Journal Of Clinical Practice and Medical Case Report

Genesis-JCPMCR-1(1)-07
Volume 1 | Issue 1
Open Access

Digital Health Implementation Before and During the COVID-19 Pandemic

Abdalmawla Alhussin Ali*
Department of Orthodontics, Faculty of Dentistry, Sirte University, Libya

***Corresponding author:** Abdalmawla Alhussin Ali, Department of Orthodontics, Faculty of Dentistry, Sirte University, Libya.

Citation: Ali AA, Digital Health Implementation Before and During the COVID-19 Pandemic. J Clin Pract Med Case Rep. 1(1):1-5.

Received: March 14, 2024 | **Published:** March 21, 2024.

Abstract

Tele dentistry, a contemporary consultation technique combining telecommunication tools with dental disciplines, enables the transfer of clinical information and images over long distances for dental deliberation, consultation, and treatment. It holds the potential to enhance the understanding of oral healthcare while reducing associated costs. This article aims to emphasize the significance and feasibility of tele dentistry in diagnostic dentistry in Libya, both prior to and during the COVID-19 pandemic lockdown.

The COVID-19 pandemic has presented unprecedented challenges to the healthcare sector, including dentistry, where the risk of transmission necessitates the implementation of strict infection control measures. In this context, tele dentistry has emerged as an effective alternative to conventional in-person consultations, providing a means to deliver dental care remotely and minimize physical contact between patients and healthcare professionals. Before the pandemic, tele dentistry in Libya was in its early stages of adoption. However, with the onset of the COVID-19 crisis and the subsequent restrictions on movement and physical interactions, the implementation of tele dentistry gained momentum.

By utilizing telecommunication technology, dental practitioners were able to remotely assess patients, offer consultations, and provide treatment recommendations. This approach not only ensured continuity of care but also reduced the risk of viral transmission.

The advantages of tele dentistry in Libya during the pandemic were manifold. It enabled dental professionals to triage patients, prioritizing urgent cases while deferring non-emergency procedures. By leveraging digital platforms, clinicians could remotely assess oral health conditions, provide guidance on self-management, and prescribe medications when appropriate. Additionally, tele dentistry facilitated the delivery of oral health education and preventive measures to individuals and communities, promoting awareness and empowering patients to maintain their oral health during the lockdown.

Despite the promising outcomes of tele dentistry implementation during the pandemic, certain challenges were encountered. Limited access to reliable internet connectivity and the availability of necessary equipment posed barriers to its widespread adoption, particularly in remote and underserved areas. Moreover, concerns regarding the security and privacy of patient data necessitate the implementation of robust data protection protocols.

In conclusion, tele dentistry has demonstrated its importance and applicability in diagnostic dentistry in Libya, both before and during the COVID-19 pandemic. By harnessing the power of telecommunication tools, tele dentistry offers a valuable means for remote oral healthcare delivery, reducing costs, and enhancing patient care. However, further investments in infrastructure and data security are necessary to ensure its equitable and sustainable implementation across the country.

Keywords
Tele dentistry; Telemedicine; Digital Health; Healthcare; Dentistry; COVID-19.

Introduction
Tele dentistry or E-dentistry, gained much importance on a global scale over the past 20 years [1]. Cook et al, defined teledentistry as the use of videoconferencing for remote diagnosis and counselling for the first time in 1997 [2]. Currently, it is extending to include the use of digital 3D pictures, video, and electronic patient records for diagnosis and consultation [3]. Teledentistry as a technique is used to enhance communication between dental practitioners, as well as to improve consultation abilities through the transmission of images, radiographs, and clinical data. Pre-COVID-19 pandemic, teledentistry became popular as a way to triage patients and provide long-distance care [4]. Many studies have shown that teledentistry is gradually gaining popularity among both patients and dental professionals [5]. In Libya, teledentistry applications are already commonly utilize in dental urgent, despite of the pandemic condition. Through the agreements between academic hospitals in Libya and developed countries, use of telemedicine technologies by connection, where the consultation for diagnosis and treatment as well as participation in Libyan medical conferences become possible. This overview offers areas of action with

special focus to opportunities and challenges because it is a new field that gained national attention in Libya, particularly during the COVID-19 pandemic. As in any other countries, Libyan patients must frequently visit their dentists for screening of oral health in order to monitor the treatment process for routine monitoring of therapeutic response and illness development. While teledentistry can take, the place of many physically visits with virtual visits as well as saving costs and wait times [6].

