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Teledentistry applications

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Abstract: In order to provide dental consultations and treatment planning, teledentistry combines the fields of telecommunications and dentistry. Clinical data and images are exchanged over long distances. Teledentistry has the potential to enhance oral healthcare delivery, increase accessibility, and reduce costs. Additionally, it might end the differences in oral health care that exist between urban and rural areas. The present evidence that is available in the literature is reviewed in this article, together with the history, justification, scope, foundation, and prerequisites of teledentistry. The future of this cutting-edge and alternative approach to providing dental treatment is also covered in this article, along with the ethical and legal concerns surrounding the practice of teledentistry.

Keywords: Teledentistry; Clinical data; telecommunications.

The practice of providing healthcare over long distances using information-based technology and communications networks is known as "telemedicine [1]. When participants are separated by distance, it uses electronic information and communication technology to provide and assist healthcare [2]. Telemedicine is a link in a longer chain of healthcare. It has the potential to strengthen this chain, raising the standard and effectiveness of medical care [3]. In addition to being utilised domestically to connect healthcare providers in underdeveloped nations with hospitals in rich nations, telemedicine is currently employed globally in university medical centres, community hospitals, managed-care organisations, and rural hospitals. Technological developments in digital communication, telecommunication, and the Internet present a hitherto unseen chance for remote access to healthcare [4].

For the management of dental caries, nanotechnology, which deals with nanostructures at the nanometer scale (0.1–100 nm), offers novel methods. The biggest development in the therapeutic management of the missing enamel surface may come from remineralization. Nanotechnology was used to mimic the biomineralization process that naturally forms and repairs dental enamel. The main inorganic component of hard dental tissues is hydroxyapatite. The use of nano-hydroxyapatite as a preventive and therapeutic measure against tooth caries has significant potential. Dental materials' characteristics at the nanoscale are very different from those at the microscale. Newly developed nanoparticles can be employed to regulate the development of cariogenic biofilms and new tooth restorative materials [6]. Some key applications of teledentistry could be summarized in the following points:

- Remote Screenings and Evaluations

Teledentistry allows dental professionals to conduct screenings, examinations, and assessments of patients remotely using images and video. This expands access to care and allows early detection and evaluations.

- Remote Consultations

Dentists can have virtual consults with colleagues to discuss patient cases, treatment plans, and get second opinions. This facilitates collaboration and knowledge sharing.

- Remote Patient Monitoring

Clinicians can remotely monitor patients to supervise their treatment progress for things like oral appliances and orthodontics. This improves continuity of care.

- Dental and Oral Health Education

Teledentistry facilitates providing education and teaching good oral care habits to patients, students, and underserved communities through virtual channels.

- Reducing Wait Times and Travel Burdens

With remote options, patients have reduced wait times for consultations and evaluations and decreased travel burdens for those in rural areas far from clinics.

In summary, by bridging geographical barriers and enabling remote point-of-care, teledentistry improves access, reduces costs, facilitates collaboration among dental practitioners, and enhances overall oral health outcomes and quality of life for patients. The capabilities continue advancing alongside telehealth tech innovations.

Refernces

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