

Longitudinal patterns of depressive symptoms in patients with Parkinson's Disease

Melissa Morales MD¹, Ann Gruber-Baldini PhD², Sunita Shakya PhD², Rainer von Coelln MD¹, Lisa Shulman MD¹

¹University of Maryland School of Medicine, ²Department of Epidemiology and Public Health



Background

- Depressive disorders affect up to 50% of patients with Parkinson disease (PD) and are associated with increased disability and reduced quality of life.
- Longitudinal studies of depression are limited. The course of depression over years of disease progression is unknown.

Study aim

- To assess the longitudinal patterns of depressive symptoms in patients with PD.

Methods

- Longitudinal study of 615 PD patients at the University of Maryland HOME study from December 2014 to November 2022.
- Depressive symptoms were measured using the Patient-Reported Outcome Measurement Information System (PROMIS®).
 - T-scored normed to the U.S. population (Mean=0, Standard Deviation=10)
- Patients divided into 3 groups on PROMIS-29® Depressive symptoms:
 - T-score <55: No Depression
 - T-score 55-60: Mild Depression
 - T-score >60: moderate to severe depression
- PD patients with depression scales were followed over 2 (n=615) and 4 (n=280) years.
- Descriptive statistics, including means and categories over time, were examined.

Results

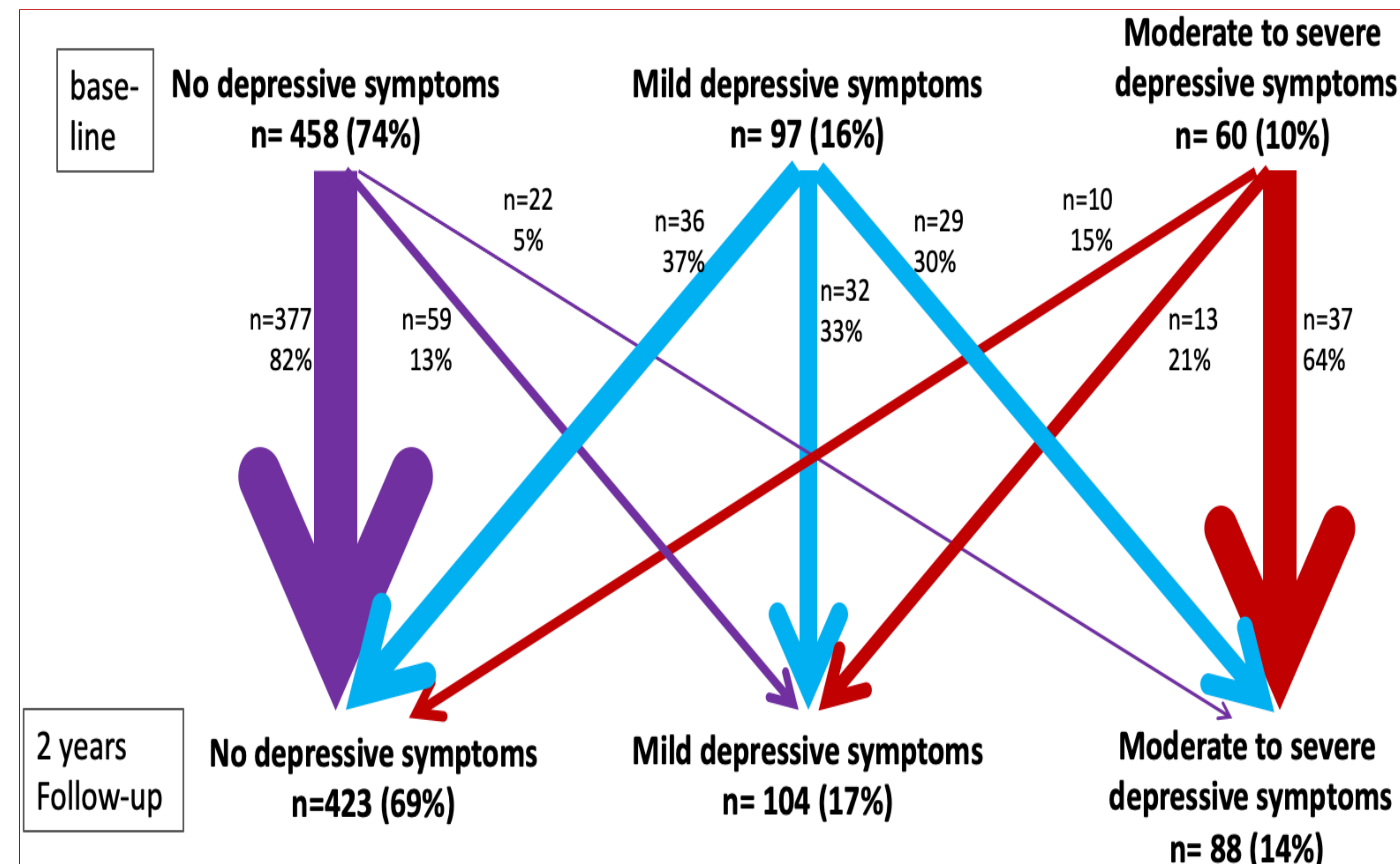
Table 1.
Sociodemographic features
(Baseline 2nd year, n=615)

