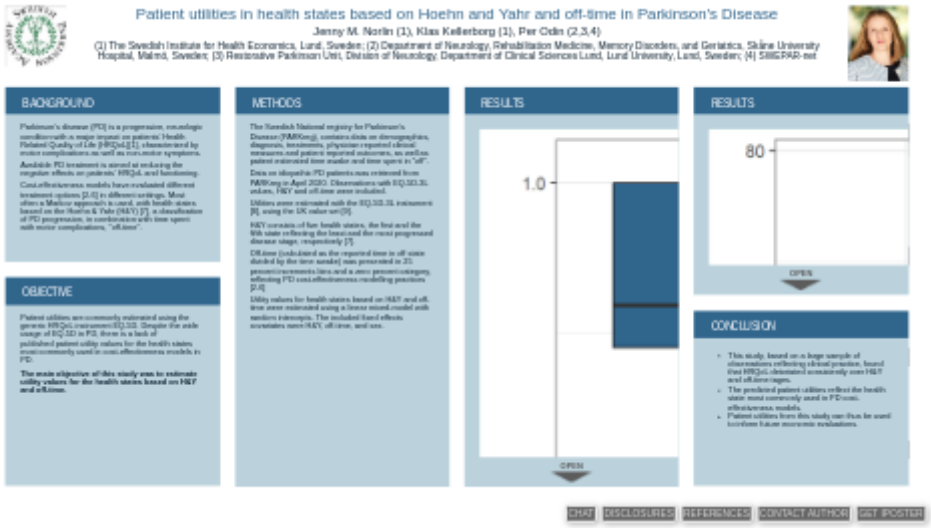
Patient utilities in health states based on Hoehn and Yahr and off-time in Parkinson's Disease



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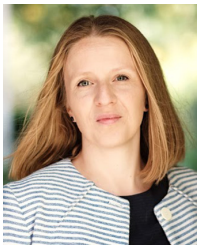

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BACKGROUND

Parkinson’s disease (PD) is a progressive, neurologic condition with a major impact on patients’ Health Related Quality of Life (HRQoL)[1], characterized by motor complications as well as non-motor symptoms.

Available PD treatment is aimed at reducing the negative effects on patients’ HRQoL and functioning.

Cost-effectiveness models have evaluated different treatment options [2-6] in different settings. Most often a Markov approach is used, with health states based on the Hoehn & Yahr (H&Y) [7], a classification of PD progression, in combination with time spent with motor complications, "off-time".

OBJECTIVE

Patient utilities are commonly estimated using the generic HRQoL instrument EQ-5D. Despite the wide usage of EQ-5D in PD, there is a lack of published patient utility values for the health states most commonly used in cost-effectiveness models in PD.

The main objective of this study was to estimate utility values for the health states based on H&Y and off-time.

METHODS

The Swedish National registry for Parkinson’s Disease (PARKreg), contains data on demographics, diagnosis, treatments, physician reported clinical measures and patient reported outcomes, as well as patient estimated time awake and time spent in "off".

Data on idiopathic PD patients was retrieved from PARKreg in April 2020. Observations with EQ-5D-3L values, H&Y and off-time were included.

Utilities were estimated with the EQ-5D-3L instrument [8], using the UK value set [9].

H&Y consists of five health states, the first and the fifth state reflecting the least and the most progressed disease stage, respectively [7].

Off-time (calculated as the reported time in off state divided by the time awake) was presented in 25 percent increments bins and a zero percent category, reflecting PD cost-effectiveness modelling practices [2-6]

Utility values for health states based on H&Y and off-time were estimated using a linear mixed-model with random intercepts. The included fixed effects covariates were H&Y, off-time, and sex.