During COVID-19 pandemic, in developing countries like Libya, patients have avoided visiting their dentists because they are worried about getting infection. When an infected person sneezes, coughs, or talks, nose secretions, respiratory droplets, and saliva are strongly suspected to be the mechanism of transmission [7]. Dentists have also experienced a great deal of instability, because the Covid-19 is easily distributed throughout the community and is sustainable, which causes community spread [8]. People's dental health has been managed through teledentistry, which has been considered as a key strategy.

The Libyan government particularly health ministry made many actions and established laws and regulations to improve the digitization of healthcare. Several patients chose to have their first communication channel via video consultation on their computer or cell phone. However, specialists might not be easily accessible to the patients who living in rural areas. In April 2020, most of the Libyan dental clinics closed. Primarily due to concerns about patient safety and the lack of sufficient information about the virus (COVID-19). The virus's spread and person-to-person transmission are a concern for the National Centre for Disease Control in Libya (NCDC), which makes the issue complicated. As a special protocol has been developed by the committee in charge of the syndicate on how to follow the guidelines and work in accordance with the standards of correspondence of the union, regarding the operation of dental practices in the private and public sectors sent from the Libyan Dental Association to NCDC on March 2020 [9].

At the beginning of treatment, a particular document must be completed for each patient, before other Actions take place for record and reference. To avoid close contact and prevent virus spread in dental clinics, Libyan regulatory agencies advises the social isolation and home quarantine. NCDC and WHO (World Health Organization) have specified a number of standard practices that dentists must follow which include the use of protected coveralls, surgical gloves, N95 face mask, thermometer, protective face shield, gown, and head and foot coverings. Although every precaution has been taken, it is still very difficult to completely eliminate the formation of droplet and aerosol during dental treatment, which is the most worrying issue in the dental clinic.

The Technical and Infrastructure Challenges of Teledentistry Acceptance in Libya

Infrastructure related to limitations could include insufficient internet service - a lack of hardware - a lack of training, and a lack of technical guidance and knowledge, particularly in Libyan rural areas, which remain unconnected by various mobile service providers. In addition to that the acceptance of dental professionals, and patient confident, which considered as the main categories of challenges. The strategies to overcome these challenges included that the dental workers should receiving proper training and education about this technology to address these issues and acceptance of teledentistry. In addition to that guiding patients, investing appropriately, and advancing technology. Utilization of smartphones to

detect dental caries is strongly encouraged [10,11]. The adaptation of programs and software that are widely accessible to teledentistry services was a significant innovation. Applications like WhatsApp and Zoom can also be used. In an environment with limited resources, clinical examination and remote screening of patients, through WhatsApp photos, can be appropriate, dependable, and economical tools [12, 14]. Libyan dental practitioners have provided an example of how WhatsApp and teledentistry could be utilized to differentiate between oral lesions during the existing COVID-19 pandemic as the dental photography can be used because the majority of oral lesions are frequently readily visible, negating the necessity for a close clinical assessment [15] also reported the use of WhatsApp for patient follow-up and virtual consultation. Additionally, they claimed that ongoing patient monitoring and remote consultation enhance the patient-physician connection and the patient's ability to participate in and adjust to therapy.

