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)  
Study group (n=4)

Daily routine
ambulatory training  
+  
Cycling exercise

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?

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

**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: