TELEDENTISTRY: A SYSTEMATIC LITERATURE REVIEW

Dissertation submitted to

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Master of Business Administration (MBA)

in

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by

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Under the Supervision and Guidance of

Dr. Seema Mehta

Academic Year 2019-21

DECLARATION BY STUDENT

I hereby declare that this dissertation titled **Teledentistry: A Systematic Literature Review** is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

Rashika Sharma
Date: 2/07/2021

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This is to certify that **Rashika Sharma** in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur has successfully completed her internship at **ExpressRCM Private Limited** from March 22, 2021, to June 19, 2021.

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This is to certify that dissertation titled **Teledentistry: A Systematic Review of Literature** is a record of the research work undertaken by **Rashika Sharma** in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

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Chapter 1: Introduction

1.1 Introduction

Teledentistry is used for dental care, consultations, public awareness, and education. It is a combination of Information and Technology (ICT) for prevention, diagnosis and treatment of oral infections and diseases. It is considered as an effective, efficient, and economical delivery of dental care.

Traditionally we visited the doctor's clinic for all dental or oral issues but with advancements in the field of technology, teledentistry has emerged as an important extension in the field of dentistry and it has certainly gained more popularity during the pandemic. Teledentistry offers a more cost-effective and accessible means of treatment. You can just sit at home and connect to the doctor. It uses technologies like self-directing, online studies, streaming, media, webcast, and real-time video conferencing. Teledentistry increases the utilization of dental services and meets people's needs wherever they are. It leverages professional/co-located collaboration towards a patient-centered care delivery approach. It is used to deliver dental education, either live or on-demand.

Teledentistry uses two ways of communication-

- Video communication
- Audio communication

Teledentistry is the use of virtual dentistry to extend the possibility and capability of mobile dentistry. Mobile dentistry is often limited to preventive care and assessment connection.
Hence, the technology via teledentistry permits:

- diagnosis of the disease
- treatment planning

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It can maximize the system and workforce resources. Teledentistry effectively solves some of the biggest barriers to care by enabling access where people are recovering another type of care and services. Effective co-located care can increase patient satisfaction.

