which scores from 0 to 14. In this study, we present the data collected in an ongoing multicenter, multilingual validation of the DNMS Quest in consecutive patients with CCD attending botulinum toxin clinics at different regional centers in Germany and the UK.

Methods: In this prospective, one point in time, multicenter study we applied the DNMS Quest with comparator motor scales (TWSTRS, UDRS), established non-motor/quality of life questionnaires (CDQ-24, EQ.5D, MOCA), and the clinical global impression of severity (CGIS) in CCD patients as well as in age and gender matched healthy controls.

Results: A total of 35 patients with cervical dystonia (25 women); 59.6 ± 14.6 years old (mean $\pm$ standard deviation); 16.5 ± 12.3 years of disease duration, were assessed. Severity of motor dystonia assessed with TWSTRS was 33.6 ± 12.5 and with UDRS 10.2 ± 3.3. CGIS had a median score of 4.0 corresponding to patients being "moderately ill" (interquartile range 4.0 to 5.3). Mean DNMS Quest score was 6.5 ± 3.5 (range 4 to 9). Most prevalent dominant NMS, as declared in DNMS Quest, were pain (74%), sleep disturbances (49-63%), loss of confidence (stigma) (57%), fatigue (49%) and mood problems (31%). Data of patients with cranial dystonia as well as data of healthy controls are yet to be collected.

Conclusions: NMS are evident in patients with CCD and are often under-recognised. A simple to use self-completed screening tool like the DNMS Quest is needed to raise higher awareness for NMS in the context of routine clinical consultations in patients with focal dystonia. Pain, sleep dysfunction, stigma, fatigue and mood problems appear to be dominant issues prompting the need of specific treatment which would be missed otherwise.

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Differences in MDS-UPDRS scores based on Hoehn and Yahr stage and disease duration: Results of a large international multicenter study of 3206 patients (the QUALPD study)

M. Skorvanek, P. Martinez-Martin, N. Kovacs, I. Zezula, M. Rodriguez-Violante, J.-C. Corvol, P. Taba, K. Seppi, O. Levin, A. Schrag, T. Foltynie, M. Alvarez-Sanchez, T. Arakaki, Z. Aschermann, I. Aviles-Olmos, E. Benchetrit, C. Benoit, A. Bergareche-Yarza, A. Cervantes-Arriaga, A. Chade, F. Cormier, V. Datieva, D.A. Gallagher, N. Garretto, Z. Gdovinova, O. Gershanik, M. Grofik, V. Han, J. Huang, L. Kadastik-Eerme, M.M. Kurtis, G. Mangone, J.C. Martinez-Castrillo, A. Mendoza-Rodriguez, M. Minar, H.P. Moore, M. Muldmaa, C. Mueller, B. Pinter, W. Poewe, K. Rallmann, E. Reiter, C. Rodriguez-Blazquez, C. Singer, B.C. Tilley, P. Valkovic, C.G. Goetz, G.T. Stebbins (Kosice, Slovakia (Slovak Republic))

Objective: To analyze the MDS-UPDRS part I-IV scores and their differences based on Hoehn and Yahr stage (HY) and disease duration in a large cohort of Parkinson's disease (PD) patients.

Background: The MDS-UPDRS is a newly developed comprehensive tool to assess PD, its change over the course of PD including increasing disease duration and HY stages has not been well described.

Methods: This cross-sectional study collected demographic data and MDS-UPDRS scores including HY. MDS-UPDRS part I-IV subscores were analyzed using one-way ANOVA for each HY stage and for 5-year increments in disease duration.

Results: Mean participant age of the 3206 patients was 65.8 ± 10.6 years, 53.3% were men, mean disease duration was 11.5 ± 4.6 years and median HY was 2 (range 0-5). Scores of all four MDS-UPDRS parts increased significantly through HY stages 1-5, with and average increase of 3.8; 7.7; 14.6; and 2.0 points consecutively for parts I-IV, respectively. For 5-year increments in disease duration, MDS-UPDRS subscores increased by an average of 1.6; 3.3; 4.2; and 1.4 points consecutively for parts I-IV, respectively. This increase was significant during the first 15 years of disease for all four parts, while parts II, III and IV increased significantly also in the 15-20 year interval and only part II increased significantly in the 25 and more years interval. There was no change observed in the 20-25 year interval for any MDS-UPDRS part.

