

Utilizing Telemedicine for Managing COVID-19

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Received: March, 2020

Revised: April, 2020

Accepted: April, 2020

Abstract

Telemedicine which is defined as the provision of healthcare services by a physician at a distance, is a method that provides it in many general and specialized field of medicine even in rural areas. COVID-19 is a singular disorder with an incompletely defined medical course, mainly for youngsters and susceptible populations. In 5% of COVID-19, severe diseases which needs intensive care unit has been reported. As it spreads rapidly and regarding its contagious feature even by healthcare facilities, new models of care are needed to decrease the probability of face-to-face contact between patients and caregivers. The integration of eHealth for patients with COVID-19 is indicated as a global emergency to reduce virus transmission.

Keywords: COVID-19; Telemedicine; Nephrology; Management.

Conflict of interest: The author declares no conflict of interest.

Please cite this article as: Badeli H, Tangestani Nejad A, Hassanzadeh Rad A. Utilizing Telemedicine for Managing COVID-19. J Ped Nephrol 2020;8(2):1-3. <https://doi.org/10.22037/jpn.v8i2.30046>

Introduction

The ability of reaching and maintaining the highest available level of health for all people is one of the global health challenges in the 21st century. By the advent of new technologies in different areas of science in recent decades, new terms and principles have been introduced in medical healthcare services such as telemedicine, telehealth, mobile health, and etc. (1).

Telemedicine which is defined as the provision of healthcare services by a physician at a distance, is a method that provides it in many general and specialized field of medicine and even in rural areas. It offers flexible scheduling and is a cost effective method. Based on the recent study in America, telemedicine saves 145 miles and 142 minutes for each visit (2).

It helps clinicians to provide services through telecommunication, information technology, and video imaging. In addition, telehealth is an umbrella term which encompasses telemedicine and various nonphysician services such as telenursing or telepharmacy. Besides, mobile health is a new term which elaborates the use of mobile communication devices including tablets, wireless monitoring tools, and smartphones (3).

Telemedicine can cover a list of urgent care services. By far, Teleradiology as an example of critical acute care is, the most commonly used telemedicine service. It has been reported that Teleneurology is a time consuming method which can save US\$70 for each visit.

Even studies on the use of telemedicine in 921 orthopedic patients reported a total savings of US\$5,538,120 during 5.5 years. Telemedicine in developing countries such as Africa showed that text messages which can be included as a telemedicine device, help clinicians to provide appropriate prenatal and post-partum care. It is noteworthy that based on the inaccessibility to medical services in rural areas, telemedicine programs enhance the patient's satisfaction and quality of care across the urban and rural areas as well (4).

So far Telemedicine even goes further and it has been reported that through its use, it is now possible to discharge febrile and acutely infected patients from the emergency departments and perform further follow-ups. Besides acute illnesses, telemedicine can be successfully used for patients with chronic diseases such as diabetes mellitus, congestive heart failure, and chronic pulmonary diseases. Although for a thorough care of patients with chronic illnesses at home, video images, audio, and vital signs data are needed to be transmitted from a remote site to a central location. Previous investigations on the effect of using video technology showed high quality and patients' satisfaction (5).

In both developed and developing countries, there are barriers to adopt telemedicine. Access to the high-speed Internet in developing countries may be an important issue for using telemedicine devices. By the 25%

increase in the number of Medicare telemedicine visits, yet <1% of rural inhabitants receive this type of care (6).

The advantages of Telemedicine at home versus hospitalization.

Several advantages can be noted through telemedicine at home versus hospitalization. At home, patients have active posture and can participate in their medical care, and it results in a sense of empowerment and satisfaction over their disease. It can be cost saving and motivate efficient use of hospital beds as well (7).

Telemedicine and acute care

Telemedicine can be implemented on patients with acute infections. Comparing patients with cellulitis, CAP, and urinary tract infection treated by telemedicine at home with a hospitalized patients showed definite clinical improvement as well as shorter duration of hospitalization (8).

COVID-19

COVID-19 is a singular disorder with an incompletely defined medical course, mainly for youngsters and susceptible populations. As so far no specific treatment has been used for patients and the effect of corticosteroids is unclear, observational studies and various clinical trials on patients over the world are needed to demonstrate the characteristics of COVID-19 in different regions and different population. Therefore, designing master protocols or adaptive platform can maximize the knowledge regarding this novel phenomenon (9).

Telemedicine in covid-19

In 5% of COVID-19, severe diseases which needs intensive care unit has been reported. As it spreads rapidly and regarding its contagious feature even by healthcare facilities, new models of care are needed to decrease the probability of face-to-face contact between patients and caregivers. The integration of eHealth for patients with COVID-19 is indicated as a global emergency to reduce virus transmission (10).

Video consultations is a method that has been introduced as a national digital health strategy in many countries. Although, previous investigations on the effect of this method on outpatients with chronic stable diseases showed its cost effectiveness, high satisfaction among patients and caregivers, and no significant difference in service use or disease progression, it is not an appropriate method for all clinical situations. As it is commonly appropriate for self-isolating clinicians, it seems that exposure to COVID-19 as an acute and serious disease needed further assessments. Anxious patients with mild symptoms of COVID-19 or more severe symptoms can use video consultation to use its mentioned advantages. In these cases, with need for general advice a website or recorded phone message can also be used especially in

older or immunosuppressed patients. But it is not appropriate for patients with severe diseases (11).

Telemedicine in nephrology

Recent investigations on COVID-19 reported that this disease can be related to specific organ dysfunctions including acute kidney injuries and induce high rate of morbidity and mortality. Telemedicine in kidney disease screening and management is documented increasingly. It can extend the kidney care and integrate it into daily life beyond traditional episodic care in ambulatory settings (12).

Telemedicine for patients with decreased access to specialty care, particularly rural underserved populations can provide direct consultation to people with CKD and deliver care to these patients. In the USA, a Health Information Technology Working Group introduced an electronic health records program for patients with chronic kidney disease to identify and manage patients and they succeeded to publish a validated electronic phenotype for CKD identification on more than 2 million patients.

As Nephrology consultation needs commonly laboratory assessments, video consultation can help patients to receive disease education and explanation of treatment choices (13).

Conflict of Interest

The authors declare no conflicts of interest.

Financial Support

Not declared.

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