

ABSTRACT

Diabetes mellitus is a chronic disease that requires continuous management. In Indonesia, about 70% of diabetes patients do not regularly monitor their blood sugar levels and 30% are non-compliant with medication. This research aims to develop a mobile-based health monitoring application "DiabetesKu" to help diabetes patients manage their health conditions independently. The application was developed using Android Studio with Kotlin programming language, MVVM architecture, and Firebase as the backend. Key features include blood glucose recording, medication reminders, diet and nutrition information, diabetes education, doctor consultation, and health data sharing. Testing was conducted in three stages: code quality testing, functionality testing using black box testing method with Espresso, and usability testing with 10 diabetes patient respondents. The test results show that the application functions well with only 2 errors out of 2,619 identified issues, all features run according to specifications, and received very positive responses from users with 96.6% expressing satisfaction to very satisfaction. Specifically, effectiveness achieved an average of 96%, usefulness 100%, and satisfaction 94%. The most appreciated features were ease of navigation, data sharing security, and ease of use. DiabetesKu application proved effective as an independent health monitoring solution for diabetes patients and has the potential to reduce complication risks through better diabetes management.

Keywords: diabetes, mobile application, health monitoring, android