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Final Report

For

PregCare

Efficient Antenatal Care Support System.

By

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Abstract

Pregnancy complications increase the risk of maternal and infant death, and are associated with adverse outcomes such as miscarriage, stillbirth, and preterm birth. Therefore it is important to assess the risk level of pregnancy to control the pregnancy complications. Already there are some solutions proposed by researchers to reduce complications such as mobile based antenatal care support system, remote based pregnancy support system and automated risk assessment tool for pregnancy care. But these systems are not widely used because of the used input parameters for risk assessment do not synchronized with real world conditions. Therefore in this work, the risk assessment parameters were decided according to a survey done with domain experts and world health standards. Artificial Neural Network (ANN) and Naïve Bayes (NB) algorithms were used to predict the risk level separately and a novel hybrid algorithm was proposed to improve the accuracy level of the prediction. Data were collected from 117 pregnant mothers, who were in different lifestyles and health conditions. From that ANN and NB could achieve average accuracies 78% and 69% respectively. Novel hybrid approach could improve above accuracies up to 86%. According to this research doctors can easily identify the patient risk factors without spend much time and they can able to provide better care. Also in this research proper diet plan will be suggests according to the risk factors. The proposed model in this paper is feasible, effective and it has a better performance compared to other models.

Keywords

Artificial Neural Network (ANN), Naïve Bayes (NB), Novel hybrid algorithm, Pregnancy risk assessment, Diet plan.

Subject Descriptors

H.2.8 Data Mining, F.1.1 Models computation, D.4.8 Modeling and Prediction, 1.6.1 Model Classification