Title: Toward best practices in virtual reality and active video game use within pediatric rehabilitation: Competencies, clinical decision-making and outcome measurement

Course Description:

Virtual reality (VR) and active video game (AVG) use in pediatric rehabilitation is gaining momentum as the evidence builds and new rehabilitation-specific platforms join commercial gaming systems in clinical accessibility. However, research demonstrates that therapists require training, support and clinical tools to facilitate their adoption of VR/AVGs. This course provides an overview of the theory, evidence, competencies and resources required by clinicians to effectively and sustainably integrate VR/AVGs across pediatric clinical practice settings. Course content specifically targets the VR/AVG learning needs of clinicians identified by a recent national research survey.

Participants will receive an overview of the most current evidence on rehabilitation-specific and commercially available systems for pediatric neuromotor conditions and of the competencies required for effective treatment using VR/AVGs. A clinical decision-making framework that provides guidance on the selection of VR/AVG systems and games that are congruent with client and therapist needs, goals and abilities will be applied through clinical case examples. The theoretical rationale for VR use with respect to motor learning will be applied throughout the course. Available tools to support the development and evaluation of these competencies, including online knowledge translation resources, will be highlighted, along with the outcome measures that are suitable for evaluating the effectiveness of VR/AVG interventions.

Course Learning Objectives

Upon completion, participants will be able to:

1. Understand the evidence and theory underlying the clinical application of virtual reality (VR) and active video games (AVG) in pediatric rehabilitation.

2. Describe the competencies required by clinicians to implement and evaluate VR/AVG-based therapy, including:
   a. System selection, set-up and operation
   b. Goal-setting and treatment planning

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c. Treatment implementation and monitoring
d. Transferring skills to real-life functional activities
e. Evaluating outcomes

3. Apply a clinical decision-making framework to guide VR system and game selection, with consideration of therapeutic requirements, therapist competencies, client goals and environmental factors.

4. Identify existing online resources to support competency development and clinical integration of VR and active video game technology.

**Instructional Level:**

Basic________ Intermediate________ Advanced________ Multiple_____ X____

**Instructional Format** *(indicate approx. percentage)*

☐ X Lecture 100  ☐ Lab  ☐ Combination ____________________________

**Tentative Outline of time and content:**

1. Large group didactic learning: Present background, evidence, theory and overview of competency framework– 45 minutes

2. Small group collaborative learning – participants will apply concepts and decision-making framework to case scenarios – 20 minutes

3. Large group didactic learning – Overview of resources and tools; Summary/wrap-up – 15 minutes

4. Interactive Q&A – 10 minutes

Handouts provided will include the competencies, decision-making framework, motor learning strategies for VR, outcome measures grid, and list of online VR resources and network contacts.
Key References:


