Is video assisted training in hoist skills as effective as face-to-face training?

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• Development and evaluation of the DVD training tool
Literature Review

- Person – Environment – Occupation (AOTA, 2008)

- Assistive technology (Benton and Ellis, 2008)

- Graduating therapists – skills in using and training in hoists (WFOT, 2002; Therapy Project Office, 2008).
Teaching Clinical Skills

• Apprenticeship approach:
  – See one - do one (Hauser and Bowen, 2009)
  – Opportunistic and Unstructured (Irby, 1995)
  – Balance needs of patient and student (Spencer and Pearson, 2010)

• Traditional approach:
  – Passive learning environment (Scaffa & Wooster, 2004).
  – Massed practice (Moulton et al., 2006)
  – Sensitive to increasing class sizes (Spencer & Pearson, 2010).
• DVD can be as effective as face to face training in teaching clinical skills (Nousiainen et al. 2008; Lee et al., 2007; Xeroulis et al., 2007; Batcheller et al., 2000).

• Skills – suturing, knot tying, needle insertion, interview skills

• Video technology – accessible, enabling the learning refresh material and keep up skilled (Williams et al. 2009)
DVD tool

- Developed with funding from NAIRTL and NUI Galway
- 8 minutes long
- Demonstrates a transfer from a height adjustable bed to a chair
Research Questions

1. Is there a difference in ergonomic performance pre-training when compared with post-training?
2. Is there a difference in ergonomic performance between instructional DVD and traditional face to face training groups?
3. Is there a difference in participant’s levels of satisfaction with the teaching experience between the training groups?
4. Is there a correlation between levels of confidence and posture during the transfer, post training?
Methodology – research design

Pre-training (n=12)
Rapid Upper Limb Assessment (RULA)

DVD Assisted training (n=6)
Face to face training (n=6)

Post-training (n=12)
Rapid Upper Limb Assessment (RULA)
Satisfaction Measure
Confidence Measure
Methodology – measurement tools


<table>
<thead>
<tr>
<th>RULA Grand Score</th>
<th>Indicators</th>
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<tr>
<td>1 or 2</td>
<td>Posture is acceptable if not maintained</td>
</tr>
<tr>
<td>3 or 4</td>
<td>May require changes</td>
</tr>
<tr>
<td>5 or 6</td>
<td>Further investigation and changes needed soon</td>
</tr>
<tr>
<td>7</td>
<td>Changes required immediately</td>
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• Satisfaction scale

• Confidence scale
Data Collection
Data Collection
1.5 hour class

- Small lecture/introduction
- Problem solving task – determine most ergonomic method of moving a person from bed to chair
- Student Presentation of solution
- **Facilitator live demonstration or DVD assisted training**
- Student Practice
- Exercise – identification of steps
Results – Question 1

Figure 3: Grand RULA Scores of Participants Pre and Post Training

<table>
<thead>
<tr>
<th></th>
<th>Pre-training</th>
<th>Post-training</th>
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<tbody>
<tr>
<td>Right</td>
<td>4.5</td>
<td>4.5</td>
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Results – Question 2
Results

• Time to complete transfer
  – Pre 514 seconds
  – Post 458 seconds
• No significant difference between groups
• Positive correlation between confidence and risky posture
• Similar confidence between groups
Discussion

- DVD learning tools can be as effective as face to face teaching

- Contributing factors – quality of video, skill of facilitator, transfer of knowledge (Spencer and Pearson, 2001)

- Video technology – accessible, enabling the learning refresh material and keep up skilled (Williams et al. 2009)
Limitations and Future Directions

• Immediate assessment of acquisition of skills
• Long term evaluation of retention of skills
• Larger sample size – statistically significant results
• Varying research methodologies – students have access to DVD outside training
References

Thank you