ABSTRACT

Regular blood pressure monitoring is essential for maintaining optimal health and preventing serious complications. However, current digital sphygmomanometers lack the capability to provide immediate blood pressure category results, requiring users to search for this information separately or consult with healthcare professionals. Furthermore, manual medical record-keeping practices lead to data separation and loss.

To address these challenges, this thesis presents the development of an IoT-integrated digital sphygmomanometer. The device offers convenient and accurate blood pressure monitoring while providing real-time blood pressure category results. Additionally, an ergonomic design enhances portability, enabling users to monitor their blood pressure anytime, anywhere. To ensure efficient data management, a software application facilitates secure data transmission and storage in a centralized database.

Through rigorous testing and evaluation, the IoT-integrated digital sphygmomanometer demonstrates accuracy on par with desktop sphygmomanometers. The solution empowers individuals to proactively manage their blood pressure and enables healthcare providers to access accurate patient information for improved healthcare delivery.

This research addresses the deficiencies of current digital sphygmomanometers, combining accuracy, convenience, and efficient data management. The IoT integration enhances blood pressure monitoring and data collection, leading to improved healthcare outcomes and streamlined workflows for healthcare providers.

Keywords : IoT, digital sphygmomanometer, blood pressure monitoring, blood pressure category, data management