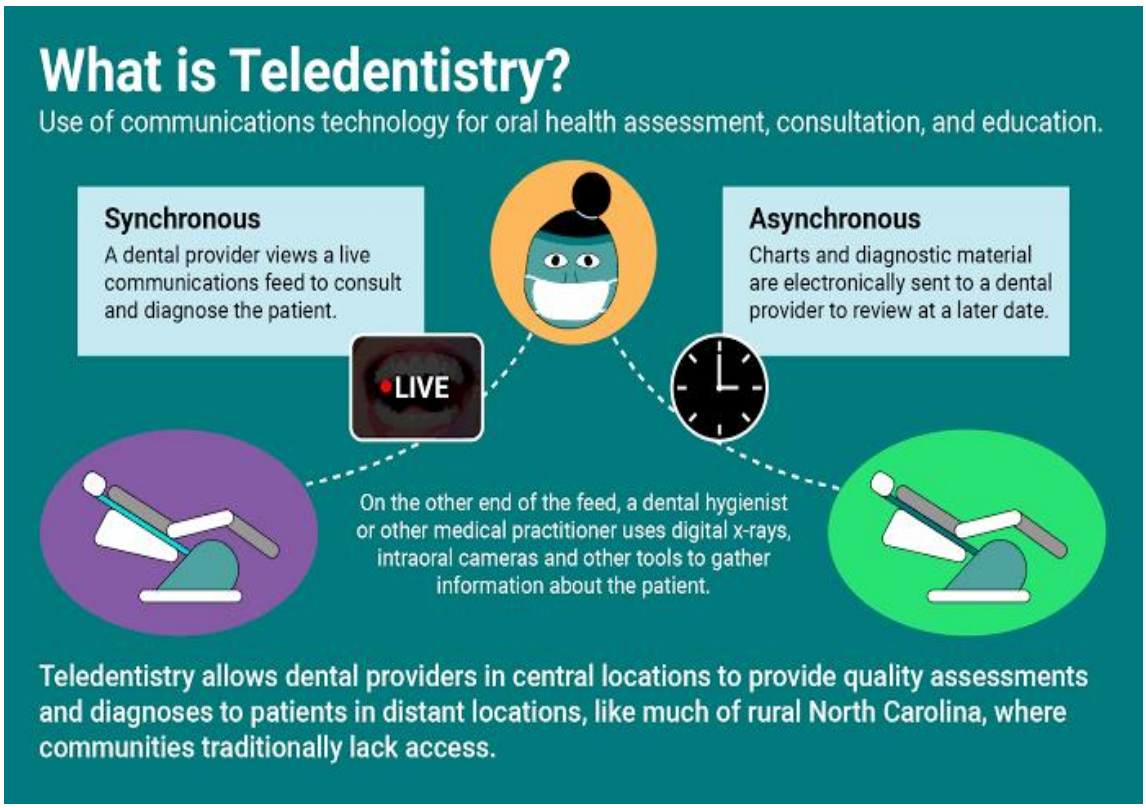

Figure 1: What is Teledentistry (5)

1.2 Purpose of Research

Teledentistry branches out as a subset of Telehealth, an essential aspect of the healthcare delivery system. (1) It aims at providing solutions to dental problem without the patient actually visiting a dentist physically.

With the ongoing pandemic, it has become difficult for patients to visit doctors for outpatient services. The lockdown on top of that has made it impossible for patients to go to the doctor for a non-emergency case. Most of the dental cases are non-emergency cases and not paying visit to the doctor has impacted both the patient and the dentist in tremendous ways.

Teledentistry in a way has paved path for such patients to seek dental consultation from the comfort of their home. They can in fact have access to online prescriptions or e-Prescription too without any hassle(3)

The main purpose of this research is hence to review the feasibility of online dentistry, and the need to research more in this domain to bring furthermore advancements in the field.

This research will also pave path for the dentists to understand the importance of being tech friendly during the current times. There is a need to incorporate technology in the dental study material (4). Dentists also need to understand how data privacy is important while handling patient information while using a computer or a mobile phone.

1.5 Aim and Objective :

The main aim of this review of literature was to answer the following questions:

- To study types of patient interaction in teledentistry and its benefits
- To review the advantage of teledentistry

The main objective of this study was to examine the evolution of teledentistry and explore its application in the field of dentistry (5)

Chapter 2: Methodology

A systematic literature review was undertaken to explore the evolution and applications of teledentistry. A comprehensive research was carried out to enlist the summary of the results of reproducible literature and available publications after hand-searching for full-text articles published in English language from electronic databases like PubMed and MedLine. The research on the evolution of teledentistry were first and foremostly carried out in these nine countries and hence we have included the research paper from the following countries in our study (6):

- UNITED STATES
- GERMANY
- SWITZERLAND
- UNITED KINGDOM
- CANADA
- AUSTRIA
- ITALY
- SPAIN
- JAPAN
- BRAZIL
- SWEDEN
- ITALY

- AUSTRALIA
- PORTUGAL
- SERBIA
- FINLAND

A total of 57 research articles were reviewed from these countries. The following search strings were used to extract data from different databases:

2.1 Keywords

- “Dentistry AND videoconferencing”
- “Dentistry AND health promotion”
- “Teledentistry AND NOT Telemedicine”
- “Telehealth AND Teledentistry”
- “Teledentistry AND remote health”
- “Teledentistry”
- “Oral health”
- “Teledentistry AND dental education”
- “Teledentistry OR Telehealth”

3.2 Inclusion and exclusion criteria

- **Inclusion criteria**
  - It includes all the studies from 1994 to February 2013.
  - All the text which is published in English and full text accessible.
  - All the contents and publications which are directly relatable to Teledentistry and related disciplines.

- **Exclusion criteria**
  - It excludes all the publications before 1994.
  - All the publications after 2013.
  - All the articles and publications which were not in English and were full text unavailable.
  - All the publications which have no concerns with the field of Teledentistry

Chapter 3: Review of the Literature

3.1 EVOLUTION OF TELEDENTISTRY

Teledentistry has a long history. It has been used to share information of the patient like images, videos, test results, diagnosis, radiographs, etc.

- At first, teledentistry was used in 1994. A Total Dental Access Project was designed by the Army in 1994 as a part of referral programs wherein personnel of army were refereed to specialist dentists for treatment planning. Soon after that Teledentistry was used by the “University of Southern California” in the form of a mobile dental clinic with the children's hospital IAS Angles Entry project. It helps the children with dentistry in rural areas (7).

