Cross Cultural Evaluation of the Short-form 8 item Parkinson's Disease Questionnaire Results from America, Canada, Japan, Italy and Spain

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Abstract

Objective: To evaluate the psychometric properties of a short form health survey, the Parkinson's Disease Questionnaire (PDQ-8), cross-culturally, by comparing results gained from this instrument to the original longer form instrument - the PDQ-39.
Design: Data are from the Global Parkinson's Disease Survey (GPDS).
Outcomes: The 8-item Parkinson's Disease Questionnaire Single Index Score (PDQ-8-SI). In this study, we evaluate response rate, scaling assumptions, and data quality, in terms of comparability of results with the parent form of the instrument in the USA, Canada, Spain, Italy and Japan.
Results: The PDQ-8 was found to produce results that were very similar to the parent form across all five countries.
Conclusions: Results suggest that the PDQ-8 is a valid and reliable measure that can be appropriately and meaningfully used in cross-cultural studies.

Introduction

The PDQ is the most widely validated and used patient self-reported quality of life (QoL) questionnaire for Parkinson's Disease (PD). The PDQ has been widely validated both in the UK, where it was developed, and elsewhere resulting in the availability of over 70 language versions. The PDQ-8 is a sub-set of the parent (PDQ-39) version, taking one item from each of the 8 discrete scales of the full 39 item PDQ-39. The PDQ-8 can be used to produce a summary index (PDQ-8-SI) of overall health status and is ideal when a shorter measure of PD is required.

Methods

All data for the analyses reported here come from the GPDS. Translated versions of the PDQ-39 were administered by an interviewer in USA, Canada, Italy, Spain and Japan. Relevant data for corresponding to the PDQ-8 was then extracted from the acquired PDQ-39 data.

Results

Data was acquired from a total of 819 respondents

Data Completeness (all items) = 96.95%
No evidence of **floor** or **ceiling effects** were observed on PDQ-8-SI with only 25 (3.05%) scoring zero and 2 (0.24%) scoring the maximum. Furthermore, only 35 (4.27%) of respondents scored 5 or less and only 3 (0.37%) scored 95 or more.

Testing and Scaling assumptions were assessed by applying factor analytical procedures to the PDQ-8-SI (see Table 1), leading to single principal component solutions, eigenvalues > 1.2 in all countries. These single factor solutions explained 53.96% (USA); 45.95% (Canada); 52.93% (Italy); 41.71% (Spain); 37.04% (Japan) of variance. These results suggest that the PDQ-8-SI can legitimately be calculated across countries.

Table 1. Results of principal component analyses (loadings) of the eight items of the PDQ-8 by country

PDQ-39 Dimension and contents of selected items	USA	Canada	Italy	Spain	Japan
Mobility (7) - difficulty getting around in public places	0.76	0.80	0.82	0.78	0.63
ADL (12) - difficulty dressing	0.72	0.73	0.79	0.80	0.67
Emotional well-being (17) - felt depressed	0.76	0.65	0.73	0.49	0.75
Social support (27) - problems with close relationships	0.72	0.75	0.71	0.61	0.61
Cognitions (31) - problems with concentration	0.73	0.71	0.73	0.75	0.66
Communication (35) - felt unable to communicate properly	0.80	0.61	0.80	0.75	0.69
Bodily Discomfort (37) - had painful muscle cramps and pains	0.61	0.51	0.54	0.36	0.27
Stigma (25) - felt embarrassed by having PD	0.76	0.62	0.70	0.46	0.46
% variance explained	53.98	45.95	53.57	41.76	37.16

numbers in brackets are item number locations in PDQ-39

Internal reliability was calculated for all countries using the Cronbach's alpha. Estimates are generally regarded as good when in excess of 0.7. The data satisfied this criterion for all countries:-

USA 0.88
Canada 0.83
Italy 0.87
Spain 0.79
Japan 0.73

Finally, results from the PDQ-8-SI were compared to that of the parent PDQ-39 and were found to be highly correlated (Spearman's rho):-

	USA	Canada	Italy	Spain	Japan
rho	0.96	0.96	0.96	0.93	0.92
n	178	124	195	194	97
p	<0.001	<0.001	<0.001	<0.001	<0.001

Mean scores are similar between the PDQ-39-SI and PDQ-8-SI , and 95% confidence intervals overlap.

Conclusion

The evidence reported here supports the cross-cultural use of the short-form PDQ-8-SI as a useful measure of PD patient perceived health in all five target countries.

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