

Supplementary Material

PDQ-8: A Simplified and Effective Tool Measuring Life Quality in Progressive Supranuclear Palsy

Supplementary Table 1. Great relevance of PDQ-8 SI and other QoL instruments in PSP patients with shorter and longer disease duration.

	PSP patients with shorter disease duration	PSP patients with longer disease duration
<i>correlated with PDQ-8 SI</i>		
PSP-QoL SI	$r = 0.823^{***}$	$r = 0.788^{***}$
Physical Subscore	$r = 0.777^{***}$	$r = 0.732^{***}$
Mental Subscore	$r = 0.689^{***}$	$r = 0.715^{***}$
PDQ-39 SI	$r = 0.952^{***}$	$r = 0.946^{***}$

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. The Spearman correlation was made between PDQ-8 SI and other QoL instruments in patients with shorter and longer disease duration (divided by 36 months). PSP, progressive supranuclear palsy; PDQ-8, Parkinson's Disease Questionnaire-8; SI, summary index; PDQ-39, Parkinson's Disease Questionnaire-39; PSP-QoL, Progressive Supranuclear Palsy Quality of Life Scale.

Supplementary Table 2. The validity and reliability of PDQ-8.

PDQ-39 dimension	PDQ-8 item	Item to own dimension correlation	Item to other dimension correlation	Item – PDQ-8 total score correlation	Item – PDQ-39 total score correlation	Cronbach's α
Mobility	Q7	r =0.829***	r =0.319***-0.509***	0.716***	r =0.719***	0.836
Activity of daily living	Q12	r =0.809***	r =0.047 - 0.596***	0.588***	r =0.621***	
Emotional well-being	Q17	r =0.838***	r =0.206*-0.508***	0.674***	r =0.643***	
Stigma	Q25	r =0.889***	r =0.202*-0.552***	0.588***	r =0.513***	
Social support	Q27	r =0.837***	r =0.406*** -0.714***	0.704***	r =0.691***	
Cognitive	Q31	r =0.759***	r =0.344***-0.578***	0.709***	r =0.650***	
Communication	Q35	r =0.919***	r =0.227***-0.532***	0.656***	r =0.625***	
Physical discomfort	Q37	r =0.834***	r =0.325***-0.459***	0.632***	r =0.553***	

*p<0.05, **p<0.01, ***p<0.001. The spearman correlation is made between item and dimensions or total scores SI. PDQ-39, Parkinson's Disease Questionnaire-39; PDQ-8, Parkinson's Disease Questionnaire-8; SI, summary index.

Supplementary Table 3. Strong relevance of all QoL rating scales SI with each specific item of PSP-QoL in all patients with PSP.

