Designing and implementing a teleophthalmology application for effective communication between physicians and patients and other physicians in a hospital or clinic

Abstract

Background: In the contemporary era marked by rapid technological advancement, all sectors and professions, including the field of medicine, are profoundly impacted. Telemedicine, or remote medicine, is an emblematic outcome of this technological progress, with noteworthy implications, especially in the domain of ophthalmology. This tool is instrumental in elevating the caliber and expediting the diagnostic and therapeutic facets of medical systems

Aim: The overarching aspiration underpinning this initiative is the establishment of a telemedicine framework, serving as a countermeasure to several of the extant challenges permeating the healthcare sector.

Materials and Methods: The design of the application employed a comprehensive set of technologies, including Android Studio, socket, Jitsi Meet, MongoDB, Figma, and Photoshop. Meanwhile, website development drew upon Node.js, PHP, HTML, and CSS. The formulation of management guidelines was meticulously orchestrated, drawing upon both a synthesis of existing scholarly literature and the insights of acknowledged experts in the field.

Results: The fruition of this endeavor manifested in the Doctor Chat application, replete with functionalities encompassing textual communication, multimedia sharing, video conferencing, Snellen chart-based assessments, and reminders for in-person appointments. In tandem, a management-oriented website was engineered, offering distinct user roles tailored to patients, general practitioners, and ophthalmologists. The management protocols devised for ophthalmological patient care were intricately stratified based on disease risk and treatment intricacy, with implementation materializing within the clinic of a prominent ophthalmology professor in December 2021.

Conclution: Given the discernible strides witnessed globally in the realms of telemedicine and teleophthalmology, coupled with the substantial ameliorations they engender within the medical landscape, their imperative adoption cannot be overstated. Teleophthalmology stands poised to confer

substantial benefits, such as the augmentation of ocular care in remote and underserved locales, the enhancement of service delivery speed and quality, the mitigation of temporal inefficiencies for both patients and clinicians, and the mitigation of congestion within physical clinics while curtailing the transmission of contagious maladies.