Analysis of Risk Factors for Type 2 Diabetes Mellitus Based on Inpatient
Medical Records Using the Naïve Bayes Algorithm Method
at Bhayangkara Hospital Bondowoso in 2024

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ABSTRACT

Type 2 diabetes mellitus is a non-communicable disease with a high prevalence that can cause serious complications if not treated properly. Identifying risk factors is an important step in preventing and controlling this disease. This study aims to analyze the risk factors for type 2 diabetes mellitus in inpatients at Bhayangkara Bondowoso Hospital in 2024 using the Naïve Bayes algorithm method. This is a quantitative study that was then processed using the Naïve Bayes method and RapidMiner tools. Sampling was conducted using the total sampling technique, involving 315 inpatient medical records, and the variables analyzed included age, gender, BMI, hypertension, smoking history, cardiovascular history, and family history. The results showed that the risk factors that most influenced the incidence of type 2 diabetes mellitus were age $\geq$ 45 years, BMI classified as obese, and a history of hypertension. The confusion matrix results with a ratio of 95:5 produced an accuracy value of 90.62%, precision of 100%, and recall of 81.25%. It is recommended that hospitals strengthen health promotion initiatives addressing the risk factors and prevention of Type 2 Diabetes Mellitus, with particular emphasis on high-risk populations, and incorporate family involvement in educational interventions to reduce complications

Keyword: *Diabetes Mellitus Type 2, Naïve Bayes, RapidMiner, Confusion Matrix*