RESULTS

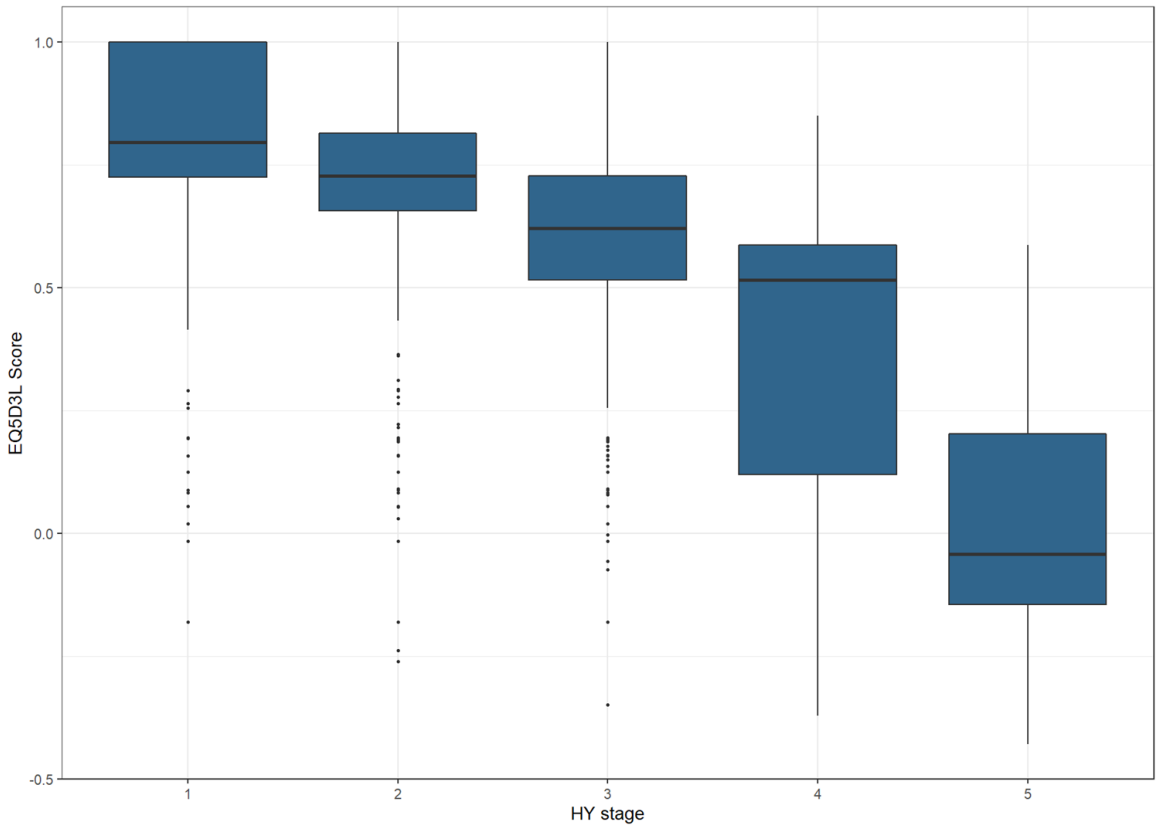

Figure 1. EQ-5D-3L over H&Y stage

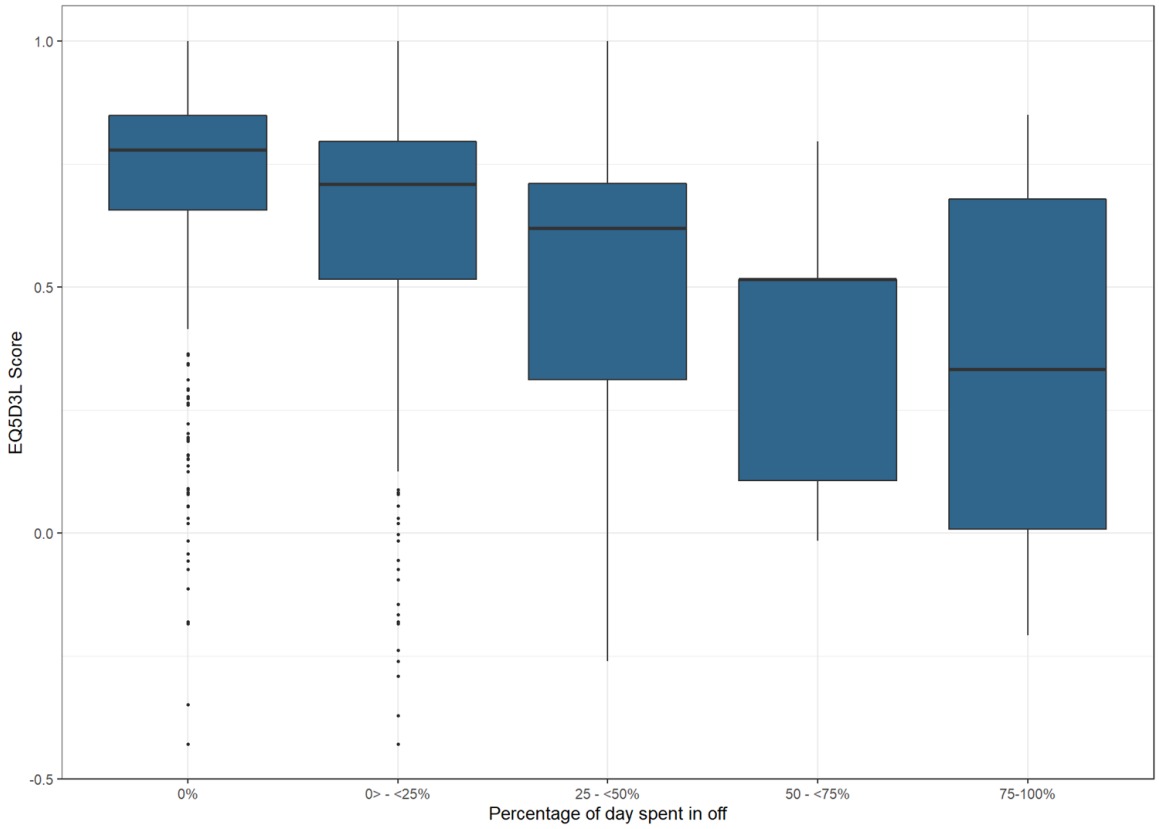

Figure 2. EQ-5D-3L over off-time

1823 observations were included in the sample. Predicted utilities for health states based on H&Y and off-time ranged from 0.733 to -0.106 for the best and the worst health state, respectively.