- In 2004 ,the “University of Minnesota” came into the partnership with “Hibbing Community College”. Communication regarding dental treatments were established using the online mode. it was used for consultation and also used as a referral to give care to marginalized section of the society. Since then, many

states have taken teledentistry into implementation for the screening and reference. (8)

- Teledentistry has also shown its presence in mid-level providers like mid schools, orphanages, nursing homes, and nursery groups. It is used for the dental care of children and others. The dental therapist provides a very good quality of dental service and dental care to these children or elders (9). It is very beneficial for people who cannot afford visiting to a dental office in cases of physical or economic hindrances.

- Another program that was started to provide access to care through Delhi dentistry technology started in Alaska by "The Alaskan native Tribal Consortium (ANTHC)". It was initiated to develop the "Dental Health Aid Therapist (DHAT)" concept. It uses teledentistry for diagnosis and consultations. (10)

- Additionally, a school in New Zealand also started this program for the dental therapist. The DHAT started collaborating with the program between "Alaska Native Tribal Health Centre and the University of Washington (11)".

- This program was referred to dental tax. It was established in 2007 and also provides distance education to students who want to become dentist and involve in the teledentistry program.

- All the dentists and the doctors use teledentistry to consult and share digital images and radiographs and other health information. The information, image, and videos were then transmitted from DHAT to the dentist for more consultations. (12)

- The three groups of DHATS returned from their education in New Zealand for two years. They completed a clinic preceptorship and started working with Alaska natives. This happened two years after the development of ANTHC (13). Alaska has 24 certified DHAT. Which provide prevention and advanced care of dental issues in rural areas tendril a loss clinic.

- The DHAT team itself has two additional dental care professionals. They deliver services to 830 patients at 1200% every year. Out of these, 700 people were prevented from dental health issues. It was also analyzed that 500 of them were for restorative care. With the help of Alaska and its advanced technology around 35,000 people have access to dental care through technology. (14)

- After that in 2011, it was reported by the Institute of Medicine that the number of people using teledentistry has increased at a rapid rate. It is increasing mx ore in the undeserved and untreated population. They have been provided with the best dental care through technology these people do not have access of dentist and their clinic near the rural areas of the section of this study also reported that the healthcare setting of the people, but the description of telehealth technology and dental hygienist is the best way for care (14). It also collaborates with women, infants, and children agency WIC. All these agencies have access to teledentistry as so many people cannot be taken to the dentist by traveling. Tele dentistry is very important for such offices and workplaces or agencies.

- Around five dental hygienists have joined Colorado pediatric medical practices. It gives access to the children from low-income families and poor families to practice teledentistry (15).

- The results of the study increased the health of so many people and the health literacy of dentists and hygienists. It helps in reducing oral disease in children. It prevents oral diseases. The children can get the best service by spending less

money. These people have never been taken to the dentist, so they are provided with the facility of teledentistry at a very low rate.

- Dental hygiene has played a very important role in providing education to the people about the services and the measures and preventives. The potential of teledentistry is very high. It is a very disciplinary collaboration. But collaborate with healthcare at a good rate. It helps in reducing the rate and providing the best service with the best resource. It utilizes cited and takes it as the major goal of Teledentistry.

- The low cost that is required for Teledentistry with prolonged delays in diagnosis for certain oral lesions results in increased morbidity and mortality. (16)

- The toll which is used for screening the disease is very beneficial for the use of tele-dentistry. It is used for the documentation of the disease and its treatment. It is the treatment and the need of the disease. It is very helpful as it is provided by a specialist. Teledentistry screening can be done by oral lesions. It can be either traumatic or non-traumatic. It depends on the problem and issues of the patient. It reduces the waiting period of the dentist. Also, it is very helpful in reducing the pain and the cost of the suffering patient. (16)

- All the dental hygienists use teledentistry to Provide dental care and treatment to the patient with the progress. Oral diseases can be repaired and can be recovered easily. This is obtained by using M Teledentistry. It uses the screen for orthodontic., speech, and soft tissue witches there in the children. The patient can directly access the care that is provided by the dentist and 36 states (17).

