

PEER-REVIEW REPORT

Name of journal: *World Journal of Psychiatry*

Manuscript NO: 76431

Title: Can the prediction model using regression with optimal scale improve the power to predict the Parkinson's dementia?

Provenance and peer review: Unsolicited manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05472033

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: Poland

Author's Country/Territory: South Korea

Manuscript submission date: 2022-03-16

Reviewer chosen by: AI Technique

Reviewer accepted review: 2022-03-16 15:16

Reviewer performed review: 2022-03-20 13:02

Review time: 3 Days and 21 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" 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 Grade E: Do not publish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 type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**Peer-reviewer
statements**

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

SPECIFIC COMMENTS TO AUTHORS

Introduction seems to be well prepared and extensive. Editor might like to decide to shorten it, depending on the overall approach of the Journal to prepare manuscripts. In contrary, Most of the materials and section description is rather brief. In my humble opinion, tools that have been used are rather well known in the world of psychiatry, so there is no need for extensive description. The only problem that I have noticed in this section is in "Regression with Optimal Scale" subsection. You have wrote „Although a general linear regression model can be used if all of the variables used in the analysis are numeric, this is not the case for ordinal or nominal variables because they do not meet the assumptions for regression and error terms" I do not understand what do You mean here by „if all of the variables". Do You mean „All of the dependent variables"? In my humble opinion, one can add ordinal variable as a independent factor In the linear regression model, am I right? While using ordinal logistic regression, ordinal variable could serve as a dependent variable. Then You wrote „Therefore, analysis can be" could You be more specific here? What kind of analysis? What is the purpose of the analysis here? I suppose that optimal scaling applied in Your study might be a suitable method in overall, however the implementation of this particular model should be better justified in the first sentences of this paragraph. I suppose that ordinal independent variables could be analysed using linear regression methods, but maybe some practical difficulties might occur in implementation of such models? Results: "The results of chi-squared tests" information about particular methods of analysis should be described In the last section of materials and methods. In the results section, only results from those methods should be described, not methods itself. "ADL were not significantly different between PDD



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and PD-MCI" How it was analyzed? Could You describe it In the materials and methods section? Could You calculate the effect size for this between group comparison? "P for trend" please rephrase "Figure 1 A" description – could Ypu explain what does „test 4“, „test5" etc. Stands for? Discussion: "K-MMSE and H&Y staging could independently differentiate PDD from PD-MCI even after adjusting for all of the Parkinson's motor symptom and neuropsychological test results." In my humble opinion it is not perfectly clear that such results could be drawn from the above study. What about the possibility that (as You stated in the further part of discussion) that patients with former PD-MCI converted into PDD as disorder progressed, and therefore there is the relationship with H and Y? One thing that I would add to the discussion: from Your results MMSE showed higher utility in diagnosis than MoCA test, what is rather in contrary to the wave from literature from the last years, what showed higher utility of MocA in MCI diagnosis. Could you add a sentence or two on this result to the discussion? Could You refer to the longitudinal studies on older people with MMSE, MoCA, TMT B (or other widely used cognitive test)?

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Position: Peer Reviewer

Academic degree: PhD

Professional title: Associate Professor

Reviewer's Country/Territory: India

Author's Country/Territory: South Korea

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Reviewer chosen by: Dong-Mei Wang

Reviewer accepted review: 2022-05-18 03:51

Reviewer performed review: 2022-05-18 03:59

Review time: 1 Hour

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
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Peer-reviewer statements	Peer-Review: [<input checked="" type="radio"/>] Anonymous [<input type="radio"/>] Onymous Conflicts-of-Interest: [<input type="radio"/>] Yes [<input checked="" type="radio"/>] No
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SPECIFIC COMMENTS TO AUTHORS

1. Equation are not in mathematical notation, I suggest the authors should be experienced enough in writing out the equations 2. If a parameter is given in italic in equations, then it should be italic in text if you mean the same parameter.