THE USE OF KINECT TO NAVIGATE A VIRTUAL EXERCISE ENVIRONMENT BY PEOPLE POST-STROKE OR WITH CEREBRAL PALSY

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ABSTRACT

People with mobility impairments encounter numerous barriers to meeting exercise recommendations. One approach to facilitate exercise is through interaction with virtual reality, requiring navigation through a virtual environment. The present study assessed Microsoft Kinect as an interface for choosing between multiple routes within a virtual environment through body movements (arms, torso, shoulder, or head). The approach was tested on individuals post-stroke or with cerebral palsy (CP). Outcomes including success rate and questionnaire feedback were evaluated within- and between-subjects. The results showed that all movements were viable for individuals post-stroke, while hand extend/raise and head nod were most viable for those with CP. Overall, this study demonstrated that Kinect may be a useful tool for persons with mobility impairments to interface with virtual exercise environments.

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