	PSP-QoL SI	PDQ-39 SI	PDQ-8 SI
item 1	r = 0.714***	r = 0.658***	r = 0.634***
item 2	r = 0.665***	r = 0.627***	r = 0.620***
item 3	r = 0.704***	r = 0.612***	r = 0.578***
item 4	r = 0.602***	r = 0.540***	r = 0.455***
item 5	r = 0.557***	r = 0.482***	r = 0.395***
item 6	r = 0.561***	r = 0.389***	r = 0.380***
item 7	r = 0.403***	r = 0.304***	r = 0.315***
item 8	r = 0.581***	r = 0.523***	r = 0.483***
item 9	r = 0.483***	r = 0.386***	r = 0.373***
item 10	r = 0.376***	r = 0.280**	r = 0.281**
item 11	r = 0.607***	r = 0.518***	r = 0.536***
item 12	r = 0.544***	r = 0.427***	r = 0.421***
item 13	r = 0.726***	r = 0.581***	r = 0.544***
item 14	r = 0.809***	r = 0.700***	r = 0.643***
item 15	r = 0.562***	r = 0.420***	r = 0.409***
item 16	r = 0.700***	r = 0.539***	r = 0.542***
item 17	r = 0.705***	r = 0.631***	r = 0.627***
item 18	r = 0.850***	r = 0.749***	r = 0.718***
item 19	r = 0.759***	r = 0.686***	r = 0.674***
item 20	r = 0.716***	r = 0.631***	r = 0.630***
item 21	r = 0.779***	r = 0.692***	r = 0.664***
item 22	r = 0.764***	r = 0.656***	r = 0.625***
item 23	r = 0.785***	r = 0.683***	r = 0.667***
item 24	r = 0.661***	r = 0.548***	r = 0.578***
item 25	r = 0.666***	r = 0.543***	r = 0.588***
item 26	r = 0.662***	r = 0.487***	r = 0.536***
item 27	r = 0.652***	r = 0.574***	r = 0.609***
item 28	r = 0.624***	r = 0.539***	r = 0.569***
item 29	r = 0.490***	r = 0.368***	r = 0.371***
item 30	r = 0.568***	r = 0.532***	r = 0.553***
item 31	r = 0.674***	r = 0.528***	r = 0.572***
item 32	r = 0.724***	r = 0.598***	r = 0.578***
item 33	r = 0.554***	r = 0.475***	r = 0.528***
item 34	r = 0.641***	r = 0.468***	r = 0.500***
item 35	r = 0.671***	r = 0.497***	r = 0.532***
item 36	r = 0.542***	r = 0.375***	r = 0.411***
item 37	r = 0.535***	r = 0.379***	r = 0.380***
item 38	r = 0.490***	r = 0.364***	r = 0.362***
item 39	r = 0.542***	r = 0.339***	r = 0.318***
item 40	r = 0.513***	r = 0.357***	r = 0.339***
item 41	r = 0.677***	r = 0.420***	r = 0.438***
item 42	r = 0.610***	r = 0.420***	r = 0.438***
item 43	r = 0.703***	r = 0.511***	r = 0.533***
item 44	r = 0.709***	r = 0.583***	r = 0.596***
item 45	r = 0.709***	r = 0.524***	r = 0.545***

*p<0.05, **p<0.01, ***p<0.001. The spearman correlation was made between all QoL rating scales SI (PSP-QoL, PDQ-39 and PDQ-8) with each specific item of PSP-QoL. PSP, progressive supranuclear palsy; SI, summary index; PSP-QoL, Progressive Supranuclear Palsy Quality of Life Scale; PDQ-39, Parkinson's Disease Questionnaire-39; PDQ-8, Parkinson's Disease Questionnaire-8.

Supplementary Table 4. Correlation between QoL and clinical features in PSP and different subtypes.

	Age	Disease duration	PSPrs	MMSE	NMSS	GDS	ESS
PSP total (n=132)							
PSP-QoL SI	0.061	0.369***	0.759***	-0.411***	0.657***	0.642***	0.330***
PDQ-8 SI	0.053	0.234**	0.559***	-0.272**	0.610***	0.638***	0.396***
PDQ-39 SI	0.089	0.260**	0.610***	-0.286**	0.628***	0.638***	0.409***
PSP-RS subgroup (n=71)							
PSP-QoL SI	0.107	0.311**	0.737***	-0.358**	0.685***	0.694***	0.408***
PDQ-8 SI	0.164	0.115	0.583***	-0.317**	0.655***	0.643***	0.467***
PDQ-39 SI	0.214	0.183	0.621***	-0.285*	0.655***	0.652***	0.480***
PSP-non-RS subgroup (n=61)							
PSP-QoL SI	-0.094	0.570***	0.654***	-0.296*	0.626***	0.509***	0.167
PDQ-8 SI	-0.115	0.435***	0.483***	-0.140	0.527***	0.565***	0.252
PDQ-39 SI	-0.097	0.451***	0.491***	-0.168	0.573***	0.542***	0.271*

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. The spearman correlation is made among different quality of life questionnaires and clinical scores in total PSP and different subtypes. PSP-RS, progressive supranuclear palsy-Richardson's syndrome; PSP- non-RS, other PSP subtypes except progressive supranuclear palsy-Richardson's syndrome; PSP-QoL, Progressive Supranuclear Palsy Quality of Life Scale; PDQ-8, Parkinson's Disease Questionnaire-8; PDQ-39, Parkinson's Disease Questionnaire-39; SI, summary index; PSPrs, PSP rating scales; MMSE, Mini-Mental State Examination; NMSS, Non-Motor Symptoms Scale; GDS, Geriatric Depression Scale; ESS, Epworth Sleepiness Questionnaire.