entered, the whole history is provided to the attending doctor.

Telemedicine is most accepted in developed countries because most of the people are aware of telemedicine, they are pretty cheap when compared to the general physician, the work of the doctor is little less because they schedule the appointments when they are free. This kind of awareness is lacking in developing countries, the unavailability of network connection, proper vital analysis instruments, etc.

hence developing countries are unable to support tele medicine. Telemedicine is not applicable for severe complaints like major involvement of heart, lungs and brain, but they give an immediate remedy for all that. Telemedicine usually attends patients who have minor problems and counselling sessions. One of the best uses of telemedicine is the auto record history for each and every patient on their ID. hospitals keep track of their patients, but there is a high possibility that patients approach various hospitals for the best treatment. So, the interlinking of all these records is not available, which is provided in case of telemedicine.

Telemedicine entered the market of all over world the recent years, this is not well accepted by the people but patients who are aware of the technology initiated to approach this aspect. Telemedicine is used in some major hospitals to collect the primary data from the patients, followed by calling the patient over the hospital for the treatment.

Our team has extensive knowledge and research experience that has translated into high quality public cations.

**Materials and Methods**

This cross-sectional study was conducted in July 2020 to June 2021 among 50 dentists. A questionnaire consisting

of 15 questions to assess the knowledge, attitude and practices regarding telemedicine among dentists were prepared and circulated among the dentists using google forms [Table 1]. The dentists were requested to answer, data was collected and then tabulated. Later data was exported to SPSS software. Frequency, percentages were ascertained and association with gender was done using chi square analysis with  $p < 0.05$  as statistically significant. Bar graphs were used to depict the results obtained.

Table 1: Questionnaire regarding knowledge, attitude and practices towards telemedicine.

Sn.	Questions	Options
1	Name	
2	Age	
3	Gender	Male Female
4	What do you understand about the word 'telemedicine'?	Use of technology to check for drugs Remote diagnosis and treatment of patient by telecommunication Checking google for treatment All the above
5	What is/are the example/es of telemedicine?	Patient counselling via video conference Nurse call centres Remote monitoring of vital signs All the above
6	How many types of telemedicine are there?	1 2 3 4

		5
7	Do you think type 1 of telemedicine is of store and forwarded type?	Yes No May Be
8	Do you think type 2 and 3 are remote monitoring and real time services respectively?	Yes No May Be
9	Do you think telemedicine is better than direct visits?	Yes No
10	Is telemedicine available everywhere?	Yes No May Be
11	Do you think telemedicine can be provided to all classes of people?	Yes No May Be
12	Telemedicine facilitates diagnosis and treatment.	Strongly Agree Agree Neutral Disagree Strongly Disagree
13	Telemedicine is well into our day-to-day work style.	Strongly Agree Agree Neutral Disagree Strongly Disagree
14	Telemedicine decreases staff's workload.	Strongly Agree Agree Neutral Disagree Strongly Disagree

15	I believe, using telemedicine on a trial basis is enough to see what it could do.	Strongly Agree Agree Neutral Disagree Strongly Disagree
16	Do you practice telemedicine?	Yes No Sometimes
17	Why do people opt for telemedicine?	Patient's Convenience Immediate Remedy Travel Less Remedy No Working Hours Schedule
18	Why is telemedicine not so popular in all over world ?	Lack of Awareness Lack of Trust Accessibility Issues None of The Above

**Results**

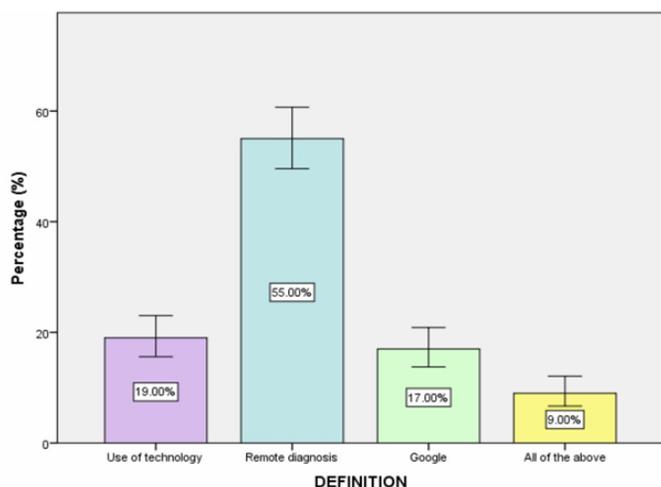


Fig. 1: This bar graph represents the responses of dentists regarding the definition of telemedicine. X axis represents the various responses and Y axis represents the percentage of respondents. Responses follows -- use of technology-19%, remote diagnosis-55%, usage of google-17% and all the above-9%.

