

PEER-REVIEW REPORT

Name of journal: World Journal of Psychiatry

Manuscript NO: 58396

Title: Best early-onset Parkinson dementia predictor using ensemble learning among Parkinson's symptoms, rapid eye movement sleep disorder, and neuropsychological profile

Reviewer's code: 02989927

Position: Editorial Board

Academic degree: MD, MSc, PhD

Professional title: Associate Research Scientist, Doctor, Research Associate, Senior Scientist

Reviewer's Country/Territory: Brazil

Author's Country/Territory: South Korea

Manuscript submission date: 2020-07-21

Reviewer chosen by: Ya-Juan Ma

Reviewer accepted review: 2020-09-05 21:16

Reviewer performed review: 2020-09-05 21:41

Review time: 1 Hour

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input checked="" type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

**Peer-reviewer
statements**

Peer-Review: [☐] Anonymous [☒] Onymous
Conflicts-of-Interest: [☐] Yes [☒] No

SPECIFIC COMMENTS TO AUTHORS

MD ID 58396 Early-Onset Parkinson Dementia, Ensemble Learning Method, Neuropsychological test, Risk factor, Discriminant Analysis, and Naive Bayesian model, by Byeon, 2020. This is a secondary analysis of patients with Parkinson's Disease (n = 342) by exploring the prediction accuracy of sociodemographic factors, Parkinson's motor symptoms, Parkinson's non-motor symptoms, and REM sleep disorder for diagnosing early-onset PD by using a Parkinson's Disease registry data. The approach is innovative for a chronic neuropsychiatric disease. The applicability of this random forest based machine learning study holds a promise of forecasting the full presentation of Parkinson Disease (PD) and could be used in different non-communicable diseases to implement early treatment. In general, the manuscript is clearly written, well organized in meaningful sections. However, there are several substantive and formal issues in the manuscript that author should address. Please find below few comments and suggestions of improvement. Major issues: "Large scale" sample - Do you have performed a sample size calculation? In my opinion, "large scale" for 342 patients is overstated. Is this a nationwide registry data of Korea? There are 3 references from the same author in the bibliography reference. You should contrast in what aspect the present study differ from previous articles. Minor issues: The text needs a careful English review, there are several typos, misspellings and grammar agreement. Several portions look awkward and hard to follow.