Supplementary Material

Impact of the COVID-19 Pandemic on the Quality of Life of Patients with Parkinson's Disease and Their Caregivers: A Single-Center Survey in Tochigi Prefecture

<u>Supplementary Table 1. Comorbidities in PD patients and caregivers</u>

Comorbidities	CG	PD	p
Hypertension	16 (16.0)	21 (21.0)	0.363
Diabetes mellitus	3 (3.0)	10 (10.0)	0.045
Dyslipidemia	4 (4.0)	5 (5.0)	1.000
Respiratory diseases	4 (4.0)	8 (8.0%)	0.234
Thyroid disease	2 (2.0)	6 (6.0)	0.279
Liver disease	2 (2.0)	2 (2.0)	1.000
Gastrointestinal disease	5 (5.0)	4 (4.0)	1.000
Stroke	0 (0.0)	2 (2.0)	0.497
Heart disease	1 (1.0)	6 (6.0)	0.118
Spine/joint disease	3 (3.0)	7 (7.0)	0.194
Others	13 (13.0)	21 (21.0)	0.132

CG, caregivers; PD, Parkinson's disease
Using the chi-square test or Fisher's exact test.

Supplementary Table 2. Stepwise linear regression analysis of the subscales of the SF-8 (health-related QOL) in patients with PD

Variables	Partial regression coefficient	SE	95% CI	p[a]
Physical function				
HY stage	-2.256	0.785	-3.794 to -0.719	0.004
Gait	-2.810	0.700	-4.183 to -1.437	<0.001
Alcohol intake	1.204	0.565	0.095 to 2.312	0.033
Body weight	3.512	1.241	1.079 to 5.944	0.005
Role physical				
LED	-3.047	1.482	-0.142 to -0.209	0.040
Gait	-3.516	0.795	-1.958 to -0.409	<0.001
Body weight	3.598	1.425	6.391 to 0.218	0.012
Bodily pain				
LED	-5.780	1.589	-8.894 to -2.667	<0.001
Stress	-4.459	1.583	-7.561 to -1.357	0.005
Rigidity	-4.699	0.824	-6.314 to -3.084	<0.001
Caffeine	9.171	2.617	4.041 to 14.300	<0.001
Comorbidities	-3.848	1.646	-7.074 to -0.622	0.019
General health				
HY stage	-2.694	0.694	-4.053 to -1.334	<0.001
Depression	-4.922	1.509	-7.879 to -1965	0.001
PD-related symptoms	-4.700	1.169	-4.022 to -2.410	<0.001
Vitality				
Anxiety	-5.624	2.218	-9.971 to -1.278	0.011
Depression	-5.250	1.343	-7.882 to -2.618	<0.001
Mood	-2.222	0.710	-3.614 to -0.830	0.002
Social functioning				
HY stage	-2.689	0.920	-4.491 to -0.886	0.003
Stress	-4.613	1.557	-7.665 to -1.561	0.003
Body weight	3.432	1.502	0.489 to 6.376	0.022
Role emotional				
Sex	-3.950	1.334	-6.566 to -1.335	0.003
Disease duration	-0.390	0.153	-0.691 to -0.090	0.011

Anxiety	-6.634	2.836	-12.192 to -1.076	0.019
Depression	-5.475	1.637	-8.683 to -2.266	0.001
Stress	-3.721	1.359	-6.566 to -1.058	0.006
Mental health				
Sex	-3.919	1.107	-6.089 to -1.749	<0.001
Disease duration	-0.340	0.127	-0.588 to -0.092	0.007
Anxiety	-8.372	2.354	-12.987 to -3.785	<0.001
Depression	-3.704	1.352	-6.353 to -1.054	0.006
Stress	-2.901	1.127	-5.110 to -0.692	0.010
Mask usage	-0.352	0.174	-0.694 to -0.262	0.043

SF, short form; QOL, quality of life; PD, Parkinson's disease; SE, standard error; HY, Hoehn and Yahr; LED, levodopa equivalent dose, PGIC, patient's global impression of change; COVID-19, coronavirus disease 2019

[a]Using the results from the combined 10 data sets after the application of multiple imputation. Independent variables included in the analysis were age, sex (M=0, F=1), smoking, alcohol, caffeine, disease duration, onset age of PD (years), evaluation period after the end of the state of emergency (days), comorbidity (no=0, yes=1), HY stage, LED (<400 mg/day=0, ≥400 mg/day=1), anxiety (no=0, yes=1), depression (no=0, yes=1), PGIC scale scores (1 to 7) for tremor, bradykinesia, rigidity, gait, mood, sleep, cognition, changes in stress (decreased=0, unchanged=1, increased=2), physical activity (decreased=0, unchanged=1, increased=2), body weight (decreased=0, unchanged=1, increased=2), PD-related symptoms (improved=0, unchanged=1, worsened=2), use of online medical care (no=0, yes=1), mask usage (hours/day), and interest in and concern about COVID-19 (5-point scale).

SE, standard error.

Supplementary Table 3. Stepwise linear regression analysis of the subscales of the SF-8 (health-related QOL) in caregivers

Variables	Partial regression coefficient	SE	95%CI	p[a]
Physical function				
Anxiety	-6.988	2.461	-11.812 to -2.164	0.005
Depression	-3.240	1.510	-6.199 to -0.281	0.032
Smoking	-1.810	0.793	-3.363 to -0.256	0.022
Gait*	-1.351	0.631	-2.589 to -0.114	0.032
Role physical				
Depression	-7.031	1.641	-10.248 to -3.814	<0.001
Bodily pain				
Age	-0.178	0.069	-0.313 to -0.043	0.010
Depression	-5.166	2.195	-9.469 to -0.864	0.019
General health				
Comorbidity	-5.141	1.307	-7.701 to -2.580	<0.001
Vitality				
Depression	-3.987	1.406	-6.742 to -1.232	0.005
Postural stability	-1.922	0.587	-3.072 to -0.772	0.001
Comorbidity	-2.408	1.081	-4.526 to -0.291	0.026
Social functioning				
Depression	-6.759	1.881	-12.414 to -3.779	<0.001
Physical activity	3.842	1.581	0.743 to 6.941	0.015
Role emotional				
Anxiety	-7.268	2.976	-13.101 to -1.436	0.015
Depression	-6.759	1.881	-10.446 to -3.072	<0.001
Mental health				
Depression	-5.491	1.580	-8.588 to -2.394	0.001
Stress	-2.783	1.203	-5.142 to -0.425	0.021
Mood*	-2.195	0.776	-3.715 to -0.674	0.005

SF, short form; QOL, quality of life; SE, standard error; PGIC, patient's global impression of change; PD, Parkinson's disease; COVID-19, coronavirus disease 2019
[a]Using the results from the combined 10 data sets after the application of multiple imputation. Independent variables included in the analysis were age, sex, smoking, alcohol, caffeine, evaluation period after the end of the state of emergency (days), comorbidity (no=0, yes=1), anxiety (no=0, yes=1), depression (no=0, yes=1), PGIC scale scores (1 to 7) for tremor*,

bradykinesia*, rigidity*, gait*, cognition*, mood* and sleep*, changes in stress (decreased=0, unchanged=1, increased=2), physical activity (decreased=0, unchanged=1, increased=2), body weight (decreased=0, unchanged=1, increased=2), PD-related symptoms* (improved=0, unchanged=1, worsened=2), mask usage (hours/day), and interest in and concern about COVID-19 (5-point scale).

*The patients' symptoms assessed by the caregivers.