- Yet another state, dental care is provided to the patient who wants to visit the clinic. There is also one to one introduction between the dentist and the patient. The dentist provides the best dental care to the patient (18). The patient is always under the supervision of the dentist.

- Among these two supervision extremes, general supervision has many operational things (19). Tele dentistry is increasing and provides an excess of care. It also keeps the patient under supervision. Tele dentistry and health are regularly used in oral care.

- The documents of literature on teledentistry are increasing at a rapid increase from the early publication in 1990 to 27 publications between 2005 and 2010. (20)

- In 2010, around 13 papers were published. The teledentistry uses these documents. Tele-dentistry is documented by the recent two systematic reviews in the publication which was published in 2013. The study of this is available results. It excludes all the patient's and the dentist's opinions. Although there are some problems like legal and ethical issues. This includes a page of 59 papers (21).

- The review of Teledentistry dentistry has been reported in many countries. The US had the greatest number of publications in the review of Teledentistry. The reviews have been reported in 15 other countries. Most of the studies were of the pilot project and short-term with the descriptive result

- These reviewed papers or under the focus. It is most often used in the education of dentistry and oral health which is related to technology. It educates the people and makes them understand how they can use technology for consultation, diagnosis, and treatment of diseases.

- Another systematic review focused on the clinical outcome. It focuses on how the outcome of the clinic will come. Details about the utilization and the cost associated with teledentistry. Although teledentistry is a one-time investment for the dentist. It provides less cost after that. 19 papers were reviewed under this.

- It describes Tele-dentistry, which is used for orthodontics, consultation, and review. It also deals with its treatment and oral disease prevention. Tele-dentistry is used for screening dental problems at a very less rate.

- There is no such research that talks about the methodology that has been determining the efficiency, and utilization, and cost. The methodologies and sound research are Necessary for the evidence, and to know about the satisfaction which is provided to the patient by the dentist. It saves all the data and information, the images, and videos of the patient. It is cost-effective and very useful (22).

Table 1: Authors and Publications on application of teledentistry in various dental specialization

Specializations	**Author**	**Purpose of study**	**Conclusion.**
oral medicine	**Torres-Pereiraet al. (2013)**	Give information and involves the	It uses technology to increase the accuracy

		application of telediagnosis in oral medicine through which the images can be transmitted images by e-mail (23)	of consultation and treatment through technology. Both the patient and the dentist should be present for the correct diagnosis
oral medicine	**Almeida Castro et al. (2014)**	It determines that: is teledentistry is a useful tool for screening to show the presence of dental caries (24).	Teledentistry is a better option as it saves time and money, and it is more reliable than the old and traditional dentist clinic examination and assessment.
Pedodontics	**Purohit et al. (2016)**	The patient gets access to using tools and a video graphic method which is also carried among schoolchildren (25).	Teledentistry is used as a screening tool for diagnosis of dental caries and treatment using remote consultation and treatment planning modalities
Periodontics	**Rocca et al. (1999)**	To evaluate the removal of sutures	Patients felt that they

		150 miles far in the tele supervision of the periodontist (26).	have received better care and dentists were also comfortable in making decisions
orthodontics	**Favero et al. (2009)**	To codify a distance communication method based on teleassistance (27).	There is a possibility that the video can be shared, and the images can be shared in the orthodontic field. If there is a minor emergency, it can be solved easily at home but if it is severe the patient and his family should reach the dentist for one-to-one treatment.
Endodontics	**Brullmann et al. (2011)**	Remote identification of root canal orifices was on endodontically accessed teeth acquired with the help of an intra-oral camera (28).	Teledentistry can be used as an effective tool by dental trainers to help students in root canal detection

Prosthodontics	**Ignatius et al. (2010)**	To probe if online conferencing could be used for diagnosis and for planning the treatment for patients that require prosthetic or oral rehabilitation. (29)	The dental specialist services in sparsely populated areas can be increased using the mode of video consultation to increase accessibility
oral and Maxillofacial surgery	**Miladinović et al. (2013)**	To assess whether teledentistry can be used to treat dental infections and can be widely effective in the field of dental pathology (30)	Telemedicine can be used successfully make clinical diagnosis of dental infections in real time and can also be used to plan treatments accordingly

3.2 Types of Patient interaction in Teledentistry

There are CDT code entries in teledentistry that are divided into D9995 and 99996.

