

The Tendon Reflexes on the Performance of Flanker Task in the Subjects of Cerebrovascular Accidents

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Abstract : Background: Cerebrovascular Accidents (CVA) cause abnormal or asymmetrical tendon reflexes contributing to motor impairments. Since the tendon reflexes are mediated by the spinal cord, their effects on cognitive performances are overlooked. This study aims to find the contributions of tendon reflexes on the performance of the Flanker task. Methods: A total population of 46 mixed subjects with movement disorders were recruited for the study. Deep tendon reflexes (DTR) of the biceps, triceps and brachioradialis were assessed for both upper extremities. Later, the Flanker task was performed on all the subjects, and the mean Reaction Time (RT) along with both the congruent and incongruent stimuli were evaluated. For the final analysis, the Kruskal Wallis test was performed to see the difference between the DTR and the performance of the Flanker Task. Results: The Kruskal Wallis test results showed a significant difference between the DTR scores, $X^2(2) = 11.328$, $p = 0.023$ with the mean RT of the flanker task and $X^2(2) = 9.531$, $p = 0.049$ with mean RT of the Incongruent Stimuli. Whereas the result found a non-significant difference in the mean RT of the Congruent Stimuli. Conclusion: Each DTR score is distributed differently with the mean RT of the flanker task and for the incongruent stimuli as well. Therefore, the tendon reflexes in PD may be contributing to the performance of the Flanker Task and may be an indicator of abnormal cognitive performance. Further research is needed to evaluate how the RTs are distributed with each DTR score.

Keywords : cerebrovascular accidents, deep tendon reflexes, flanker task, reaction time, congruent stimuli, incongruent stimuli

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