The Libyan ministry of higher education take several actions and laws regarding the applications of teledentistry in dental education that enhance the formal education online either by interactive videoconferencing or web-based self-learning with advantage of teaching exchange between an instructor and student, provides for feedback and interaction. Although telemedicine provides potential solutions for dentistry education and training, it is also important to note its drawbacks and important considerations e.g. data security, ethical considerations, safety, licensing, and malpractice [16,17].

Through their aid project, the European Union also tried to improve the healthcare in Libya, where they funded the “SAHA Project” within five universities (i.e. Tripoli, Misurata, Sebha, Sirte, Zawia) and supplied the required equipment, which will help the encouragement of telemedicine applications in Libya [18].

Finally, teledentistry has the potential to improve the standard of dental care. Such services necessitate extensive preparation and careful situation analysis, particularly among developing countries. In hopes of fully understanding the benefits of teledentistry and reduce its risks and challenges, both now and in the future, more studies are necessary.

References

1. Crawford E, and Taylor N. (2020) The effective use of an e-dentistry service during the COVID-19 crisis. J Orthod. 47(4):330-7.
2. Cook J. (2003) ISDN video conferencing in postgraduate dental education and orthodontic diagnosis. Learning technology in medical education conference;1997. The Journal of the American Dental Association. 134(3):342-6.
3. Perelman S.C, Erde S, Torre L, Ansari T. (2021) Rapid deployment of an algorithm to triage dental emergencies during COVID-19 pandemic. J Am Med Inform Assoc. 28(9):1996-2001.
4. Petcu R, Kimble C, Ologeanu-Taddei R, Bourdon I, Giraudeau N. (2017) Assessing patient’s perception of oral teleconsultation. Int J Technol Assess Health Care. 33(2):147-54.
5. Estai M, Kanagasingam Y, Xiao D, Vignarajan J, Bunt S, et al. (2017) End-user acceptance of a cloud-based teledentistry system and Android phone app for remote screening for oral diseases. J Telemed Telecare. 23(1):44-52.
6. Mari˜no R, Ghanim A. (2013) Teledentistry: a systematic review of the literature. J Telemed Telecare. 19(4):179-83.
7. https://www.who.int/emergencies/disease/novel-coronavirus-2019/advice-for-public
8. https://www.cdc.gov/coronavirus/2019-ncov/faq/html.

9. (2020) Libyan Guidelines for Minimizing Risk of COVID-19 Transmission in Dental Clinics.pdf.
10. AlShaya MS, Assery MK, Pani SC. (2020) Reliability of mobile phone teledentistry in dental diagnosis and treatment planning in mixed dentition. J Telemed Telecare. 26(1-2):45-52.
11. Kohara EK, Abdala CG, Novaes TF, Braga MM, Haddad AE, et al. (2018) Is it feasible to use smartphone images to perform telediagnosis of different stages of occlusal caries lesions? PloS One. 13(9):e0202116.
12. Beauquis J, Petit AE, Michaux V, Sague V, Henrard S, et al. (2021) Dental emergencies management in COVID-19 pandemic peak: a cohort study. J Dent Res. 100(4):352-60.
13. Vinayagamoorthy K, Acharya S, Kumar M, Pentapati KC, Acharya S. (2019) Efficacy of a remote screening model for oral potentially malignant disorders using a free messaging application: a diagnostic test for accuracy study. Aust J Rural Health. 27(2):170-6.
14. Estai M, Kanagasingam Y, Huang B, Shikha J, Kruger E, et al. (2017) Comparison of a smartphone-based photographic method with face-toface caries assessment: a mobile teledentistry model. Telemed e-Health. 23(5):435-40.
15. Giudice A, Barone S, Muraca D, Averta F, Diodati F, et al. (2020) Can Teledentistry improve the monitoring of patients during the Covid-19 dissemination? A descriptive pilot study. Int. J. Environ Res Public Health. 17(10):3399.
16. Tantawi ME, Lam WYH, Giraudeau N, Virtanen JI, Matanhire C, et al. (2023) Teledentistry from research to practice: a tale of nineteen countries. Front. Oral. Health. 4:1188557.