

Impact of Virtual Reality (VR) Rehabilitation in Improving Balance, Mobility and Exercise Motivation of Patients in Acute Wards

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Why VR @ Rehab ?

- ✓ *more realistic and enhanced sensory perception experience*

Objective

To evaluate the impact of bedside VR rehabilitation in improving balance, mobility and exercise motivation of patients in acute wards

- ✓ *simulated training of functional tasks*
- ✓ *cycling is pre-ambulation training*



How VR @ Rehab ?

Patients who were aged over 18, assisted or independent walkers before admission, medically stable and suitable for out of bed exercise

Control group (n=4)

*Daily routine
ambulatory training
+
Cycling exercise*

Study group (n=4)

*Daily routine
ambulatory training
+
Cycling exercise
+
Head-mounted VR
device playing karts
racing game*

Outcome measures:

- 1. Walking distance*
- 2. Functional reach distance in sitting*
- 3. Functional reach distance in standing*
- 4. Berg Balance Scales (BBS) scores*
- 5. Exercise duration*



How VR @ Rehab ?



VR @ Rehab _ Effective?

<i>Outcome Measures</i>	<i>Study Group</i>	<i>Control Group</i>	<i>P Value</i>
<i>Walking distance</i>	<i>96.00±66.51m</i>	<i>10.00±20.00m</i>	<i>p=0.029**</i>
<i>Functional reach distance (sitting)</i>	<i>12.75±14.55cm</i>	<i>1.00±1.15cm</i>	<i>p=0.057*</i>
<i>Functional reach distance (standing)</i>	<i>8.25±6.45cm</i>	<i>0.50±1.00cm</i>	<i>P=1.000</i>
<i>Berg Balance Scales (BBS)</i>	<i>13.25±10.31</i>	<i>1.25±2.50</i>	<i>p=0.057*</i>
<i>Exercise duration</i>	<i>900.92±340.74s</i>	<i>605.00±243.41s</i>	<i>P=0.200</i>

***significant *tends to be significant*

Conclusion:

Bedside VR rehabilitation has potential benefits in improving balance, mobility and exercise motivation of patients in acute wards. Further studies with larger patient population are warranted.

Reference:

1. Yin C, Hsueh YH, Yeh CY, Lo HC, Lan YT. A Virtual Reality-Cycling Training System for Lower Limb Balance Improvement. BioMed Research International, vol. 2016, 2016. <http://dx.doi.org/10.1155/2016/9276508>