D9995- Synchronous

D9996- Asynchronous

The interaction between a dentist and the patient can be done through two methods:

- Synchronous dentistry
- Asynchronous dentistry

3.2.1 Synchronous dentistry

This is the interaction between the dentist and the patient through audiovisual Telecommunication. Synchronous Teledentistry is dental care and education given to the patient. It is a live and two-way interaction between the dentist and patient at one physical location. It is real-time communication (31). It provides all the data and information. It uses audiovisual telecommunication Technology that involves the person and the dentist for further checkups. It makes the doctor connected to the patient via technology. Through this, the patient can get a lot of advantages as he can share his information and his problems of concern to the dentist without even wasting time on going to visit the dentist. It saves money as well as it saves time. As it is a live interaction between the dentist and patient it becomes very easy for both the patient and the doctor to communicate. As they both can tell each other the problems of the solution. It gives more advantages than asynchronous dentistry because here you can communicate with the dentist, and you can share all your problems and your pain with the dentist. The dentist on the spot can help you with a problem. He may suggest you. With the prescription and check-ups and medicine. It is the same as the traditional method because you have the doctor in front of you. You can talk to him while you are alive. It is like a virtual clinic. Not even this you have many more advantages that you do not have to travel and go to the clinic to reach out to the dentist . Instead, you can just sit at your home and can be a problem to the dentist and get a proper solution to it.

Advantages of synchronous dentistry

- There is an immediate reply from both parties. As it is a FaceTime communication, it is also a one-to-one communication where all the information is shared by the patient and is immediately replied to by the dentist.

Disadvantages of synchronous dentistry:

- It is more time-consuming because there is a one-to-one interaction between the patient and the dentist, and it ends up taking a lot of time.
- The visual meeting between the doctor and the patient is hard to schedule.
- Sometimes the quality of the video and the photographs shared by the patient, or the dentist is not so good because of network issues (32).

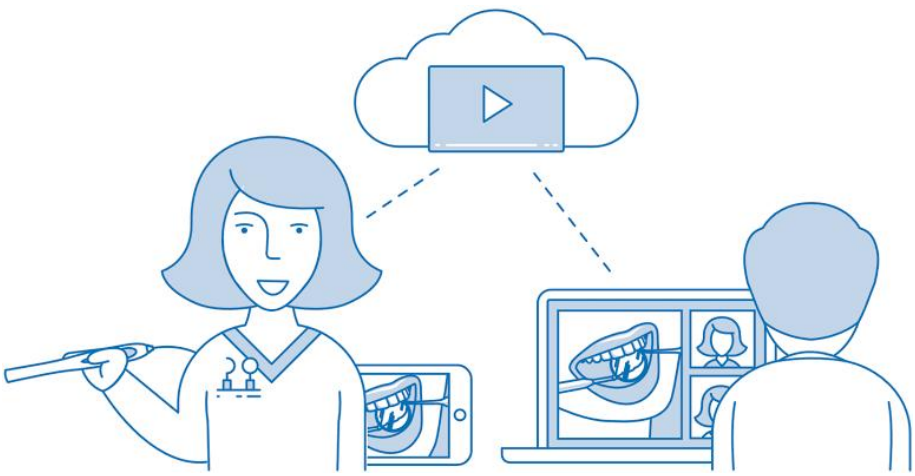

Figure 2: Synchronous Teledentistry (32)

3.2.2 Asynchronous dentistry

It is a D9996. It is different. There is no real-time in life or Continuous interaction with anyone who is in the physical location of the patient. It involves sharing of information, prescription, radiographs, photographs, videos, digital impressions, and photomicrographs through electronics. The information is shared through social media or any other electronic device to the patient or dentist and further checkups go on. It is a secured electronic communication system. It is collecting the patient information and clinical history and saving it in the cloud. A patient can share his information and problems electronically although he cannot talk to the dentist as a one-to-one interaction. This is not FaceTime. All your information is saved safely, and people prefer synchronous dentistry more than asynchronous. This is more effective in time and nowadays time is the most important part of dental clinics. The dentists do not have so much time. Through asynchronous dentistry, the information and the history of the patients can be arranged in a timely manner. The saves a lot of time as all the history of the patient and information, the problem of the patient is delivered to the dentist in seconds. Saved information Is secured but is easily available. It makes the referral network easier. A referral network can include a general dentist, oral and maxillofacial surgeon, periodontist, endodontist, orthodontist, and the dental pathologist. But it can also include physicians, cardiologists, orthopedists, and any other healthcare specialists. We can bring the back-to-back history of a patient. The last visit of the patient and all the necessary information is available. This information can be easily shared and be available. The patient data securely saved in the cloud using HIPAA Complaint.
For example, if a patient visits a dentist while sharing his data, he will forget to tell the knee injury he suffered with. But through all to save Tata now the dentist can easily identify and recognize all the previous history (33).

