

ABSTRACT

The maternal mortality rate (MMR) in Indonesia is a serious challenge, especially in areas with limited access to healthcare services and digital infrastructure. This situation demands adaptive solutions to regularly monitor the condition of pregnant women without having to rely on medical facilities. This research aims to develop a remote monitoring system based on a mobile application called PregMon, which can classify the level of health risk for pregnant women based on manual or system-connected vital sign data input.

This system is designed using an Android application that receives physiological data input in the form of heart rate, blood oxygen levels (SpO₂), fetal activity, and glucose levels. The application provides an easy-to-use manual input interface and stores all user data locally and in the Firebase cloud service. To determine the level of health risk, a Decision Tree algorithm trained on the dataset is used. The dataset is divided into 70% training data and 30% test data. Classification is divided into three categories: Low Risk, Alert, and High Risk, based on the clinical threshold of each parameter.

Test results show that the Decision Tree model has good classification accuracy and is able to accurately identify user conditions. The PregMon application successfully combines all user data input in the form of daily history and provides automatic health status indicators. This system contributes to an efficient, lightweight, and usable digital solution to support pregnancy monitoring in areas with limited access to healthcare.

Keywords: *Maternal Mortality Rate, Mobile Application, Android, Decision Tree, Firebase, Risk Classification, Pregnancy Monitoring*