

ABSTRACT

Acute Myocardial Infarction or heart attack is the most common cause of sudden death, so a monitoring tool is needed with system that can warn doctors to take action quickly. The purpose of this study was to design heart attack detection device through vital sign indicators. The contribution of this study is incorporation monitoring the parameter heart rate, oxygen saturation, respiration rate, and body temperature for detection heart attacks. To detect a heart attack properly, it necessary to monitor vital signs accurately and in real time. The design of this tool uses AD8232 module which is placed in lead II of the patient to detect the patient's electrocardiograph signal, and uses finger sensor to detect the patient's oxygen saturation signal. Data processing is carried out by ESP32 then the results data processing will be sent to PC via HC-12. The results showed that the heart rate error value using the largest phantom was 0.67%, oxygen saturation error value with largest simulator was 0.40%, heart attack detection went well, the maximum data transmission capability could be sent at a distance of 25 meters with a correlation of 0.92. The largest respondent's heart rate error value is 0.87%, and the largest respondent's oxygen saturation error value is 0.41%. The results of these tests indicate that this module can monitor the value of parameter accurately and can detect a heart attack properly. This research can be implemented in patients who have been diagnosed with heart attack so that it can facilitate monitoring.

Keywords: Monitoring, Heart Attack, BPM, SPO2, Wireless, HC12