



Service Priorities and Programmes
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Brake reaction time assessment for professional driver in work rehabilitation service of occupational therapy

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Introduction

In NTWC, there is a growing need in rehabilitation service for professional drivers. The number of new occupational therapy referrals for that population increased from 7% of the total referrals in 2008(69 new cases) to 13% of the total referrals in 2011(201 new cases). In driving rehabilitation program, assessment is composed of off-road and on-road components. According to Unsworth et. al. (2012), a standardized off-road assessment battery that including physical, sensory, cognitive and perception assessments can effectively reflect the driving skills required for functionally impaired drivers and showed excellent predictive validity (82.6%) for on-road assessment. Developing off-road assessment battery is, therefore, a key step in the whole driving rehabilitation process. Car brake reaction time testing is one of the major components in off-road driving assessment.

Objectives

The objective of this survey is to explore the impact on foot brake reaction time of professional drivers after sustaining injury.

Methodology

All professional drivers referred for work rehabilitation service were assessed on their foot brake reaction time using the Car Braking Reaction Tester (CBRTv2). Every patient took repeated trials & the mean reaction time taken was compared with the data from Road Safety Authority in United Kingdom (2007).

Result

38 samples were recruited & they were stratified into different diagnostic groups. The Average brake reaction time was: Lower limb conditions (0.63second SD 0.13), Upper limb conditions (0.49second SD 0.08), Spinal conditions (0.78second SD 0.28), Medical conditions (0.58second SD 0.14), and multiple conditions (0.46second SD 0.05) Discussion: The result of spinal conditions group showed longer brake reaction time & distance in comparing with the data from UK Road safety authority (the average reaction distance for vehicles running at 50kmh is 9.2m, and those running at 80kmh being 14.7m.) Moreover, samples suffering from lower limb conditions took longer time to react in comparing with the control group. Conclusion Comprehensive

off-road assessment battery reflecting the functional driving skills is the key component in work rehabilitation for professional drivers. The brake reaction time testing can effectively evaluate the patient's disability resulted from various medical conditions & indicating needs of further rehabilitation & return to work considerations.