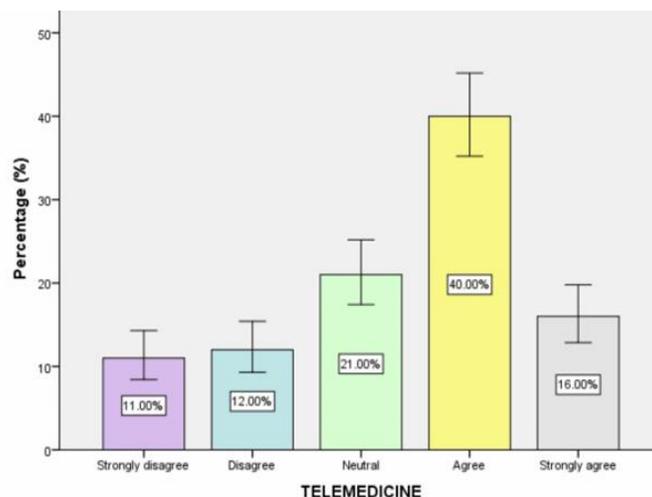


Fig. 2: Bar graph represents the responses of dentists regarding promotion of telemedicine in day-to-day work style. X axis represents the various responses and Y axis represents the percentage of respondents. Responses whereas follows -- strongly disagree-11%, agree-12%, neutral-21%, agree-40% and strongly agree-16%.

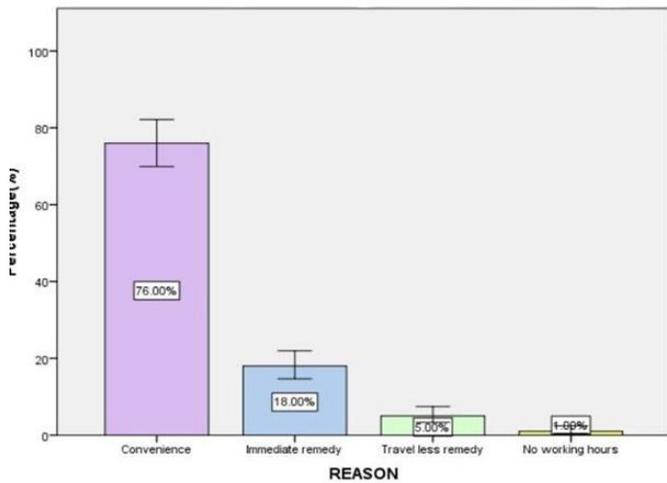


Fig. 3: Bar graph represents the responses of dentists regarding the reason for practicing telemedicine. X axis represents the various responses and Y axis represents the percentage of respondents. Responses whereas follows -- convenience-76%, immediate remedy-18%, travel less working-5% no recognized working hours-1%.

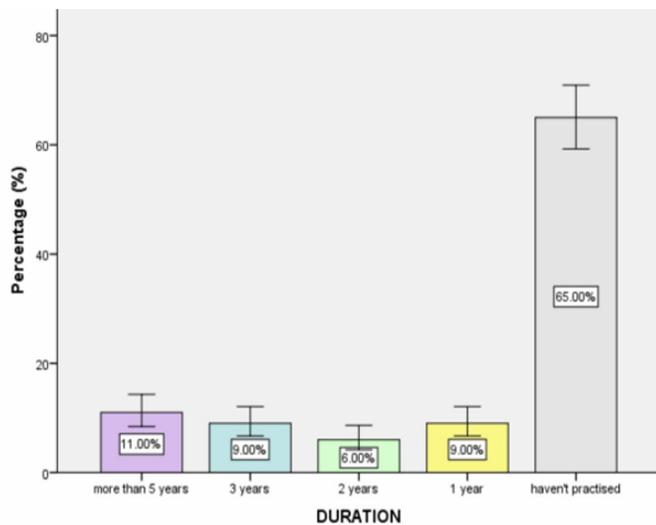


Fig. 4: Bar graph represents the responses of dentists regarding their duration of practicing telemedicine. X axis represents the various responses and Y axis represents the percentage of respondents. Responses whereas follows -- more than 3 years-11%, 3 years-9%, 2 years-6%, 1 year-9% and not practicing - 65%.

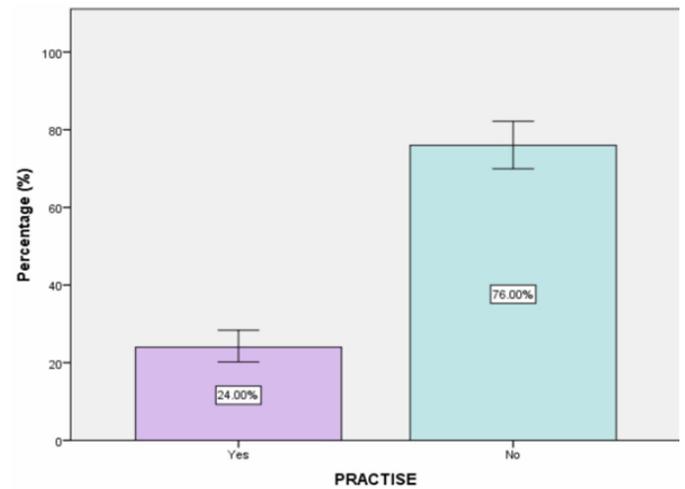


Fig. 5: Bar graph represents the responses of dentists regarding practicing telemedicine. X axis represents the various responses and Y axis represents the percentage of respondents. Responses whereas follows -- yes-23% and no-77%