RESULTS

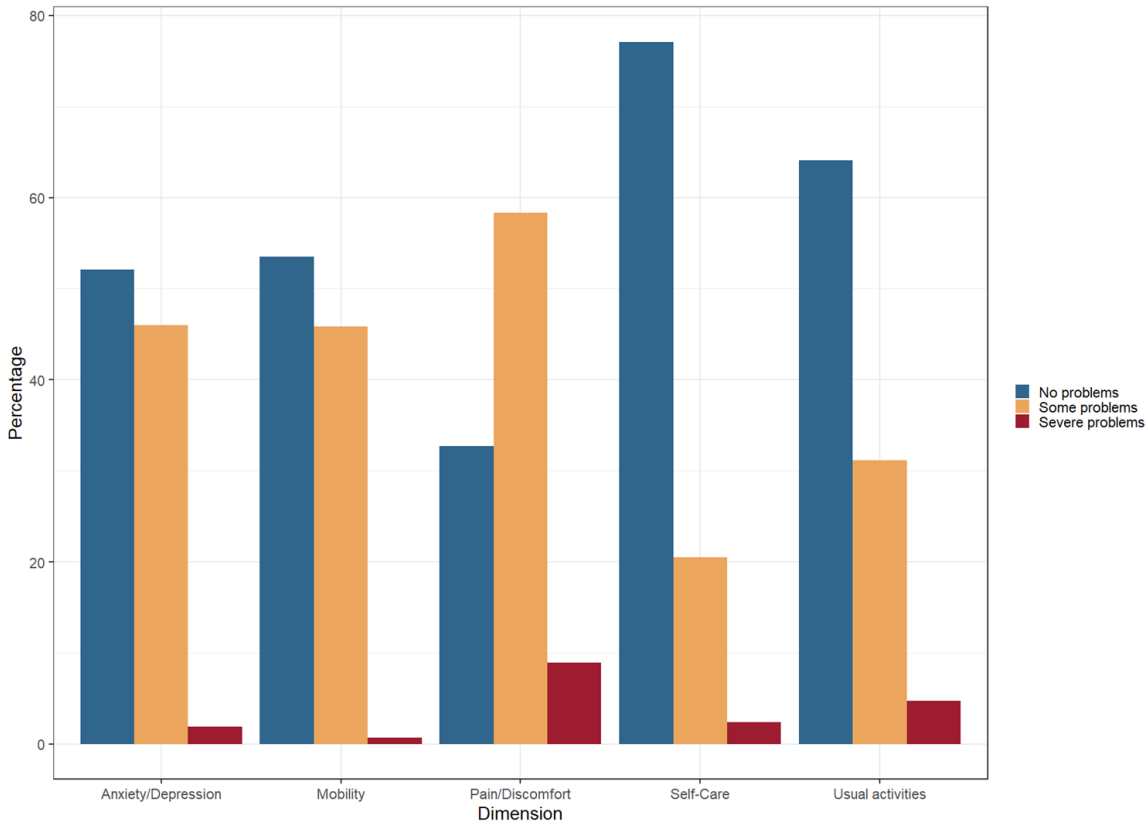

Figure 3. Percentage of observations by experienced problems

CONCLUSION

- This study, based on a large sample of observations reflecting clinical practice, found that HRQoL detoriated consistently over H&Y and off-time tages.
- The predicted patient utilities reflect the health state most commonly used in PD cost-effectiveness models.
- Patient utilities from this study can thus be used to inform future economic evaluations.

DISCLOSURES

Funding

The research has received financial support from AbbVie, Medtronic and Nordic Infucare (Air Liquide Healthcare). The sponsors had no access to data. The authors had full independence regarding data management, study design, interpretation, and analysis.

Conflict of interest

PO has received honoraria for lectures and expert advice from AbbVie, Bial, Britannia, Global Kinetics, Lobsor, Nordic Infucare, PD Neurotechnology and Zambon.

KK and JMN are employees at the Swedish Institute for Health Economics (IHE), which provides consulting services for a broad range of health care stakeholders, including national authorities, healthcare providers, branch organizations, and manufacturers.

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