Making Assistive Technology and Rehabilitation Engineering a Sure Bet

Comparison of Powered Wheelchair Driving Skills in Novice and Expert Participants Using a Data Logging System

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ABSTRACT

For some individuals who can no longer ambulate independently, the powered wheelchair (PW) becomes a valuable means of locomotion. However, the PW does pose dangers to the user and those in the vicinity if operated improperly. Thus, operating a PW with some degree of proficiency addresses the important issue of safety. This study recruited both experience and novice PW users. It compared their performance after the completion of skills/tasks from the Wheelchair Skills Program (WSP ver.4.1). Measurement outcomes included the mean number of joystick movements, time to complete task, and joystick direction variability. In seemingly simpler tasks, the expert group performance was comparable to that of the novice group. In more difficult and spatially confined tasks, the expert group required much less joystick movements for task completion, and completed tasks in approximately half the time with respect to the novice group.

KEYWORDS

Powered wheelchair, wheeled mobility, wheelchair skills, training, assessment, data logger

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