TRAINING OF DRIVING IN INDIVIDUALS WITH RELAPSING-REMITTING MULTIPLE SCLEROSIS (MS)

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Introduction

- We found a few studies on retraining of cognitive abilities in individuals with MS to improve performance on other activities of daily living, but none on retraining of impaired skills necessary to improve their driving performance.

Objective

- To investigate the feasibility of using a simulator-based program to retrain driving-related skills in individuals with MS.

Hypothesis

- There will be improvements in some visual and cognitive tests, and on a standardized on road test after five hours of training.

Methods

Study design

- A pre- post- test study design

Participants

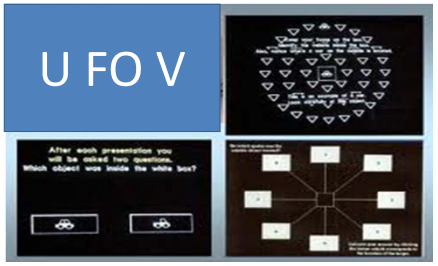
- 36 individuals with relapsing-remitting MS, age = 46 ± 11 years, 30 females, and EDSS between 1 and 7

Protocol

- Post-training motor, visual, cognitive, and on-road evaluation
- 5 hrs training in a driving simulator (1 hr/session/wk x 5 wks)
- Post-training motor, visual, cognitive, and on-road evaluation

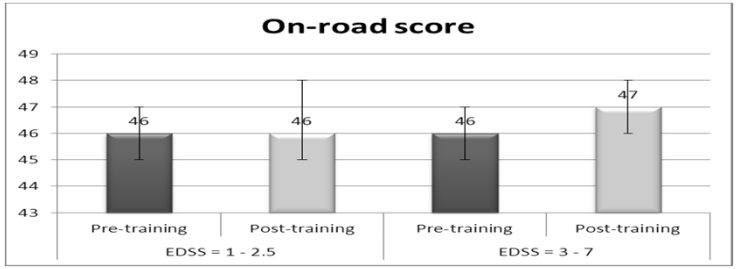
Data analysis

- Chi-Square, unpaired t-test or Wilcoxon rank sum tests
- Generalized Estimating Equations



Results

- Improvements on visual test of color perception
- Cognitive tests of mental flexibility and processing speed, attention, and visuo-spatial skills
- Driving skills including checking the blind spot, speed control and following
- Those with EDSS = 3 – 7 improved on executing left turns



Discussion

Despite minimal deficits, participants with MS (EDSS < 3) also benefitted from driving training. Most benefits were, however, observed in participants with MS (EDSS 3 – 7).

Improvements cannot be solely attributed to training effect because of the absence of a control group, practice effect, and continuation of other daily activities.

Conclusion

It is feasible to use a driving simulator to retrain driving-related visual and cognitive skills in individuals with MS, particularly those with EDSS = 3 – 7.

Acknowledgement

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