

Driving and Cognitive Impairment: Analysis of On-road Functional Task Performance

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Biography

Angela gained a Bachelor of Applied Science in Occupational Therapy and graduated from the South Australian Institute of Technology in 1987. In 1998, continuing a diverse clinical career, she commenced a full time commitment at the School of Occupational Therapy as the Clinical Director of the then newly established Driver Assessment Rehabilitation Service (DARS). Her role has been to provide direct service provision to clients, secure funding, promote and develop the service growth and to develop a research profile. The service has also collaborated with key stakeholders and the occupational therapy program to create the first online Professional Certificate of Occupational Therapy Driver Assessment.

Angela commenced her "Masters by Research / Occupational Therapy" on the topic of driving and dementia in 2002. Her research builds upon a federally funded research project titled "Dementia and Driving" conducted by the Repatriation General Hospital Memory Disorders Unit and the Centre for Rehabilitation and Ageing Studies in SA. Her role in the project was to gather all the prospective on-road data for use as the outcome measure. Her research is focusing on the on road performance of the participants related to driving task analysis.

Abstract

This paper presents results of a "work in progress" project, addressing a research objective that seeks to create a deeper understanding of the on-road performance of drivers with cognitive impairment. The method is a quantitative statistical analysis of performance and error outcomes. Data has been sourced from a prospective study of the occupational therapy set route on-road assessment results of 114 people. The data has been divided into four outcome groups; route completed / pass, route completed / fail, non-completed / pass and non-completed / fail. Additionally the outcome scores have been clustered into subsets of low, moderate and high density for each individual drive. Outcomes have been compared to a number of variables including level of cognitive deficit, age and gender. The route has been coded and defined in regard to task elements and complexity. The observed and rated human performance elements of each driving task have been allocated a nominal code. The number of errors committed per driver have been quantified and given a raw score, with subsequent calculations of differences between groups. The error types have been thematically clustered, e.g. hazardous or scanning error. By entering the data into a computerised statistical package it has been possible to objectively identify which driving tasks the drivers were most often able to perform consistently or safely and those in which performance was rated by an occupational therapist and a driving instructor as absent or unsafe. Preliminary analysis from this study has identified interesting results in a number of scenarios that are strongly associated with some published findings in the field of accident research. This research is being conducted as an adjunct to the now completed SA Repatriation General Hospital, Memory Disorders Study Unit Dementia and Driving Clinical Trial previously presented at the Road Safety Conference in 2000.