Development and Implementation of a Hybrid Wheelchair Workshop for Clinicians in International Settings

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International Society of Wheelchair Professionals

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Ability Meets Mobility

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Wheelchair Sector Worldwide

- 112 million people require a wheelchair.
- Only 5-15% have access.
- 96 million people are in need.
Inappropriate use of wheelchairs

Secondary health conditions

Economical impact

Figure 3-4. WHO (2012)

Introduction

5 Mukherjee G. Disability and Rehabilitation. 2005

6 Wheelchair service training package - Basic level. WHO.2012.

Disparities in health outcomes

Justification

• Wheelchair users in low/middle-income countries are at high risk of developing secondary complications and premature death due to improper wheelchair provision by untrained clinicians¹,⁵-⁷

Hypothesis

• Flexible training methodologies could increase the number of clinicians trained and prevent secondary complications in wheelchair users.

¹ Guidelines on the provision of manual wheelchairs in less resourced settings. WHO; 2008
⁵ Mukherjee G. Disability and Rehabilitation. 2005
⁶ Wheelchair service training package - Basic level. WHO.2012.
Specific Aims

• Implement and evaluate the **Hybrid Course Workshop** at an international conference with a representation of physical therapists (PT), occupational therapists (OT), and prosthetics and orthotics (P&O).
Methods

- Quasi-experimental, pre- and post-assessment design.
  - Oaxaca, Mexico, 7th Forum United Frontiers.
- Study guided by stakeholders input.
- Convenience sampling method.
  - PTs, OTs, P&Os, from international settings
Training Methodology

Pre-assessment

ISWP Test

Hybrid Course

12 modules

8 hours

Post-assessment

ISWP Test

Figure 1. Hybrid Pre-Conference Training Methodology
Hybrid Training Course Structure

A. Core Knowledge & Wheelchair Service Steps

A.1: Wheelchair users
A.2: Wheelchair services
A.3: Wheelchair mobility
A.4: Sitting upright
A.5: Pressure sores
A.6: Appropriate wheelchair
A.7: Cushions
A.8: Transfers
A.9: Referral and appointment
A.10: Assessment
A.11: Assessment interview
A.12: Physical assessment

B. Wheelchair Service Steps

B.5: Prescription (selection)
B.6: Funding and ordering
B.7: Product (wheelchair) preparation
B.8: Cushion fabrication
B.9: Fitting
B.10: Problem solving
B.11: User training
B.12: Maintenance and repairs
B.13: Follow up
B.14: Putting it all together

Figure 2. Hybrid Pre-Conference Training Course structure and delivery method
Group’s results: Knowledge

Table 1. Pretest and posttest scores of participants

<table>
<thead>
<tr>
<th>Profession</th>
<th>N</th>
<th>Pretest</th>
<th>Posttest</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>Mean</td>
</tr>
<tr>
<td>Total participants</td>
<td>22</td>
<td>50.95</td>
<td>6.15</td>
<td>59.68</td>
</tr>
</tbody>
</table>

*paired t-test significant at the <0.05 level
Results by groups: Graph

Pass

Fail

N=22
## Results by professions: Knowledge

Table 2. Pretest and posttest scores of participants grouped by profession

<table>
<thead>
<tr>
<th>Profession</th>
<th>N</th>
<th>Pretest</th>
<th></th>
<th>Posttest</th>
<th></th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>Mean</td>
<td>Standard Deviation</td>
<td></td>
</tr>
<tr>
<td>Physical Therapy (PT)</td>
<td>4</td>
<td>49.75</td>
<td>5.85</td>
<td>58.25</td>
<td>2.36</td>
<td>0.027*</td>
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<tr>
<td>Occupational Therapy (OT)</td>
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<td>54</td>
<td>5.50</td>
<td>61.80</td>
<td>4.42</td>
<td>0.001*</td>
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<tr>
<td>Prosthetics &amp; Orthotics (P&amp;O)</td>
<td>5</td>
<td>44.40</td>
<td>1.95</td>
<td>54.80</td>
<td>10.83</td>
<td>0.070</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>53.33</td>
<td>6.03</td>
<td>62.67</td>
<td>2.31</td>
<td>0.181</td>
</tr>
</tbody>
</table>

*paired t-test significant at the ≤0.05 level
Results by professions: Graph

N=22

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Limitations

• Study design
• External validity
• Sampling method

Conclusions

• Hybrid Workshop proved to be an effective training methodology.
• International conferences seem to be a feasible venue to offer internationally recognized and standard training opportunities.
Next Steps

• Develop and test other learning methodologies (online)
• Replicate the study in other international conferences.
• Increase the sample size.

Picture 1. Group’s photo at the end of the training
For more information & to stay up to date!

• Membership
  • www.wheelchairnet.org

• Social Media
  • @ISWPorg

• Yohali.Burrola@pitt.edu