

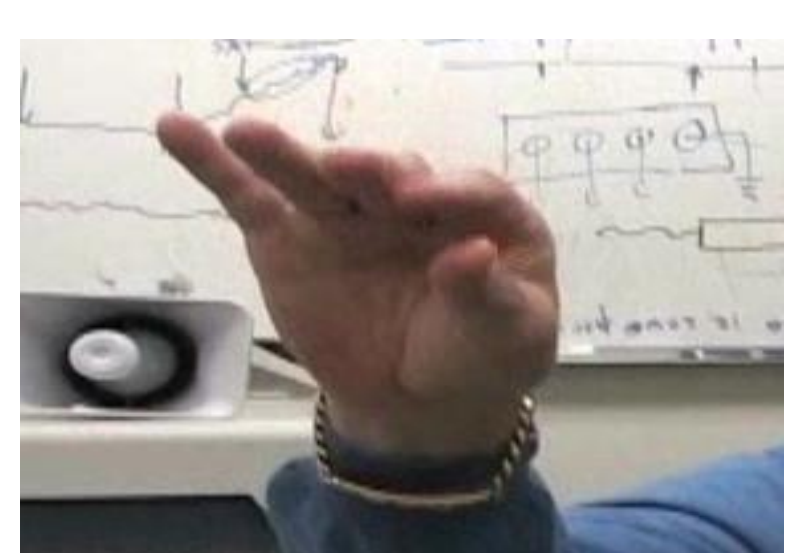


FINGER TAPPING AND PARKINSON'S DISEASE: PATIENT QUALITY OF LIFE



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INTRODUCTION



- The performance of repetitive finger movements is a clinical tool used to assess severity, progression, and treatment efficacy of Parkinson's disease (PD) and related disorders.
- Impaired control of repetitive finger movements can significantly impact the performance of daily living activities, such as writing and buttoning clothing.
- Approximately 60% of persons with PD tested to date demonstrate movement festination at rates near to and above 2 Hz which is NOT improved with dopaminergic medication (Figure 1).
- The effect of festination of repetitive finger movements on quality of life (QOL) is unknown.