All the dentists and hygienists are trying to help the people and the community of rural areas they are collaborating with the dentist. Through this method, the hygienist can see a patient via technology. He can record the information and the data provided by the

patient and he can save all the images and videos. And then it can be sent to the collaborating dentist for review and treatment planning.

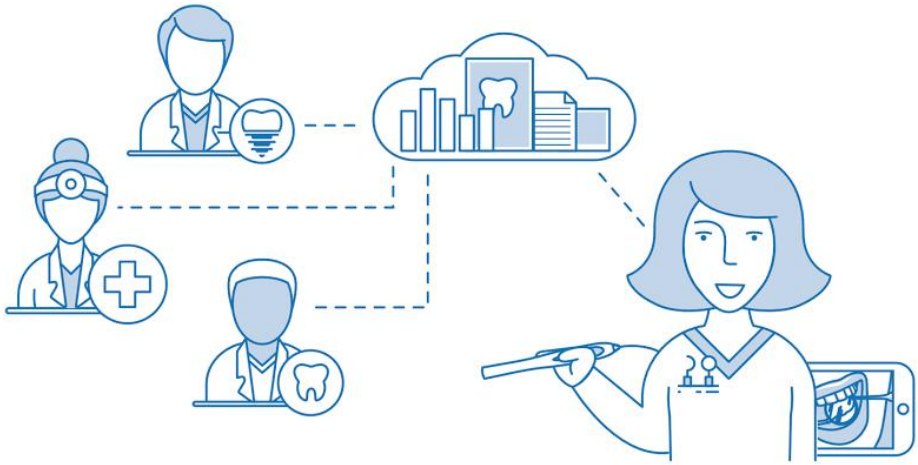

Figure 3: Asynchronous Teledentistry (32)

Asynchronous dentistry is a style of communication that does not need the patient and the dentist at the same time. In this dentistry, the patient does not directly talk to the dentist. Think of texting a person on Facebook or WhatsApp, sharing images, videos, and much more.

Similarly, this dentistry is also the same. It involves texting the dentist, sharing photos, videos, or images. This is mostly used in the offices and a lot of dentists also prefer this because it not only saves time but is also very beneficial.

Benefits of asynchronous dentistry.

- Saves a lot of time
- It gives the ability to think, engage, review, and then respond.
- The quality of images and videos shared through this dentistry is of very good quality
- There is no additional app or software which the patient needs for sharing his /her information and data.
- Can be easily shared.

Disadvantage

- The only disadvantage of this type of dentistry is that there is a slow response from both parties. For example, if the patient shares the picture or video and talks about his problems. It is not necessary that the dentist can immediately reply. The dentist replies when he sees the message. So, there is a time issue between both parties. There is slower communication.

3.3 Application of teledentistry in varied departments of dentistry

- Tele oral medicine.
    - Various orofacial disorder in the form of cancer in the oral cavity, TMJ (Temporomandibular Joint) disorders, oromucosal infections, salivary gland disorders, orofacial pain disorders, neurosensory disturbances inside the oral mucous membrane, bruxism, burning mouth sensation, dental sleep disorders, halitosis, and dental phobia. This can also manage the problems which are related to several reasons. which includes less clinical knowledge and didactic training in the college of dentistry, there is a lack of knowledge among the people about the

appropriate medical billing procedures and codes, and there are some unique pros and cons which require more time. The complexity and difficulty which is faced while handling and treating orofacial disorders result in consultation with or referral to a specialist (34). Teledentistry can bring the dentist and specialist in orofacial pain or oral medicine to the rural dentist or dental hygienist through remote teleconsultations.

