

Personality profile associated with Parkinson's Disease: a meta-analysis

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Introduction

Personality changes have long been considered pre-motor aspects of Parkinson's disease (PD). Cross-sectional studies have investigated personality traits in PD patients comparing them with healthy controls (HCs) or with patients affected by other neurological diseases. Some studies found that PD patients were more introverted, apprehensive, tense, driven, restless and cautious than HCs and other medical conditions, whereas other studies failed to identify these behavioral traits in PD. The divergences might be due to differences in methodological procedures: some studies employed self-ratings or caregiver-ratings which assessed retrospective and/or current personality and some studies employed tools assessing personality traits defined according different personality models. Taking into account the abovementioned limitations, the main aim of the present meta-analytic study was to identify whether PD is associated with a distinctive personality trait profile according to Cloninger's model. Moreover, we explored the possible influence of demographic or clinical aspects on the relationship between PD and personality profile.

Materials and Methods

We included studies in the meta-analysis if they: 1) were published in peer-reviewed journals in English; 2) were published from 1960 to 2017; 3) provided results about comparison on personality traits between medicated patients with Parkinson's disease (PD) and healthy subjects (HC); 4) reported statistical results about comparisons on personality traits measures between PD and HC. The outcomes were the dimensions of the temperament and character of the Psychobiological Model. The effect sizes from data reported in the primary studies were computed using Hedges'g unbiased approach; negative values indicated that PD patients had lower scores than HCs on each personality trait. Heterogeneity among the studies was assessed using Q and I² statistics index. A significant Q value indicated lack of homogeneity among studies; the proportion of observed variance reflecting real differences in effect sizes was estimated by I². We conducted sensitivity analyses to check the stability of study findings. To further explain heterogeneity across study findings, meta-regressions were conducted on the following moderators: age at evaluation, gender, years of schooling, severity of motor symptoms, Levodopa Equivalent Daily Dose (LEDD) and tools assessing personality traits.

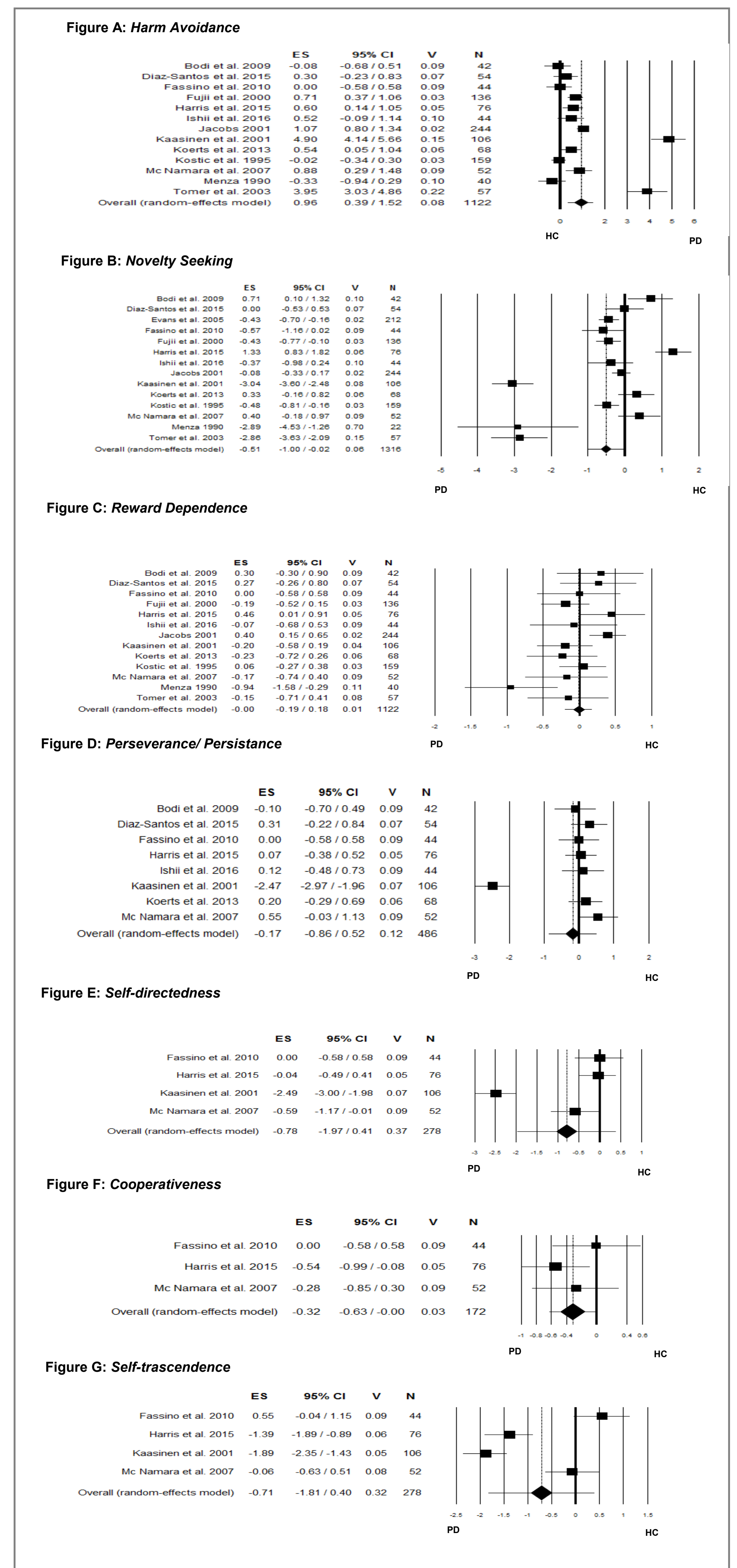
Results

As for the four dimensions of the temperament, PD patients scored higher on Harm Avoidance (Effect size: 0.96) (Figure A) and lower on Novelty Seeking (Effect size: -0.51) (Figure B) than HCs. Meta-regressions did not show any significant effect of demographic and clinical aspects, and type of tools on the two dimensions. No significant difference between the two groups was found on Reward Dependence (Figure C) and Perseverance/Persistence (Figure D).

As for the three dimensions of the character, no significant difference was found between PD and HCs.

Conclusions

The findings confirmed a specific personality profile of PD patients, characterized by higher levels of Harm Avoidance and lower levels of Novelty Seeking as compared with HCs. Moreover, our results indicated that Reward Dependence and Persistence are not specific traits of PD patients.



References

- C.R. Cloninger, D.M. Svrakic, T.R. Przybeck. A psychobiological model of temperament and character. Arch. Gen. Psychiatry, 50 (1993), pp. 975-990
- M. Poletti, U. Bonuccelli. Personality traits in patients with Parkinson's disease: assessment and clinical implications. J Neurol (2012) 259:1029-1038
- G. Santangelo, F. Piscopo, P. Barone, C. Vitale. Personality in Parkinson's disease: Clinical, behavioural and cognitive correlates. J Neurol Sci (2017); 374:17-25.