

# Disability in daily activities and fear of falling are independent predictors of quality of life in people with Parkinson's disease

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## OBJECTIVES

To identify among demographic and clinical data, motor and functional impairment, fear of falling and balance measures, factors that contribute to quality of life (QoL) in people with Parkinson's disease (PD).

## BACKGROUND

PD is a chronic and progressive neurodegenerative condition with a variety of motor and non-motor symptoms that may affect the ability to perform daily activities and have an impact in social functioning. It's important to identify predictors of QoL between clinical features, PD-specific scales and balance-related measures.<sup>1,2</sup>

## METHODS

### Study sample

- Consecutive participants with idiopathic PD and independent walking ability.
- Movement Disorders Clinic – AMMI, Bahia State Health Attention Center for the Elderly– CREASI/SESAB, Salvador, Bahia, Brazil
- A cross-sectional analysis was performed.

### Exclusion criteria

- Dementia
- Neurological conditions other than PD
- Visual disturbance or vestibular dysfunction
- Musculoskeletal disorders limiting locomotion or balance

### Assessments

- Demographic and clinical data
- Parkinson's Disease Questionnaire (PDQ-8)
- UPDRS- ADL and motor
- Modified Hoehn and Yahr scale (H&Y)
- Schwab and England scale (S&E)
- Berg Balance Scale (BBS)
- Dynamic Gait Index (DGI)
- Functional Reach Test (FRT)
- Timed Up and Go Test (TUG)
- Activities-specific Balance Confidence scale (ABC)
- Falls Efficacy Scale-International (FES-I)
- Patients were tested during the "on" phase of the medication cycle.

### Statistical Analysis

- Descriptive statistics for demographic and clinical variables.
- Student's t-test, ANOVA, Pearson and Spearman correlation coefficients were used to examine the association between the PDQ-8 and these variables, when appropriate.
- Variables with  $p < 0.1$  were selected to enter into the stepwise multiple linear regression model.
- A significance level of 0.05 was set for these statistical tests.

## RESULTS

### Study sample

- 230 PD patients
- Age: mean of 70.8 years (SD 6.7)
- Gender: 122 (53%) male

Most patients (92.6%) had mild to moderate disease severity (H&Y stages 2-3), as shown in Figure 1.

The following variables were entered into the linear regression model: PD duration, levodopa equivalent dose, dyskinesia, motor fluctuation, history of falls, freezing of gait, H&Y  $\geq 2.5$ , UPDRS- ADL and motor, ABC, FES-I, BBS, FRT and TUG (Figure 1 and Table 1).

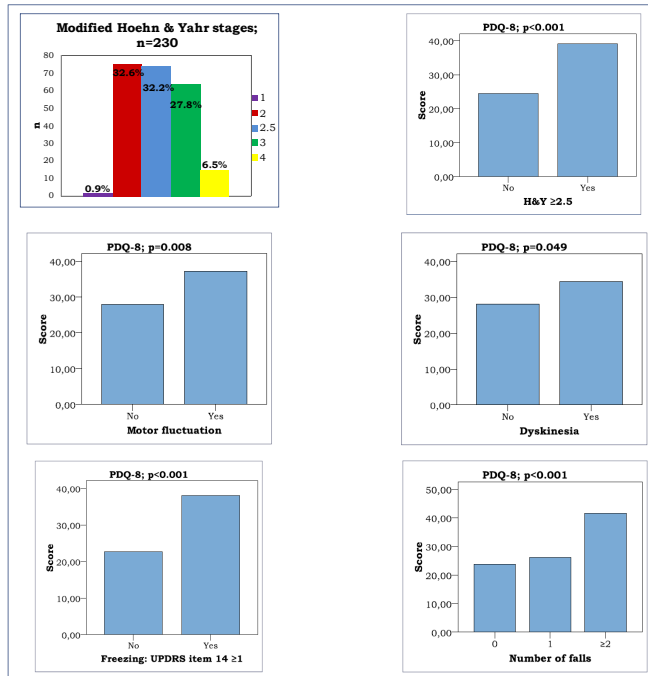


Figure 1. Clinical data of 230 PD patients and association with PDQ-8.

Table 1. Correlations between PDQ-8 score and clinical features, PD-specific scales and balance-related measures.

	PDQ-8	
	Correlation (r)	p value
Age	0.011*	0.871
Disease duration	0.224*	0.001
LED	0.213*	0.001
UPDRS- ADL	0.615*	<0.001
UPDRS- Motor	0.432*	<0.001
S&E	-0.528*	<0.001
BBS	-0.454*	<0.001
DGI	0.482*	<0.001
TUG	0.439**	<0.001
FRT	-0.342*	<0.001
ABC	-0.565*	<0.001
FES-I	0.553*	<0.001

\*Pearson correlation coefficient.

\*\*Spearman correlation coefficient.

The UPDRS- ADL and FES-I were independent predictors of QoL. The UPDRS-ADL accounted for 37.7% of the variance of PDQ-8 score and the full model explained 43.8% of the variance of PDQ-8 score (Table 2).

Table 2. Results of stepwise multiple linear regression analysis of PDQ-8 score.

Predictors	$\beta$	p value	R <sup>2</sup>	Adjusted R <sup>2</sup>
UPDRS- ADL	1.403	<0.001	0.377	0.374
FES-I	0.551	<0.001	0.443	0.438

## CONCLUSIONS

Our results suggest that target interventions to address functional limitation and fear of falling, a construct related to balance and fall risk, may help not only to reduce disability, but also to improve QoL.

## REFERENCES

- Schrag A et al. What contributes to quality of life in patients with Parkinson's disease? J Neurol Neurosurg Psychiatry 2000;69:308-312.
- Ellis T. et al. Which measures of physical function and motor impairment best predict quality of life in Parkinson's disease? Parkinsonism and Related Disorders 2011;17:693-697.