The French version of the Munich Dysphagia Test-Parkinson's disease (MDT-PD): Translation and validation in a multilingual population of the Luxembourg Parkinson's Study (HELP-PD).

Geraldine Hipp[1,2], Michel Vaillant[4], Manon Gantenbein[3] , Michèle Kerschenmeyer,[1,2], Pierre Kolber[1,2], Christian Stallinger[1,2], Kirsten Roomp[1], Laura Longhino[2], Alexandra Schweicher[2], Rejko Krüger[1,2], Janine Simons[5]

[1] Clinical and Experimental Neuroscience, Luxembourg Centre for Systems Biomedicine (LCSB), University of Luxembourg, Luxembourg; [2] Centre Hospitalier de Luxembourg (CHL), Luxembourg; [3] Clinical and Epidemiological Investigation Center, Luxembourg Institute of Health (LIH), Strassen, Luxembourg; [4] Competence Centre for Methodology and Statistics, Luxembourg Institute of Health (LIH), Strassen, Luxembourg; [5]University of Lübeck, Department of Neuology, Lübeck, Germany.

Introduction

Background

The MDT-PD, developed and validated in German [1], is a highly sensitive and specific self-reported **screening questionnaire** to detect **early oropharyngeal symptoms and aspiration risk** in patients with idiopathic Parkinson's disease (IPD).

Objective

To provide and **validate a French translation** of the MDT-PD in the Luxembourgish multilingual population, in terms of linguistic, test-retest-, language reliability and sensitivity.

References:

1. Simons JA, Fietzek UM, Waldmann A, Warnecke T, Schuster T, Ceballos-Baumann AO (2014) Development and validation of a new screening questionnaire for dysphagia in early stages of Parkinson's disease. Parkinsonism Relat Disord 20: 992-998.
2. Hong H, Choi Y, Hahn S, Park SK, Park BJ (2014) Nomogram for sample size calculation on a straightforward basis for the kappa statistic. Ann Epidemiol 24: 673-680.

Methods

Linguistic validation

1

2 translators: Forward translation German-French → 2 translators: Backward translation French-German → Consented version → 7 Patients: Completion « thinking aloud » → Final version

Patients' comments were recorded and analyzed qualitatively.

Psychometric validation

2

Luxembourgish cohort (HELP-PD)

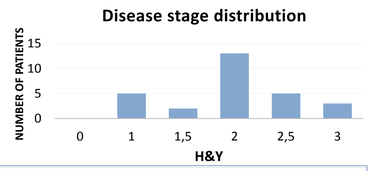
Inclusion criteria:

- IPD
- MoCA>17
- French and German = 2/3 best languages

Subjects

Demographics

N=28	Age (yrs)	Gender (m/f)	MoCA	UPDRS III
Mean	68.3	23/5	26.25	30
SD	11.4		2.5	12.4



Procedure

MDT-PD French version 1 → *5 days* → MDT-PD French version 2 → *5 days* → MDT-PD German version → score ≥3.65 → clinical exam. and FEES

Test- Retest reliability

Lanaguage reliability

Internal consistency

Construct validity

Sensitivity

Results

All subjects (IPD: n=6, PSP: n=1, age: 66.4±11.5, UPDRS: 35.4±13, H&Y: 2.2±0.7 MoCA: 25.1±2.6) completed the French MDT-PD successfully.

Items 3, 19 and 24 were commented by in total 2 patients.

Comments concerned scaling of the trouble, but not the interpretation of the item. We didn't need to perform a**ny modification to the initial version.**

Test- retest reliability (Fr1 vs. Fr2)

Item	Difference (points) 0	1	2	3	Kappa
Q1	20	0	0	0	1,0000
Q2	19	1	0	0	1,0000
Q3	17	3	0	0	-0,0714
Q4	17	3	0	0	0,4828
Q5	15	5	0	0	
Q6	17	3	0	0	0,4828
Q7	16	4	0	0	0,5238
Q8	18	2	0	0	0,4595
Q9	18	2	0	0	0,6154
Q10	17	2	1	0	
Q11	15	4	1	0	0,5495
Q12	14	6	0	0	0,5313
Q13	15	5	0	0	
Q14	16	2	1	0	0,2453
Q15	17	2	1	0	0,5122
Q16	16	3	0	0	0,3388
Q17	15	5	0	0	0,4975
Q18	17	2	0	0	0,7500
Q19	17	3	0	0	0,4393
Q20	18	1	1	0	0,7727
Q21	19	1	0	0	
Q22	13	4	2	0	
Q23	15	4	0	0	0,4975
Q24	20	0	0	0	1,0000
Q25	19	0	0	1	0,7727
Q26	20	0	0	0	1,0000

