

## **ABSTRACT**

The COVID-19 has been a major concern the global health and described as a pandemic, which has created a massive disruption in various sectors. To adapt with the current alteration, telehealth has been brought in the health sector. With the rapid development of telehealth, this research aims to form a better understanding of telehealth-based services that are used to support COVID-19 patients, by analyze the tools, roles of telehealth, and its challenges to achieve more effective system.

This study is a systematic review with a comprehensive search done for the English written articles that published between January 2020 – September 2022, using PubMed and Science Direct electronic databases. Only the articles that report the used of telehealth services in COVID-19 are included. The selected articles assessed with STROBE and COREQ checklists. Narrative forms were used to report the finding. Of 688 studies were identified, fifteen studies met the eligibility criteria and were reviewed by analyzed the telehealth tools and programs to identify the roles and barriers.

Involvement and collaboration from patient, healthcare providers, public authorities in health section, and other profession contribution are mentioned in the use of telehealth services. Telephone, video, mixed reality, and medical robot, emails, mobile application, written, and website were used for communication. Telehealth tools of function type dominates with screening, monitoring and follow-up, follows by prevention and triage, and lasty are diagnose and treatment. Telehealth programs that encompass the role of telehealth are teleeducation, telemedicine, and teleassistant. Roles and effect of telehealth found are mostly to reduces the risk of being exposed to other infectious patients and provide rapid and safe healthcare services. Barriers and challenges that were indetified are availability of the technologies, knowledge and ability of the technology, absence of physical examination, and network information security protection.

**Keywords: Telehealth, E-health, Teleeducation OR Telemedicine OR  
Telemonitoring, Coronavirus, COVID-19, SARS-CoV-2, pandemic**