

ABSTRACT

In checking blood sugar levels, patients often feel uncomfortable because of invasive blood sampling. This study, purpose to monitor cholesterol levels with a non-invasive method so that patients do not need to feel pain and discomfort due to sampling of blood. This research used the MAX30102 sensor that will detect blood sugar through the patient's finger, the data will be processed in ESP8266 as monitoring will connect to the OLED LCD as a viewer and IoT as data storage with Wi-Fi connected. In this study, the greatest accuracy value was 99.03% with the largest error value of 10.52% and the smallest accuracy value was 89.48% with the smallest error value of 0.97%. From all measurement results, the average accuracy value is 93.974% and the average error is 6.026%. It concluded that the non-invasive method for monitoring blood sugar levels by utilizing the MAX30102 sensor with this accuracy value shows that this non-invasive method is reliable for monitoring blood sugar levels. This research brings great benefits to patients by reducing the discomfort and pain usually associated with blood sampling. Patients no longer have to undergo invasive procedures to check their blood sugar level. In future study, furthermore that researchers can use other accurate sensor also collect more data to get a better average value.

Keywords: *Blood Sugar, Non-invasive, and IoT*