Table 2: number of convergent and divergent responses per item
→Divergence only exceeds 1 point in 8 responses for test-retest an in 1 response for language comparision

Lanaguage reliability (Fr1 vs. G)

Item	Difference (points) 0	1	2	3	Kappa
Q1	19	0	0	0	1,0000
Q2	18	1	0	0	1,0000
Q3	18	1	0	0	
Q4	18	1	0	0	0,7711
Q5	19	0	0	0	1,0000
Q6	19	0	0	0	1,0000
Q7	18	1	0	0	0,7711
Q8	17	2	0	0	
Q9	19	0	0	0	1,0000
Q10	16	2	0	0	0,8605
Q11	16	2	0	0	
Q12	16	2	0	0	0,8200
Q13	18	1	0	0	0,8841
Q14	18	1	0	0	
Q15	19	0	0	0	1,0000
Q16	17	2	0	0	0,4412
Q17	16	3	0	0	
Q18	17	1	0	0	0,8241
Q19	19	0	0	0	1,0000
Q20	16	2	0	0	0,5476
Q21	18	1	0	0	
Q22	16	2	0	0	0,8065
Q23	18	1	0	0	0,8623
Q24	19	0	0	0	1,0000
Q25	19	0	0	0	1,0000
Q26	18	0	0	1	0,8939

Internal consistency

	Test 1 FR	Test 2 FR	Test G	Origin. Ver.
Cronbach's alpha	0,7489	0,7582	0,6679	0,9100

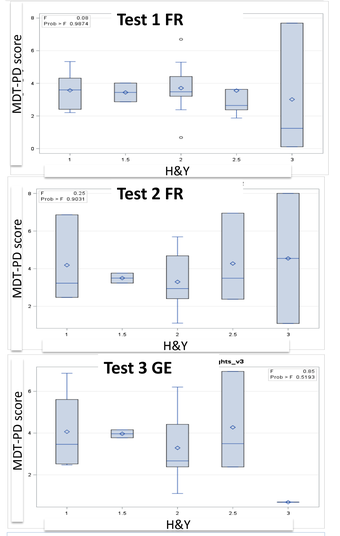
Cronbach's alpha coefficient is > 0.7 in the 2 tests of the French version showing a good internal consistency. The german version shows lower internal consistency in our sample, but not in the german speaking sample of the original study.

Sensitivity

Patient	UPDRS III	H&Y	MoCA	MDT-PD 1	MDT-PD 2	MDT-PD 3
1	31	2	25	3,482	5,693	5,677
2	23	2	28	5,293	4,864	6,204
3	10	1	29	4,317	3,229	4,35
4	27	2.5	30	7,246	6,953	6,953
5	34	1.5	28	4,017	3,765	3,774
6	23	1.5	26	2,868	3,235	4,159
7	34	2	27	4,417	4,684	4,417
8	26	3	22	7,69	8,003	
9	18	1	27	5,334	6,865	6,865

Table 3: 9 patients had a positive score and will undergo a clinical examnation and FEES

Construct validity



Diagrams 1-3: MDT score distribution for each H&Y stage
→No significant discrimination between disease stages

Conclusion

These preliminary results show that most of the MDT-PD questionnaire items are completed consistently over **2 different languages but not always when the 2 French completions are compared**. Moreover, the items show a significant correlation within each questionnaire completion. Nevertheless, a larger sample is necessary in order to provide more heterogenic responses, and to empower the statistical analysis. Furthermore, clinical validity will be shown by further investigation of the subgroup of positively scored patients. The validated French MDT-PD makes a non-invasive tool for early detection and implementation of novel prevention strategies, accessible to the francophone population.

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