

Development of a Calorie Tracking Application Based on an Algorithm to Estimate Energy and Nutritional Needs for Pregnant Women

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Abstract:

During pregnancy period, it is very important for a woman to maintain an adequate energy and nutrient intake to ensure healthy maternal weight gain and optimal fetal growth. However, many pregnant women struggle to monitor their dietary needs consistently, which may result in some complications affecting both the woman's body and fetus development. This study aims to develop a calorie and nutrition tracking application that calculates personalized energy requirements and recommended weight gain targets based on validated clinical guidelines. Using a dataset from Kaggle consisting of pre-pregnancy weight and pre-pregnancy height information, all data are implemented into the algorithm used in the application resulting in personalized calorie needs for each data. An estimated weight gain is later calculated, then compared to recommended weight gain provided by Institute of Medicine (IOM). Results show that all calculated estimated weight gains fall within the clinically recommended ranges, indicating that the algorithm performed accurately in providing safe and reliable dietary guidance. This system is expected to assist pregnant women in monitoring their nutritional status and supporting healthier pregnancy outcomes.

Keywords:

Pregnancy, calorie tracking, weight gain, mobile application.