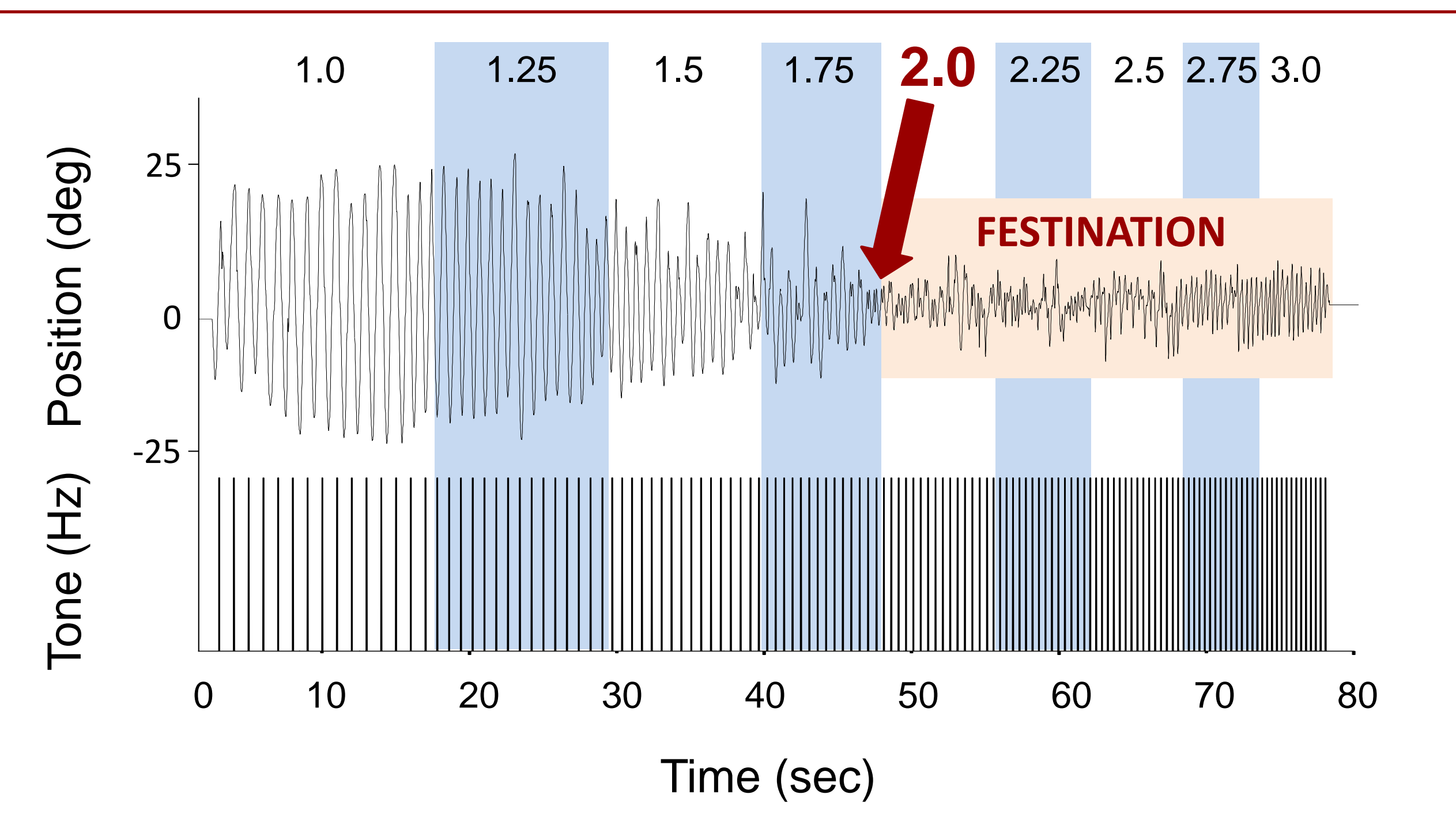


Figure 1. An example of festination at rates near to and above 2 Hz in a person with PD. **Movement festination is a change in movement rate and movement amplitude accompanied by frequent hesitations in movement.**

PURPOSE

The **purpose** of this study was to compare QOL ratings in persons with PD who demonstrated festination of repetitive finger movements and those who do not.

We **hypothesize** that persons with PD that display movement festination will score higher on the PDQ-39 (have a worse quality of life).

METHODOLOGY

- Participants:**
- 21 persons diagnosed with PD completed three trials of the finger tapping in the on medication state. (Table 1)
 - The most affected side was tested and participants were divided into two groups based on the presence of movement festination.
 - Festination was determined by comparing movement rate of the PD participants to a previously collected healthy older adult sample. Participants were assigned to the festination group if movement rate was 2 standard deviations from the control.

Table 1. Participant Demographics

| GROUP | FESTINATION N=8 | NON FESTINATION N= 13 |
|-----------------------------|--------------------|-----------------------------|
| Age (Mean(SD)) | 70 (7.6) | 71.6 (9.7) |
| Handedness (%R) | 87.5 | 92 |
| Hand Tested (%R) | 50 | 84.6 |
| Gender (%M) | 42 | 30 |
| Disease Duration (Mean(SD)) | 9.7 (3.8) | 7.6 (6.2) |

- Data Collection:**
- Participants completed an unconstrained finger flexion-extension movement in time with a series of acoustic tones presented at 1 Hz for 15 intervals, and then increased by 0.25 Hz every 15 intervals until reaching 3 Hz (Figure 1).

- The forearm, wrist, thumb, and fingers 2-4 were supported by a brace, and position was collected using a goniometer (Figure 2).

