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# 520 - RASCH ANALYSIS OF THE QUESTIONNAIRE ON CONCERNS ABOUT FALLING AND FREEZING OF GAIT IN PARKINSON'S DISEASE

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## Resumen

Background/Objectives: Disorders of posture, gait, and balance are very common and extremely disabling symptoms in Parkinson's disease (PD) patients. Accurate quantification of gait and balance problems is essential to monitor disease progression and to identify individuals at risk of falling. This study aimed at evaluating the psychometric properties of the questionnaire on concerns about falling and freezing of gait in PD patients using Rasch analysis.

Methods: Data came from a multicentre study that recruited PD patients from movement disorders clinics in Australia, Canada, Netherlands, United Kingdom and United States. The Movement Disorders Society-Posture, Balance and Gait Difficulties Patient Reported Outcome (MDS-PIGD-PRO) scale was applied. This tool contains 11 items answered in 5-point type Likert response scale (0-4). A Rasch analysis of the scale was conducted and the following properties were evaluated: overall fit, reliability (person separation index > 0.7), individual item fit, ordered thresholds, unidimensionality, local independence and differential item functioning (DIF) by sex, age, and disease duration.

Results: The total sample comprised 300 patients, 35% were women, aged 69.3 years with a mean disease duration of 10.0 years. The item 7 ("How often have you limited your activities due to freezing of gait?") presented a high residual (-2.549). After rescoring all items (0-1-1-1-2) and deleting item 7, a good overall fit to the model was observed with adequate reliability (PSI = 0.813). Unidimensionality of the scale (binomial 95%CI: 0.016-0.073) and local independence was confirmed. The item 4D (Walking on uneven terrain) showed DIF by sex. No DIF by age and disease duration was found. The scale showed a potential floor effect (13%) and limited items targeting lower impairment levels.

Conclusions/Recommendations: The MDS-PIGD-PRO has good psychometric properties according to the Rasch model and may be considered a valid and reliable measure of concerns about falling and freezing of gait in PD. A simplified response scale with three categories is recommended. The use of this scale in clinical assessment and research will help to detect impairment so that interventions can be implemented to reduce the risk of falls in PD patients.