Development of OloHealth, a teledentistry program for the enhancement of oral health in Sicilian policemen: Preliminary reports

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AIM

Teledentistry (TD) is the use of health information technology and telecommunications for oral care, consultation, education and public awareness with the aim to improve oral health[1]. TD is based on teleconsultations, that are defined as synchronous or asynchronous consultation using information and communication technology. If teleconsultation is established correctly, good outcomes like timely access to correct medical information, quality improvement of the diagnosis and treatment process, increased physician trust, and significant improvement in the total quality of health care will result. Indeed, TD has the potential to identify high-risk populations, facilitate patients' referrals to a dental consultant and support locally-based treatment, enhancing oral health in the populations[2]. The aim of this study is to describe our preliminary experience by means TD platform, named OloHealth, particularly dedicated to prevention and management of oral potentially malignant disorders (OPMD), and the improvement of oral health in Sicilian police community, in order to reduce unnecessary travel and loss of productivity.

MATERIALS AND METHODS

OloHealth was created in 2018 within the University of Palermo: it is based on a HUB and SPOKE model network. The HUB is our Sector of Oral Medicine (University Hospital Policlinico "P. Giaccone" Palermo, Italy), one of the Sicilian

main center for the prevention and management of OPMD. The hub can be connected to several SPOKES (oncological/geriatric units) in Sicily, each one can log in and to use simply the platform, requiring a synchronous (i.e. live consultation) or asynchronous teleconsultation. From April 2018 the project "Tutela della salute orale dell'Operatore della Polizia di Stato" is running (link: https://www.unipa.it/Tutela-della-salute-orale-dellOperatore-della-Polizia-di-Stato/); indeed, the medical center of the police station Caserma "O. Lungaro" (Palermo) may request teleconsultation for the prevention and management of OPMD. In order to carry out the asynchronous teleconsultation the patient's data and images are uploaded on the OloHealth platform from the SPOKE, all the images are taken by a general practitioner by mean of an intraoral camera (i.e. Gendex GXC-300). Subsequently the request of the teleconsultation, the HUB provide a diagnosis or a temporary diagnosis, medical therapy prescription and, planning a visit at the HUB for demanding case, if necessary.

RESULTS

From April to September 2018, a total of 48 teleconsultations have been requested and performed from the HUB; 25% (12/48) of whom were females. The mean age of the study group was of 50,96 $\pm$ 5,6 years. The 54% (26/48) of them declared to be non-smokers, 25% (12/48) where ex-smokers while 21% (10/48) were smokers. The medical history revealed a previous neoplasm of 10% (5/48) of the enrolled patients, 13% (6/48) were suffering from high blood pressure and another 13% (6/48) of gastritis. A total of 741 intra-oral pictures have been collected by a general practitioner, with a mean of 15,4 $\pm$ 5,4 pictures for patient. One hundred-thirty-seven oro-dental conditions have been noticed by the HUB, fortunately no OPMD have been noticed. The most frequent conditions were the following: 21 coated tongue; 18 gingivitis-periodontitis; 16 traumatic lesions; 16 benign neoformations (e.g. fibroma, papilloma). Dental measures needed to eliminate infective outbreaks were indicated by the HUB and they have been performed by the patient's dentist. Interestingly, the language used by the general practitioner has been found to be changed during the development of the program, indeed, over time she began to use more specific terms for the description of the oral condition.

DISCUSSION

TD could be comparable to face-to-face for oral screening due to the reliability showed by the intra-oral camera. This study is the first step of an extensive project at the University Hospital of Palermo and several hospitals in the Sicilian region. Well-designed research into the assessment of TD, considering its effectiveness, cost-effectiveness and long-term us are needed, however, the use of TD by non-dental practitioner for consultations, referral and disease management has the potential to improve oral health outcomes among the populations. Furthermore, TD seems to promote continuing education activities and improve awareness of OPMD, by general practitioner[3].

Keywords: oral health, telemedicine, OPMD, teledentistry, oral lesions

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