

Abstract

Understanding unexpectedly stable trajectories of functional mobility in people with Parkinson's disease: A mixed methods study

Anne-Marie Hanff^{1,2,3,4*}(RN, MSN) (ORCID: 0000-0002-8955-8697), Armin Rauschenberger^{5,6}(PhD) (ORCID: 0000-0001-6498-4801), Gloria A. Aguayo⁷(MD) (ORCID: 0000-0002-5625-1664), Anja K. Leist^{8,†} (PhD) (ORCID: 0000-0002-5074-5209), Christopher McCrum^{4,†}(PhD) (ORCID: 0000-0002-4927-1114), Rejko Krüger^{1,2,9†} (MD) (ORCID: 0000-0003-4258-6241), Maurice P. Zeegers^{10,†} (PhD) (ORCID: 0000-0002-2387-083X) on behalf of the NCER-PD

1 Transversal Translational Medicine, Luxembourg Institute of Health, Strassen, Luxembourg,

2 Translational Neurosciences, Luxembourg Centre for Systems Biomedicine, University of Luxembourg, Esch-sur-Alzette, Luxembourg,

3 Department of Epidemiology, CAPHRI Care and Public Health Research Institute, Maastricht University Medical Centre+, Maastricht, The Netherlands,

4 Department of Nutrition and Movement Sciences, NUTRIM School of Nutrition and Translational Research in Metabolism, Maastricht University Medical Centre+, Maastricht, The Netherlands,

5 Biomedical Data Science, Luxembourg Centre for Systems Biomedicine, University of Luxembourg, Esch-sur-Alzette, Luxembourg,

6 Bioinformatics & AI, Department of Medical Informatics, Luxembourg Institute of Health, Strassen, Luxembourg,

7 Department of Precision Health, Luxembourg Institute of Health, Strassen, Luxembourg,

8 Department of Social Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg,

9 Parkinson Research Clinic, Centre Hospitalier de Luxembourg, Luxembourg, Luxembourg,

10 Department of Epidemiology, School of Nutrition and Translational Research in Metabolism, Maastricht University, Maastricht, the Netherlands.

BACKGROUND As Parkinson's disease (PD) progresses, mobility declines. Reserves (biological, physiological, cognitive, emotional, economic or relational) may help us to understand unexpectedly stable trajectories of patient-reported functional mobility. **OBJECTIVES** To investigate reserves moderating the trajectories of patient-reported functional mobility and to understand their daily experience by people with PD. To describe the characteristics of individuals with unexpectedly stable trajectories of functional mobility. **METHODS** Explanatory sequential mixed methods study combining longitudinal mixed models and qualitative interviews: 1) Reserves moderating the associations between years since diagnosis and patient-reported functional mobility, 2) Qualitative interviews with individuals with unexpectedly stable trajectories helping to understand the quantitative findings. **RESULTS** Functional mobility declined slower in men with 10 to 16 years of education but not in women. According to the deductive analyses of the semi-structured interviews, the transport service, i.e., a driver's license or the availability of someone with a car living in the same

household is a central facilitating factor of functional mobility. According to the inductive content analysis psychosocial factors, e.g., self-efficacy, characterised individuals with unexpectedly stable trajectories of functional mobility despite disability (years since diagnosis) and a challenging context (living without a partner or children in rural areas). CONCLUSIONS Our study highlights the importance of a driving license for functional mobility and supports local amenities within walking distance to enable active and healthy ageing in place. Psychosocial factors characterised individuals with unexpectedly stable trajectories of functional mobility despite a challenging context.