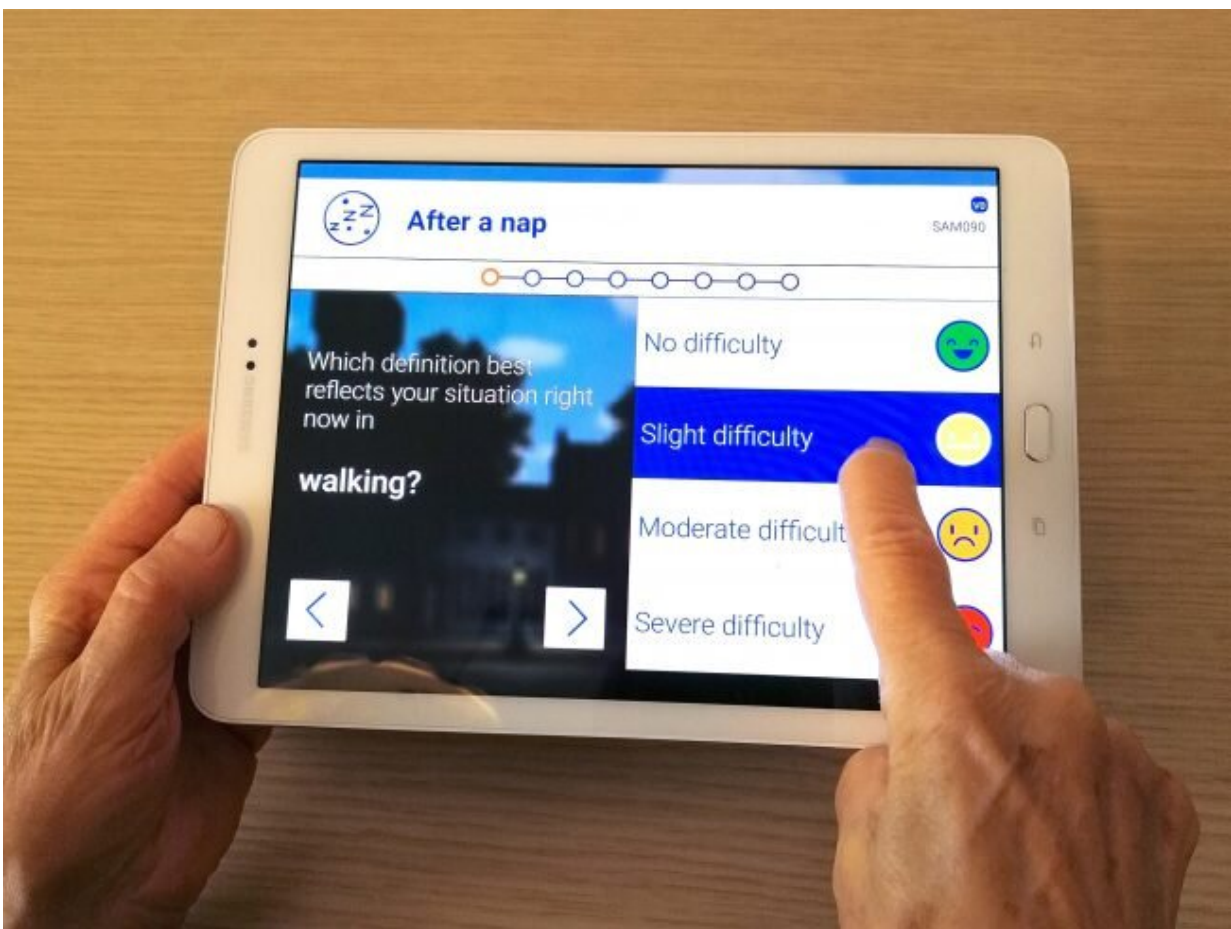


Researchers develop a new home-based app to better monitor Parkinson's disease motor symptoms

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An example of the use of the app by a patient at home. Credit: IOS Press

In order to optimally treat motor symptoms in patients with Parkinson's disease (PD), it is necessary to have a good understanding of their severity and daily fluctuations. A report in the *Journal of Parkinson's Disease* describes how a new app, SleepFit, could be a useful tool in routine clinical practice to monitor motor symptoms and facilitate specific symptom-oriented follow-up. The researchers also determined that information obtained prospectively in real time from the user-friendly app can differ from data gathered retrospectively from patient interviews.

In routine practice, [clinical examination](#) and subjective reporting from the patient are the primary sources of objective data regarding motor symptoms. Realizing that recall may be inaccurate, especially in patients with PD who may experience subtle, "benign" cognitive dysfunction, researchers have developed the SleepFit app that enables patients to report their symptoms regularly several times a day from home or in their daily living.

"The importance of accurately assessing motor symptoms is pivotal in the clinical follow-up of patients with PD. In fact, physicians' therapeutic decisions rely on the subjective information provided by a patient just as much as on the physical examination. This is particularly important considering that antiparkinsonian medications need to be prescribed at their minimal effective doses to optimize mobility, while minimizing undesirable side effects," explained Pietro Luca Ratti, MD, Ph.D., researcher at the Neurocenter of Southern Switzerland, Regional Hospital of Lugano, Switzerland, and now at the Clinical Neurophysiology Unit, Department of Neurology, Pierre Zobda-Quitman University Hospital, Fort-de-France, Martinique.

During classic office consultations, patients with PD are asked to recall the nature and severity of their symptoms since their last consultation and provide a rough average estimate of symptoms during an extended

period of time. This can introduce the possibility of collecting inaccurate or [incomplete information](#).

For that reason, the researchers developed the SleepFit app for tablets, which incorporates a new Visual Analogue Scale assessing global mobility (m-VAS) and the Scales for Outcome in Parkinson Assessment Diary Card (m-SCOPA-DC). In the [clinical study](#) in which SleepFit was first employed, patients were asked to use the app to record their symptoms four times a day for two weeks at specific times of the day. Each time, patients were asked to estimate their perceived momentary motor capability regarding involuntary movements, hand dexterity, walking, and changing position.

Forty-two patients completed the study. The researchers then compared the prospectively collected data from the app to retrospectively collected information from the patient interview, which included a well-accepted measure of mobility in PD, the Movement Disorders Society Unified Parkinson's Disease Rating Scale (MDS-UPDRS) parts II and IV.

They reported that for many patients there was good agreement between the mobility assessments gathered with the app and the MDS-UPDRS. However, there was a subgroup of PD patients who seemed not to report their motor symptoms accurately at the office consultation. For almost 43 percent of patients, a discrepancy was noted between the m-SCOPA-DC and the MDS-UPDRS total score. Further analysis indicated that patients with higher disagreement were those who tended to have more advanced disease, higher fatigue, or worse sleep quality. Some patients (12 percent) over-estimated their motor symptoms and 5 percent underestimated their symptoms.

"We believe that a prospective approach would enable better clinical evaluation of patients' subjective symptoms and, thus, better clinical management of the patients themselves," said Dr. Ratti. "Although

SleepFit is still under development, we believe it will eventually become a powerful tool to support patient evaluation in real-life conditions, encompassing [motor](#) and non-[motor symptoms](#) of PD."

PD is a slowly progressive disorder that affects movement, muscle control and balance. It is the second most common age-related neurodegenerative disorder affecting about 3 percent of the population by the age of 65 and up to 5 percent of individuals over 85 years of age.

More information: Pietro-Luca Ratti et al. A New Prospective, Home-Based Monitoring of Motor Symptoms in Parkinson's Disease, *Journal of Parkinson's Disease* (2019). [DOI: 10.3233/JPD-191662](https://doi.org/10.3233/JPD-191662)

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