

Informants highlighted that navigating the healthcare system and ensuring optimal treatment when dealing with several chronic conditions requires considerable time, energy, and resources, which may be sparse when dealing with multimorbidity. They emphasized that MS-specific symptoms such as fatigue and cognitive disabilities further limit their resources. Therefore, they are reliant on personal resources such as education and specialized knowledge, as well as help and support from relatives to navigate the healthcare system and receive optimal treatment and care.

Conclusion: PwMS and multimorbidity experience significant personal costs related to their treatment and care. Personal involvement and active participation are essential but difficult for this patient group, especially for those who lack personal resources and support from relatives.

Submission ID: 103; Submission Group: Technology Supported Rehabilitation; Submitter: Natalia Paredes-Acuna

Advancing Assessment Technologies for Movement Disorders in pwMS

Natalia Paredes-Acuna¹, Daniel Utpadel-Fischler¹, Nitish V. Thakor², Peter Feys³, Gordon Cheng¹

¹Technical University of Munich, Germany, ²John Hopkins University, USA, ³Hasselt University, Belgium

Background: This work delves into the advancements of assistive technologies that address movement disorders in individuals with multiple sclerosis (pwMS). Leveraging recent technological progress, we critically examine the current state of assessment technologies for movement disorders prevalent in neurological conditions and their applicability to MS.

Methods: A comprehensive survey involving over 200 publications is conducted to explore various strategies for quantifying symptoms related to movement disorders in pwMS. The study encompasses designing and developing a sensory substitution device tailored explicitly for individuals lacking somatosensation in their feet. A case study is presented involving a pwMS actively engaged in the development process, utilizing robotic skin soles to measure force distribution during balancing and walking. Also, preliminary data on camera-based movement quantification of five pwMS using a simplified setup with video cameras is discussed, along with the exploration of automatic assessment possibilities for physicians.

Results: The sensory substitution device, incorporating robotic skin soles and vibrotactile stimulation, achieves a 93.1% accuracy in distinguishing feedback patterns related to various gait cycle phases and balancing conditions. The preliminary data on camera-based movement quantification offers insights into alternative assessment methods for pwMS, where physicians could potentially use it as a remote assessment technique.

Conclusions: By presenting these diverse approaches, the study aims to propel advancements in quantifying movement disorders in pwMS. The findings offer valuable insights for physiotherapists and occupational therapists caring for individuals with MS, emphasizing the potential of advancing technologies in enhancing assessment and intervention strategies for movement disorders.

Submission ID: 104; Submission Group: Other; Submitter: Hannelore Vanthuyne

The meaning of work and non-work for persons with multiple sclerosis

Hannelore Vanthuyne^{*1}, Evi Vijverman², Daphne Kos^{1,2}, Nele De Cuyper¹

¹KU Leuven, ²National MS Center Melsbroek, ^{*}Presenting author

Introduction: In response to labor market shortages persons with chronic illness are now being recognized as having the potential to increase employment rates. This focus on labor participation differs from previous policies, which primarily emphasized financial compensation and social protection. However, little is known about the experiences of persons with chronic illness for example regarding work-life balance which has been shown to be crucial for life satisfaction and sustainable employment.

Method: Qualitative research was conducted through semi-structured interviews with 12 persons diagnosed with MS. The interviews aimed to reveal what makes working and not working attractive and/or unattractive, and how they can, should or do not want to give work a place in their life in the presence of their chronic illness (illness-work-life balance).

Results: A common pattern of different phases emerged: 1) working without impairment prior to illness onset, 2) continuing to work despite increasing MS symptoms, 3) being unable to work due to MS-related impairments, and 4) working with MS through adjustments to accommodate their illness. Models of disability (the cultural, medical, biopsychosocial, social and affirmation model) provide a theoretical framework to understand this evolution.

While work held significant importance before their illness, its relative importance appears to decline in favor of non-work activities prioritizing health preservation alongside the management of chronic illness. Additionally, persons with MS seek to minimize stress from conflicting roles between work and non-work domains and strive for role enrichment where possible. Finally, an influence of both disease identity and the internalized social norm of the importance of paid work appears.

Conclusion: In our MS sample, being at work was found to be meaningful because it contributes to quality of life in presence of illness-work-life balance. When work is not possible or desirable, the values of work can be found in other activities.

Submission ID: 106; Submission Group: Other; Submitter: Deborah Caudenberg

Empowering and supporting people with multiple sclerosis in sustainable employment: a multidisciplinary approach

Debora Caudenberg^{*1}, Niels Peeters^{1,2}, Evi Vijverman¹, Erika Peeters^{1,3}, Meta Milo¹, An van Nunen¹, Daphne Kos^{1,2}

¹National MS Center Melsbroek, Belgium;

²Department rehabilitation sciences KU Leuven, Belgium;

³Rehabilitation Hospital Inkendaal, Vlezenbeek, Belgium,

^{*}presenter