Conclusions: MDS-UPDRS scores for all four parts significantly increase with every HY stage and also with 5-year increments in disease duration in the first 15 years of the disease.

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Computer uses and difficulties in Parkinson's disease

Z. Katsarou, M. Plotnik, G. Zeilig, A. Gottlieb, R. Kizony, S. Bostantjopoulou (Thessaloniki, Greece)

Objective: The purpose of the study is to assess computer use habits and difficulties of patients (pts) with Parkinson's disease (PD). These are preliminary data for the MAMEM project (Multimedia Authoring and Management using your Eyes and Mind).

Background: Motor and non-motor symptoms of PD affect the ability to use computers. There are very few studies concerning computer use of patients with PD. Although patients consider computer use as an important part of their everyday life they face many difficulties using the keyboard and the mouse.

Methods: Thirty five PD pts with a long experience in computer operation were included in the study. Their mean age was 59.5 (SD8.27) years. Most of them were in Hoehn and Yahr stage II. PD pts uses, habits, and difficulties with the computer were explored by means of a structured interview which provided information in the form of yes/no answers to questions relevant to a wide range of usual computer uses and applications as well as difficulties in performing various tasks relevant to computer operation. Two quantitative scales one referring to the contribution of the computer in social life, every day activities, emotional well- being (total score: 9=not important/45 = very important) and the other exploring the disease impact on various aspects of computer operation (total score: 11=no effect/55 maximum effect) were also employed.

Results: PD pts reported having a mean 13.9 (SD 9.8) yrs of computer experience and a mean daily use of 3.7 (2.6) hours. The most frequent computer uses were communication (80%), information (62.9%), social participation(54.3%) and everyday finances (51.4%). The most frequent computer applications used were internet browser (94.3% and e-mail (80%).Specific difficulty was reported in the following tasks: double clicking (48.6%), moving cursor (45.7%), using two keys at once (42.9%) and keyboard use (37,1%). The two quantitative scales yielded moderate mean total scores [23.2(SD 7.2) Social life contribution scale] and [25.9 (SD9.9) Disease impact on the computer operation scale].

Conclusions: Our preliminary results highlight the various aspects of computer uses and difficulties experienced by PD pts. This information is important for the development of innovating technology helping them to overcome their specific disabilities.

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Diagnostic performance of the Spanish version of the 19-items wearing-off questionnaire in Mexican patients with PD

D. Cruz-Fino, A. Alvarado-Bolaños, M. Rodríguez-Violante, A. Cervantes-Arriaga (Mexico City, Mexico)

Objective: To determine (1) the diagnostic properties of WOQ-19 for the diagnosis of wearing off in Mexican patients with PD; (2) the best cut-off value of WOQ-19 for the diagnosis of wearing-off; (3) and the frequency of the symptoms related to wearing off as assessed by WOQ-19.

Background: Motor complications frequently develop within 2 years of dopaminergic therapy in patients with PD. Of these, the most frequently reported is "wearing off", where patients find that therapeutic effect of each dose decreases and is no longer maintained through the end of the dosing interval. The WOQ-19, a shorter version derived from the WOQ-32, is used to assess the presence of wearing off. Although this instrument has been previously validated, results have varied among populations, suggesting that transcultural validation is necessary.

Methods: A cross-sectional study was carried out. Consecutive Mexican subjects with PD were included. All patients were evaluated by a neurologist with expertise in movement disorders and clinical criterion was considered "gold-standard" for the diagnosis of wearing off. Patients independently completed the Spanish version of WOQ-19.

Results: 174 patients were included, of which 67.2% had wearing off according to clinical criterion. Patients with wearing off had longer disease duration, a more severe disease, higher levodopa equivalent daily dose, and experienced dyskinesia with higher frequency. A cut-off value of 4 in the WOQ-19 showed the following diagnostic attributes: sensibility, 64.9%; specificity, 73.5%; positive and negative predictive value, 54.3% and 81.1% respectively. The area under the ROC curve was 0.76 (95% CI 0.69-0.82). Tremor was the most frequent symptom (39.1%) reported to improve after levodopa dosage in patients without wearing off; whereas slowness of movement (84.1%), rigidity (79.3%), tremor (74.4%), reduced dexterity (73.2%) and problems with balance (64.6%) were the most prevalent symptoms to benefit from levodopa dosage in patients with wearing off.