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The Unified Parkinson's Disease Rating Scale
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GERIATRIC FUNCTION

For individuals diagnosed with Parkinson's disease, the future may pose challenges to their physical movement and independence as well as their emotional and mental well-being while battling this manageable, yet challenging disease.

Next to Alzheimer's disease, Parkinson's disease (PD) is the second most common neurodegenerative disorder, affecting approximately 500,000 people in the United States (underestimated secondary to misdiagnoses of early signs/symptoms).[1] The four primary symptoms of PD are tremor or trembling in hands, arms, legs, jaw and face; rigidity or stiffness of the limbs and trunk; bradykinesia and postural instability, with resultant impaired balance and coordination.

Pathologically, PD is denoted by the loss of neurons mainly in the substantia nigra with characteristic protein deposits called Lewy bodies in the cytoplasm of neurons.[1] The onset of Parkinson's disease typically begins around age 50 with a greater prevalence in individuals over 80 years.[2]

As these symptoms become more pronounced, patients may have difficulty walking, talking or completing other simple tasks. With the progression of the disease, tremors that affect the majority of patients with PD may begin to interfere with their activities of daily living (ADLs). Depression and other emotional changes, difficulty in swallowing, chewing and speaking, gastrointestinal upset, skin problems and sleep disruptions are other challenges that may eventually be encountered by patients.

One way to assess the variety and severity of problems endured by a patient with PD is through the use of the Unified Parkinson's Disease Rating Scale (UPDRS).[3] The purpose of this scale is to provide a comprehensive evaluation of disability and impairment related to the disease.

In its current form, the UPDRS (version 3.0) includes four parts that assess mental status, behavior and mood (part I), activities of daily living (part II), motor function (part III) and complications of therapy, such as medications (part IV). Usually administered with the UPDRS are the modified Hoehn and Yahr staging and the Schwab and England ADL scale.

Studying Reliability

Reliability of the UPDRS has been examined with results indicating high internal consistency (Cronbach)[4] and high test-retest reliability in samples of patients at varying stages of PD.[5-7] Intraclass Correlation Coefficient (ICC) were as follows: UPDRS total score (0.92); mental 0.74); ADL (0.85), and motor (0.90).[4] Criterion validity and divergent validity have not been well established, but convergent validity, where comparisons of the UPDRS have been made with other scales/instruments assessing PD (e.g., Hoehn and Yahr or Schwab and England ADL scales) has been examined and found to be satisfactory.[8] Scoring on the UPDRS is straightforward with a higher score denoting greater disability in the individual. Parts I, II and III contain 44 questions each measured on a 5-point scale (0-4). Part IV contains 11 questions and the scale can range from 0 to 23. A total score can be obtained by adding the sum of all the parts.[3] In an excellent review of the UPDRS by the Movement Disorder Society Task Force on Rating Scales for Parkinson's disease, several strengths of the UPDRS are noted and recommended areas of improvement were detailed and listed below.[9]

Strengths:

1. The UPDRS is a well known and highly utilized assessment for clinical and research evaluation of PD;

2. Useful application across the clinical spectrum of PD;

3. Comprehensive coverage of motor symptoms;

4. High reliability and validity.

Weaknesses:

1. Some ambiguous items;

2. Inadequate instructions for raters;

3. Absence of screening questions on several important non-motor aspects of PD;

4. Cultural bias of some items on the ADL portion of the scale.

Recommendations:

1. Establish clinimetric properties that define minimal clinically relevant differences and minimal clinically relevant incremental differences.

2. Develop a culturally unbiased scale that is validated indifferent racial, gender and age groups.

3. Include an appendix with more detailed scales to determine the severity of non-motor impairments.

It has been suggested that the UPDRS be used in conjunction with other mobility measures such as the Berg Balance Scale (BBD)[10] and the Timed Up and Go Test[11] in order to obtain a more comprehensive evaluation of the function of persons with PD, specifically balance and gait, that may not be adequately assessed by the UPDRS.[12]

It is also suggested that the 27 items examining motor function may take too long to complete and that the items evaluating speech, facial expression, salivation and swallowing are not physical therapy-specific.[13]

In an article addressing postural stability and fall risk in individuals diagnosed with PD, the UPDRS total score and UPDRS-ADL subscale in conjunction with the BBS, when using a cut-off score of 44, were the top three clinical measures for fall discrimination.[14] s suggested by Landers et al, using a self-report scale such as the UPDRS, in combination with performance or function-based scales such as the BBS, may be useful in reducing the effects of responder bias and lead to a more accurate clinical picture of the individual being evaluated.[14]

The UPDRS continues to be used to evaluate function and establish interventions in patients with PD in order to create change in their physical, emotional, and mental states. It is useful across many disciplines including speech-language pathology, occupational therapy and physical therapy.

While there may be less lengthy assessment scales, the UPDRS gives a general overview of the functioning of the individual with PD and can be used in conjunction with other assessments of ADLs, motor and mental capacity.

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