- Teledentistry in Endodontics:
    - There comprises a large part of dental pathology. It requires treatment of entering tonics which is used and performed by the dentist who is not so specialized. This mainly happens in rural areas. For this dentist model telemedical system gives a solution on how they should seek the problem and obtain help and information related to this. The patient who is at a distance or the specialist endodontics gets to know about the information with the phone about the request of the patient. After knowing about the information and the request of the patient the dentist downloads the image, the videos, and other data. They establish the diagnosis and suggest a treatment to the patient. This treatment is then posted online which is transferred to the patient. Then the patient can check the response of the dentist (35).

3.4 Tools required in Teledentistry

Certain tools have been used to incorporate teledentistry as a practice modality by the dentists. A digital camera is essential to form interaction between the dentist and the patient. A panoramic digital x-ray unit that is portable is also required for consulting the doctor with the image or the video of clinical value (36). After that microphone and speaker is very essential to talk to the doctor. Without the speaker and microphone, you

cannot communicate with the dentist and patient. If the video call is going on a laptop, then a webcam is highly recommended.

These are some of their equipment which is required. Without this title, the industry cannot perform because it is something that involves only technology. For example, without a computer or a laptop, you cannot do your data, information, pictures, video, and much more.

Moreover, without a camera, you cannot do one-to-one interaction. Without a digital x-ray unit, you cannot have a proper dental checkup and prescription. Microphone headsets or speakers are also needed because without all this one cannot communicate. So these are some technical requirements that teledentistry uses. Although in rural areas, there is a lack of technology. But there is some or other way through which they can reach out to the dentist through technology.

A plain old telephone system (POTS)

The plain old telephone system has been used in teledentistry for a very long time. The cost of this method is very low and is very Affordable. The two methods that are involved in a plain old telephone system are real-time and store and forward method (29).

In a real-time method, we can share the information between the patient and dentist without any delay of time whereas in store and forward there is a delay of time because there is a need for storage of data and sharing of data from one place to another that is from the doctor to the patient or vice versa. Thus, the real-time method is faster than the store and forward method.

POT is a slow method and runs at a slow speed it is used with the telephonic company. ISDN (integrated service digital network) is a type of network through which one can transmit information via voice or video (29). This method is more trustable as the information shared between the patient and the dentist is live information. This increases the accessibility of dentistry. It involves broadcasting. Still, the Integrated service Digital network method is a difficult network worldwide. World wide web

network plays a very important role in transferring information from one to another. Integrated service Digital network method is not available and all the settings so there is difficulty in using that method. World wide web network is used in almost all the city‘s thus it is more reliable and accessible. Apart from all these tools, a good instructor is needed who can guide the dentist on how to use the teledentistry. As not all dentists know how to use technology. Instructors are also needed in schools and colleges which provide the study of dentistry (30).

3.5 Legal and Ethical issues

There is always concern about confidentiality which can be shared from one to another. Also, the transfer of medical history and medical records can take place to Teledentistry. There is always a security concern about whether the data of the patient saved in the computer is safe or not. The practitioner should make the best security of the document so that it cannot be shared or transferred from one to another. Although there are sometimes when the information gets transferred even after high security. The patient should be already informed that there is a possibility of their data and information getting transferred from one to another. The patient should also know that there could be a risk in diagnosis. There can also be a failure due to a lack of technology.

In Teledentistry, medicolegal and copyright problems can also occur. Many legal issues such as licensure, jurisdiction, and malpractice have to be thought through to prevent leak of confidential data.

3.6 Advantages of Teledentistry

- **Cost-effective -**
    - **Tele-dentistry is cost-effective.** You can save a lot of money. It is cheaper and also it saves the money of travelling and visiting a clinic. For the dentist, it may be a one-time high investment but after then, it is also very cost-effective for them. The patient can just sit at their home and get the treatment done without travelling. I am spending a lot of money.

