

Describing and classifying virtual reality systems for use in paediatric motor rehabilitation

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Background: The use of Virtual Reality (VR) in paediatric rehabilitation is an exciting and rapidly developing area of research and practice. While use of commercially available VR systems such as the Nintendo Wii[®] and Sony Eye Toy[®] is intuitively appealing to clinicians and children, rehabilitation-specific systems are also being investigated. However, there is currently little information available to describe the ability of these systems to address therapeutic goals relating to rehabilitation of motor skills and abilities.

Aims:

1. To describe the specific qualities of VR systems reported in the paediatric motor rehabilitation literature
2. To propose a classification framework of VR systems to assist therapists in making informed clinical decisions

Methods: A comprehensive electronic literature search of publications or conference proceedings published between 1995 and December 2009 was completed. Systems were described according to key features, and then categorised according to system features and user requirements.

Results: Twenty papers describing 6 VR systems were retrieved and are included in the analysis. The descriptive analysis describes each system according to 12 features relating to user, system and context variables. In the classification framework, 3 features are identified as common to all VR systems and 7 categories are established that describe system and user variables, enabling differentiation between systems.

Conclusions: This paper organizes available information about VR systems that are currently available for clinical use.