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Commentary

Telehealth is Proven and is Here to Stay

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DESCRIPTION

Empirical Telehealth is not new. As Information technology has evolved, it has been increasingly utilized to augment the treatment of patients. As described by Thomas Nesbit, the use of the telephone to reduce unnecessary doctor visits was described in Lancet in 1879, a doctor using the radio to diagnose a patient was described on the cover of Science and Invention in 1925 and the National Aeronautics and Space Administration started performing remote physiological monitoring during the Mercury space program in 1960 [1]. As technology progressed, telehealth attempted to overcome barriers to adoption by becoming anthropomorphic and mobile. The early 2000's saw the deployment of telehealth robots, referred to as "robotic telepresence." These devices were often utilized in the ICU setting, allowing a provider to conduct rounds and examine patients [2-6]. However, the use of these robots was considered cumbersome and the utilization rates varied enough to affect their widespread use [7]. This was the author's experience as a young neuroendovascular surgeon attempting to use robotic telepresence in the surgical intensive care unit.

The rise of the internet and micro-processing reversed the trend towards cumbersome technology and sharply reduced the barriers to telehealth adoption. The ability to capture synchronous audiovisual data and transmit it at higher and higher speeds shifted from specially rigged laptops to smart phones. Not surprisingly, at the same time, the adoption of telemedicine increased. Probably the earliest significant adoption of these new technologies was seen in the stroke field, where patients in non-stroke certified facilities could be rapidly triaged to facilities performing intravenous thrombolysis or thrombectomies [8-18]. Telehealth also saw increasing usage in other fields. Prior to the SARS-CoV-2 pandemic related rise in telehealth, virtual health visits had been successfully utilized in managing asthma, cancer patients, diabetes, psychiatric conditions bariatric care and Orthopedic problems, among other areas of medicine. Despite that, some investigators saw mixed results and barriers to implementation when studying telehealth usage in a variety of clinical settings [19-29]. It was fortuitous that high speed wireless internet and smart phones had become ubiquitous by March 11, 2020, when the World Health Organization declared a world-wide public health emergency in response to the SARS-CoV-2 virus outbreak [30-59].

All at once, nearly every field of medicine shifted to virtual care. This sudden shift to telehealth soon resulted in an increase in the already growing number of telehealth related publications. A PubMed search of research studies utilizing the term "telehealth" in the 3 years preceding the pandemic yielded 187 results. A similar search for studies published after March 11, 2020, yielded 248 results. Among the areas of medicine that have seen telehealth studies published since the pandemic declaration are critical care, chronic heart failure, blood pressure management, diabetes management, perinatal care, psychiatry, urogynocology, rheumatic disease, ophthalmology, and spinal disorders, the author's current practice focus [60-71].

The author's group recently published their experience in using telehealth to manage patients with neck and back pain during the first six months of the SARS-CoV-2 pandemic.101 consecutive patients were studied. The authors were able to utilize synchronous audio-visual telehealth for initial consultations in 98% of subjects and for follow up consultations in 69% of subjects. All spinal injection procedures and spinal surgeries were completed as planned during a telehealth visit. Categorical and group outcomes were similar to published results from the pre-pandemic medical literature [72].

CONCLUSION

While telehealth has evolved, there has been consistency in the evidence based medical literature. These studies, whether pre- or post-pandemic, mostly march to the beat of the same drummer; telehealth is easily deployable, has high patient satisfaction and is as effective as traditional care in the management of a myriad of conditions. As a result, not only is telehealth proven, but the pandemic has provided broad exposure to it, and it is here to stay.

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