- **Less time-consuming.**-as we spend a lot of time while travelling and visiting the doctor. Through technology, we do not have to travel, and we can save time. We can just use our mobile to connect to the dentist, share the data, share the information, share the images, share the videos, and a lot. This can just take a few minutes. In just a couple of minutes, your treatment and checkup go. (6)

- **Better communication involves** sharing documents, pictures, and videos with good quality which also helps in dis. It also leads to better communication with the dentist.it helps in early and quick treatment

- **Early diagnosis-** Teledentistry plays a very important role in early diagnoses. And it can also prevent the treatment. (7)

- **E-prescription-** By using teledentistry the person can get his treatment and prescription from the dentist from his mobile or laptop. He does not have to travel a lot. All the prescriptions are given through technology. Still, the dentist should be aware of the patient's drug allergy and other health issues. If a person does not cure through technology, then he should personally visit the dentist.

- **Storage of data-**The data and information of the patient can be saved on the computer with security. This can save time of the doctor as well as the patient.

The data can easily be transferred from one doctor to the other of cases of referrals.

- **Access for the underserved and untreated population** in a country like India, where people do not get access to dentistry and clinics due to some of the other reasons like rural areas, elderly, etc. Teledentistry is very beneficial to the poor, elderly people, and untreated people (8). In many places in India, mainly in rural areas, the hospital and the clinic are far away from the villages due to which they have to travel a lot and spend a lot of money and still do not get the best treatment. For these people, there is no specialized doctor sometimes. Tele dentistry is very beneficial for such people. They can easily get access to dentistry and the specialized dentist just by sitting at their home with much less cost. It saves time and money (8).

Chapter 4: Discussion

Teledentistry is not a special thing, it is just an upgraded version of traditional dentistry. Teledentistry is beneficial and helps us to reach the dentist without travelling. Also, it is most beneficial in the rural areas where there is a shortage of dentists. In rural areas, many of the patients suffer a lot due to the unavailability of specialists (41). The biggest problem occurs when there is an emergency. Thus, in such areas, Teledentistry plays a major role. It reaches out to the people who cannot visit the dentist. In urban areas also it saves a lot of time. Especially businessmen who do not have time to visit the clinic. The youth also neglect the regular checkup to the dentist. This is a major issue which of the traditional dentistry the pilot project tells us effect and demonstrate the effect of teledentistry in rural areas. Current project tells us that how does Teledentistry take advantage of mobile technology to acquire dental images and it also forward images electronically to an offsite dental practitioner to assess and prepare dental recommendations remotely. Such an approach will help to prioritize high-risk and provide us with a quick treatment pathway and avoid unnecessary travel and waste of

time. Tele dentistry also helps us in connecting with the dentist without any wastage of time. Through technology, you can share all your information and secure them. Also, you can get a quick check-up with less money. Also, the dentist should have a good knowledge of technology. They should pay attention to the words teledentistry which is communication through technology. They should make teledentistry reach a higher rate with the help of the doctors this technology can reach a high success. The dentist is initiated by becoming convertible with the technology. They can also start by making people understand the importance and growing rate of Teledentistry. Implementation of technology can help to achieve all the goals. The one thing which is always of concern is the cost of dentistry equipment. The cost of Teledentistry equipment is high. Another thing which matters is the equipment which is required for telecommunication. It also has been a matter of concern. Study shows that there is not such good evidence for telemedicine as a cost of equipment in healthcare issues. However, the cost of the equipment and the cost of telecommunication is high. It is a one-time investment. Although the dentist does not have to invest after that. The Golden point that matters is telemedicine. For a very long time the studies on cost effecting have been published.

Chapter 5: Conclusion

Teledentistry is growing at a very rapid range. Where every business is using technology to grow their business. Dentistry also has taken a step towards upgrading their traditional dentistry into a modern one. There are many advantages of teledentistry, and people are very satisfied with this. It has a bright future in the coming few years. The use of Tele-dentistry will increase very fast in the coming few years. However, like all revolutions, teledentistry cannot be painless. But it can help you to provide all the medication and dental care by the dentist. (43)

Still, there are some issues which are faced. These issues include medico-legal malpractices, inter-state licensure, jurisdiction, as well as technological, security, and ethical aspects.

Some measures which are taken for the best enhancement of Tele-dentistry are:

- The teledentistry instructors which give education courses should be of good quality and with good computer knowledge .they should have teaching experience along with a license to practice dentistry. (43)
- All the dentists who are involved in Teledentistry must give surety and security to the patient about their data information and should be aware that the data is stored securely. There is a password protection and user access law that can help in keeping the data, images, videos safe.

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