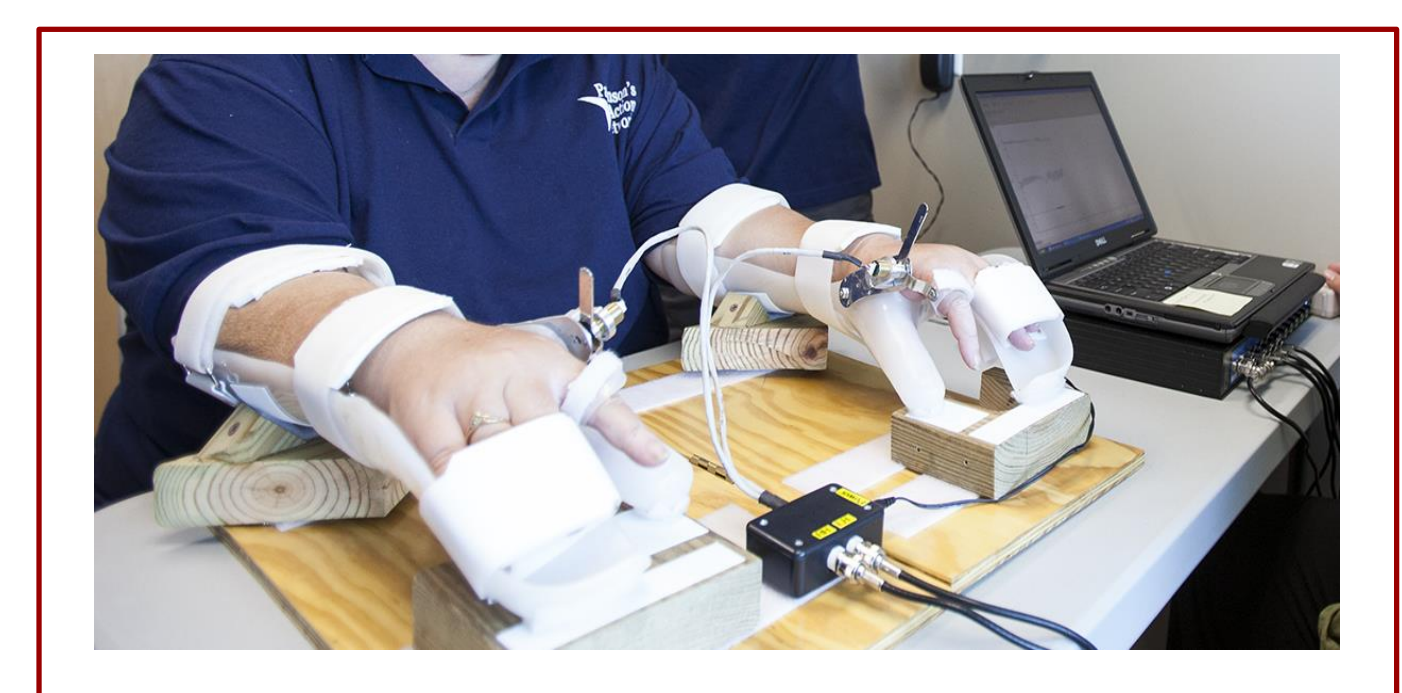


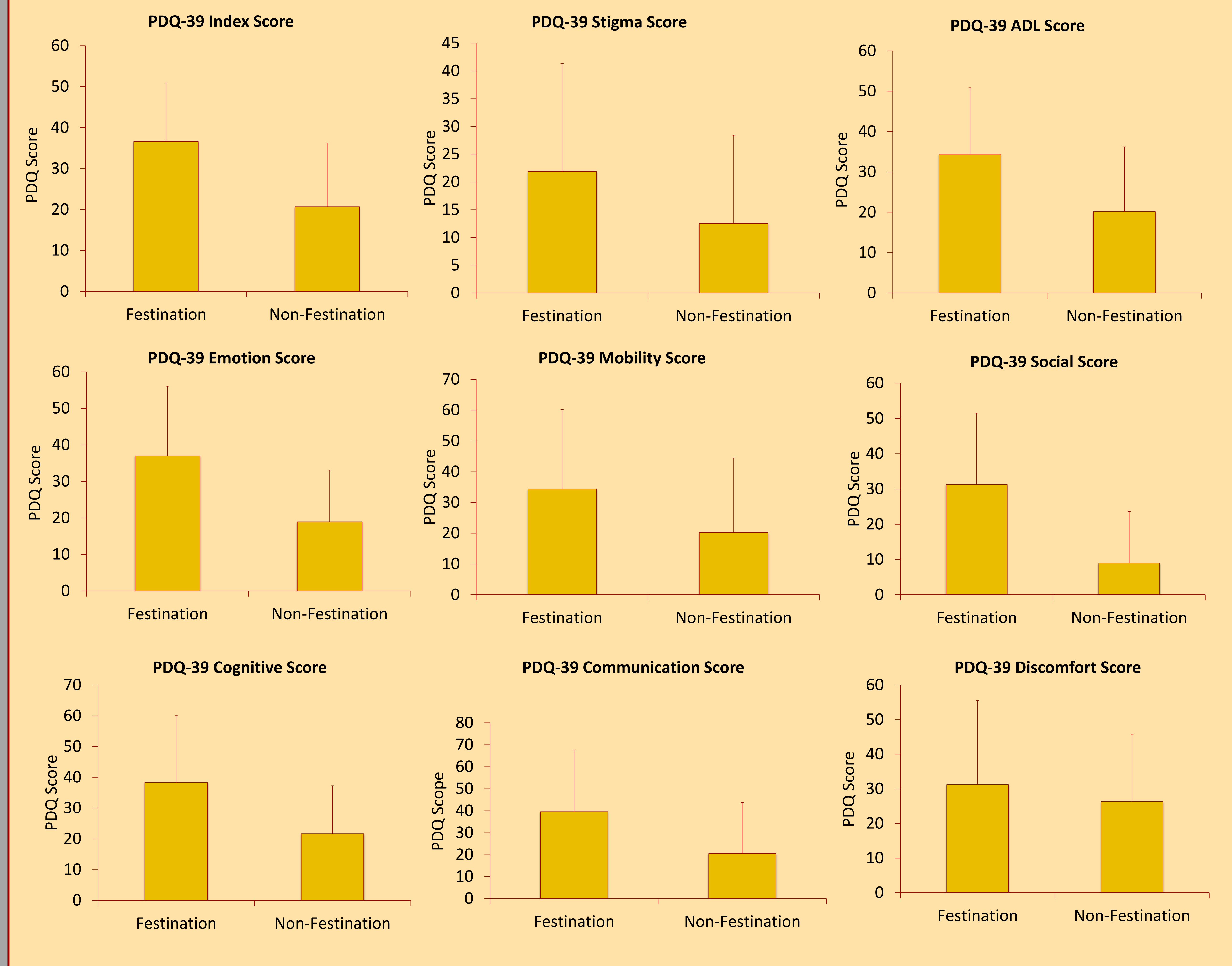
Figure 2. Data collection set up.

- Participants also completed the 39 question Parkinson's disease quality of life questionnaire (PDQ-39).

Statistical Analysis:

- Independent t-tests were used to compare scores within each domain of the PDQ-39 between the festination and non-festination groups.

RESULTS



DISCUSSION

In general, the festination group demonstrated higher scores on the PDQ-39 across all domains compared to the non-festation group, suggesting that the festination group may subjectively indicate a decrease in quality of life. However, sample sizes were small and no significant differences between the festination and non-festation groups were revealed. Further studies are needed with larger sample sizes to fully characterize differences among those persons with PD that demonstrate festination of repetitive finger movements and those that do not. Continued research in this area may help guide diagnosis and potential therapeutics.

ACKNOWLEDGEMENTS

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