Analisis Faktor-Faktor dalam Pendeteksian Dini Penyakit Parkinson Berdasarkan Gangguan Aktivitas Keseharian dan Gangguan Perilaku Tidur Rapid Eye Movement = Analysis of Factors Associated with Early Stage Parkinson`s Disease Patients Based on Daily Activities Disorder and Rapid Eye Movement Sleep Behaviour Disorder

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Abstrak

Penyakit Parkinson atau yang biasa disebut PD merupakan gangguan pada sistem koordinasi gerakan manusia yang ditandai dengan gejala motorik dan non-motorik. Pada stadium lanjut PD, diagnosis klinis cukup jelas dalam pendeteksian. Namun, pada tahap awal, ketika gejala masih belum terlihat dengan jelas, diagnosis menjadi sulit dan terkadang pasien tetap tidak terdiagnosis atau bahkan salah diagnosis. Penelitian ini berfokus pada identifikasi faktor-faktor yang dapat menjadi gejala awal PD berdasarkan gangguan aktivitas keseharian dan gangguan perilaku tidur Rapid Eye Movement. Penelitian ini juga membahas klasifikasi penderita PD stadium awal menggunakan model klasifikasi statistika Classification tree beserta penanganan masalah missing value yang terjadi pada data PD. Faktor penting berdasarkan model Classification Tree adalah tremor, dress difficulty, speech difficulty, skor gangguan perilaku tidur REM, dan usia. Diperoleh model classification tree dengan melakukan proses penanganan missing value menggunakan metode K-Nearest Neighbour. Model tersebut memberikan nilai akurasi sebesar 86.5%, sensitivitas sebesar 80%, spesifisitas sebesar 91.57% dan AUC sebesar 0.858.

<hr />Parkinson’s Disease or commonly known as PD is a disorder in human movement coordinator system that are characterized by motoric and non-motoric symptoms. At the late stage of PD, clinical diagnosis is relatively easy to detect because the symptoms are clear-cut. However, when the symptoms are often incomplete or subtle, in the initial stage, diagnosis becomes difficult and sometimes subject still remain undiagnosed or even misdiagnosed. This research focuses on identifying factors in early stage PD based on patient daily activities and rapid eye movement sleeping behaviour disorder (RBD). Data analysis was conducted using classification tree method, to classify early stage PD patients or healthy control patients. Missing values were handled with k-Nearest Neighbour (kNN) method. The results were satisfactory, with the classification accuracy of 86.5%, sensitivity 80%, specificity 91.57% and AUC 0.858. It is also found that tremor, dressing difficulty, speech difficulty, RBD questionnaire score, and age are important in differentiating early stage PD from the healthy control.