X axis represents the various responses and Y axis represents the percentage of respondents. Responses whereas follows -- yes-23% and no-77%

### Discussion

Depending on your healthcare provider's setup, doctors can use telemedicine for your consultation. The consultation required basic vital analytic instruments and specific diagnostic instruments; hence they refer you to the nearest doctor. The doctor can forward diagnostic images such as X-rays and your medical history to the telemedicine doctor for them to review. The telemedicine doctor may have enough information to make a diagnosis and even create the appropriate treatment plan. If not, they can contact you or your doctor for more information. Together you all can decide on the best treatment plan.

The limitations of this study include the low demographic data. The involvement of a large number of dentists from a vast area would give a greater diversity.

### Conclusion

From the study we can conclude that the dentists have an adequate knowledge of telemedicine, and positive attitude towards telemedicine but they seldom practice telemedicine. Male dentists practice telemedicine more

when compared to that of female dentists. People are aware of telemedicine, but they don't practice because of the lack of awareness over the patients. They rarely get an online case to attend, hence they discontinued. The build of trust and bond between the dentist and patient determines the case handling and length. But the inability to get cases is purely the lack of awareness of the patients.

### References

1. Orlando JF, Beard M, Kumar S. Systematic review of patient and caregivers' satisfaction with telehealth videoconferencing as a mode of service delivery in managing patients' health. *PLoS One* 2019;14:e0221848.
2. Cottrell MA, Hill AJ, O'Leary SP, Raymer ME, Russell TG. Clinicians' Perspectives of a Novel Home-Based Multidisciplinary Telehealth Service for Patients with Chronic Spinal Pain. *Int J Telerehabil* 2018;10:81-88.
3. Alkureishi MA, Choo ZY, Lenti G, et al. Clinician Perspectives on Telemedicine: Observational Cross-sectional Study. *JMIR Hum Factors* 2021;8:e29690.
4. Daniel Bk, Harland T. Higher Education Research Methodology A Step-by-Step Guide to the Research Process. 1st ed edn. Abingdon, UK: Routledge, 2018:Pages.
5. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care* 2007; 19:349-357.
6. Kichloo A, Albosta M, Dettloff K, et al. Telemedicine, the current COVID-19 pandemic and the future: a narrative review and perspectives moving forward in the USA. *Fam Med Community Health* 2020;8.
7. Binaisse P, Dehours E, Bodéré C, Chevalier V, Le Fur Bonnabesse A. Dental emergencies at sea: A study in the French maritime Tele Medical Assistance Service. *J Telemed Telecare* 2020;26:285-293.
8. Gajarawala SN, Pelkowski JN. Telehealth Benefits and Barriers. *J Nurse Pract* 2021;17:218-221. Scott Kruse C, Karem P, Shifflett K, Vegi L, Ravi K, Brooks M. Evaluating barriers to adopting telemedicine worldwide: A systematic review. *J Tele med Telecare* 2018;24:4-12.
9. Almathami HKY, Win KT, Vlahu-Gjorgievska E. Barriers and Facilitators That Influence Telemedicine-Based, Real-Time, Online Consultation at Patients' Homes: Systematic Literature Review. *J Med Internet Res* 2020;22:e16407.
10. Bradford NK, Caffery LJ, Smith AC. Telehealth services in rural and remote Australia: a systematic review of models of care and factors influencing success and sustainability. *Rural Remote Health* 2016;16:3808.
11. Monaghesh E, Hajizadeh A. The role of telehealth during COVID-19 outbreak: a systematic review based on current evidence. *BMC Public Health* 2020;20:1193.
12. Abdelrahim A, Shimpi N, Hegde H, et al. Feasibility of establishing tele-dental approach to non-traumatic dental emergencies in medical settings. *Am J Dent* 2020;33:48-52.
13. Sarki R, Ahmed K, Wang H, Zhang Y. Automated detection of mild and multi-class diabetic eye diseases using deep learning. *Health Inf Sci Syst* 2020;8:32.
14. Supriya S, Siuly S, Wang H, Zhang Y. Automated epilepsy detection techniques from

electroencephalogram signals: a review study.

Health Inf Sci Syst 2020;8:33.

15. Vasileiou K, Barnett J, Thorpe S, Young T.  
Characterising and justifying sample size sufficiency  
in interview-based studies: systematic analysis of  
qualitative health research over a 15-year period.  
BMC Med Res Methodol 2018;18:148.