Variable	Mean (SD) or %
Age, years	66.7 (8.9)
>12 years of education	82%
Male	64%
White	93%
Time from diagnosis, years	8.6 (6.5)
MOCA total	25.0 (5.0)
UPDRS part III (Motor)	24.0 (12.7)
Hoehn & Yahr Scale	2.4 (0.8)
Levodopa use	96%
Antidepressant use	25%

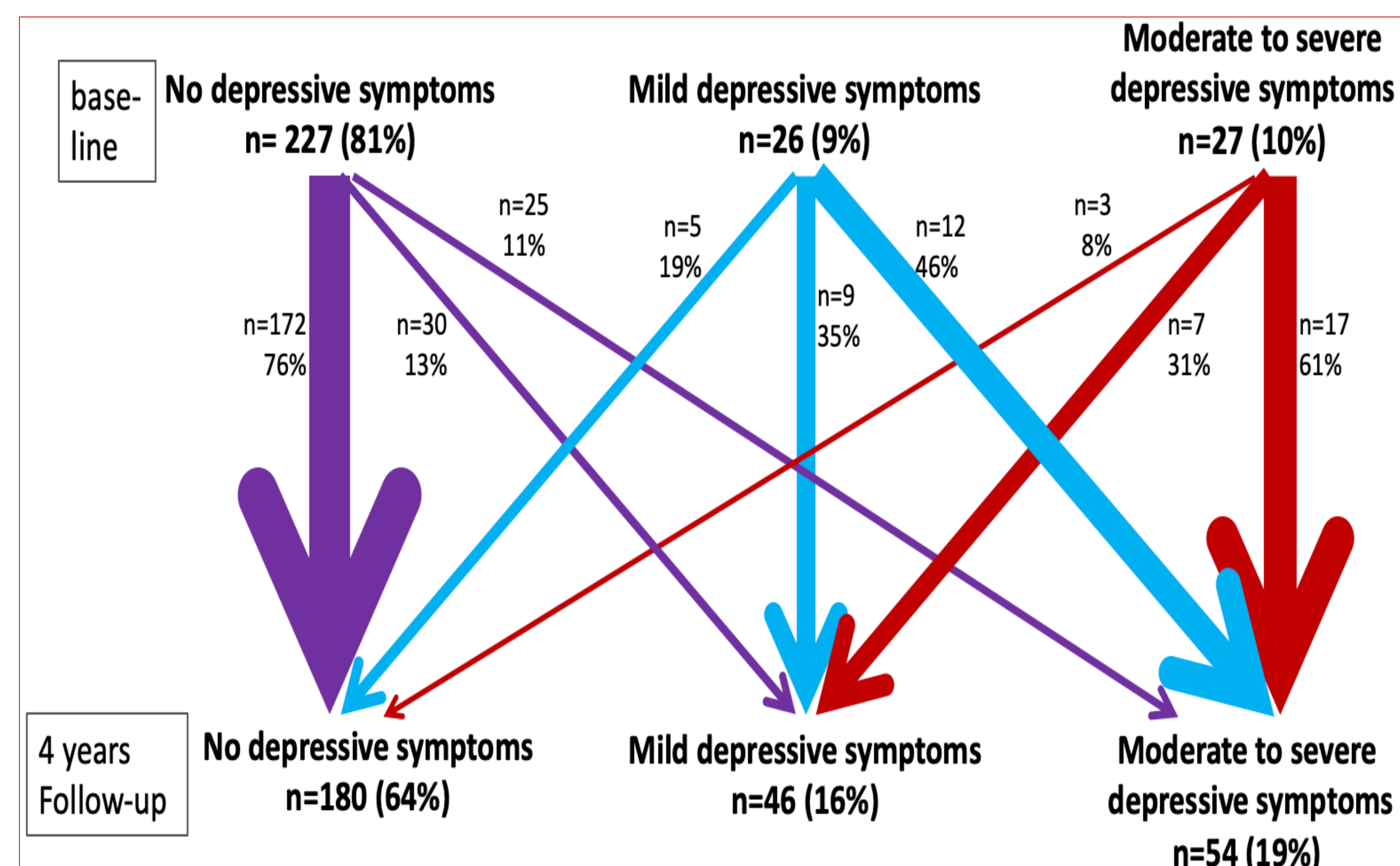
Abbreviations: SD= standard deviation; MOCA= Montreal Cognitive Assessment; UPDRS= Unified Parkinson's disease rating scale

Figure 1.
Trends of depressive symptoms in PD

A. Changes between categories from baseline to 2 years follow up



B. Changes between categories from baseline to 4 years follow up



Conclusions

- Changes between categories of depressive symptoms can be observed over time ($p < .001$), with more variability in the mild category.
 - The cause of this unstable trend is uncertain:
 - personal stressors, medication use, medical comorbidities and progression of PD may contribute to these changes
- Limitation: Our description is based on paired longitudinal data and not the full range of data over the years.
- Future direction involves a cohort study where a trajectory of depressive symptoms between same patients could be analyzed.

References

- Kroenke, Kurt, et al. "Minimally important differences and severity thresholds are estimated for the PROMIS depression scales from three randomized clinical trials." *Journal of affective disorders* 266 (2020): 100-108.
- Wee, Natalie, et al. "Depression and anxiety are co-morbid but dissociable in mild Parkinson's disease: A prospective longitudinal study of patterns and predictors." *Parkinsonism & Related Disorders* 23 (2016): 50-56.