Jun 27th, 12:00 AM

Determinants of Performance on Specific On-Road Skills in Multiple Sclerosis

Abiodun E. Akinwuntan
School of Health Professions, University of Kansas Medical Center, Kansas City, KS

Hannes Devos
School of Health Professions, University of Kansas Medical Center, Kansas City, KS

Deborah Backus
Eula C. and Andrew C. Carlos MS Rehabilitation and Wellness Program, Shepherd Center, Atlanta, GA

Follow this and additional works at: https://ir.uiowa.edu/drivingassessment

DETERMINANTS OF PERFORMANCE ON SPECIFIC ON-ROAD SKILLS IN MULTIPLE SCLEROSIS

Abiodun E. Akinwuntan[1], Hannes Devos,[1] Deborah Backus[2]

[1]School of Health Professions, University of Kansas Medical Center
Kansas City, KS
[2]Eula C. and Andrew C. Carlos MS Rehabilitation and Wellness Program, Shepherd Center, Atlanta GA

E-mail: aakinwuntan@kumc.edu

PAPER NOT AVAILABLE
ABSTRACT

Summary: In this prospective cross-sectional study, we investigated the cognitive, visual, and motor deficits underlying poor performance during on-road driving in 102 individuals with multiple sclerosis (MS). Thirteen specific skills categorized into hierarchic clusters of operational, tactical, visuo-integrative, and mixed driving were assessed during the on-road evaluation. Stepwise regression analysis identified the off-road skills that influenced overall performance on the on-road test and in each cluster. Study results showed that visuospatial function (p=0.002), inhibition (p=0.008), binocular acuity (p=0.04), vertical visual field (p=0.02), and stereopsis (p=0.03) together accounted for the highest variance in total on-road score (R^2=0.37). Attentional shift (p=0.0004), stereopsis (p=0.007), glare recovery (p=0.047), and use of assistive devices (p=0.03) best predicted the operational cluster (R^2=0.28). Visuospatial function p=0.002), inhibition (p=0.002), reasoning (p=0.003), binocular acuity (p=0.04), and stereopsis (p=0.005) best determined the tactical cluster (R^2=0.41). The visuo-integrative model (R^2=0.12) comprised binocular acuity (p=0.007) and stereopsis (p=0.045). Inhibition (p=0.0001) and binocular acuity (p=0.001) provided the best model of the mixed cluster (R^2=0.25). These results provide more insights into the specific impairments that influence different dimensions of on-road driving and may be used as a framework for targeted driving intervention programs in MS.

ACKNOWLEDGMENT

Supplier

The original and full version of this paper can be found in the November 2016 edition of the journal of ARCHIVES OF PHYSICAL MEDICINE AND REHABILITATION MEDICINE.