Establishing the cultural equivalence of the Participation and Environment Measure for Children and Youth (PEM-CY) for use in Korea

Yunwha Jeong, BSc(OT), PhD
Department of Occupational Therapy, Jeonju University
May 24th, 2018
1. Background
2. Methods
3. Results
4. Discussion
Participation is an ultimate goal of occupational therapy (Hammingsson & Jonssons, 2005; Law 2002) and many participation measures have been developed (McConachie et al., 2006; Raghavendra, 2013; Ziviani et al., 2010).

Obtaining the most comprehensive information about Korean children’s participation and environmental impact on participation remains difficult.

PEM-CY (Coster, Law, & Bedell, 2010) is an appropriate measure to be cross-culturally adapted in Korea.
Methods

Objectives:
1) To develop the Korean version of the PEM-CY (KPEM-CY),
2) To examine the reliability and validity of the KPEM-CY for its utility in the Korean cultural context

Step 1: Cross-cultural Translation of the PEM-CY to Korean
Step 2: Completing the Korean PEM-CY
Step 3: Collecting the data from children with and without disabilities
Step 4: Psychometric evaluation of the Korean PEM-CY

- Participation and Environment Measure for Children and Youth (PEM-CY): a parent-report survey measure
- Developed in North America for children and youth aged 5 to 17 years

(Coster, Law & Bedell, 2010; Coster et al., 2011)
Participation frequency

The extent of involvement

Desire to change

3 settings: HOME, SCHOOL, COMMUNITY
Results

Step 1-2: Development of KPEM-CY

1. Pre-review of participation items by Korean experts working with children with disabilities
2-3. Translation of the PEM-CY to Korean
   - Back-translation
4. Expert committee review of all translated versions
5. Cognitive interview with 10 Korean parents of children with disabilities
6. Final review of the pre-final version of the KPEM-CY by few parents

(Beaton et al., 2000; CanChild Centre for Childhood Disability Research, 2014)

76% of items in the participation section and 29% of items in environment section were revised to improve their fit with the Korean culture.
Step 3-4: Evaluation of Psychometric properties of KPEM-CY

**Research questions**

Reliability: (1) To what extent is *internal consistency* of the Korean version of the PEM-CY? (2) To what extent is *the test and retest reliability* of the Korean version of the PEM-CY?

**Known group validity**: Are there differences in the participation patterns and environmental factors of children (1) *with and without disabilities*; (2) of different *ages*, and (3) of different *genders*?

**Design & Participant**

- Prospective cohort study
- 80 parents of children with disabilities and 104 parents of typically developing children aged 5-13 years, living in a city of Daejeon, South Korea

**Data analysis**

1. **Reliability**: Cronbach’s alpha and the ICC$_{2,1}$
2. **Known group validity**: (1) Three-way ANOVA including disability, age, and gender, (2) Two-way ANOVA including disability and age (main analysis), (3) Sidak multiple comparison test
Reliability

- Internal consistency: moderate to excellent (0.67-0.92) in all settings
- Test-retest reliability: moderate to excellent (0.53-0.95)

<table>
<thead>
<tr>
<th>Section</th>
<th>Summary score</th>
<th>Home</th>
<th>School</th>
<th>Community</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PARTICIPATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>0.95</td>
<td>0.82</td>
<td>0.87</td>
<td></td>
</tr>
<tr>
<td>Involvement</td>
<td>0.78</td>
<td>0.85</td>
<td>0.83</td>
<td></td>
</tr>
<tr>
<td>Desire to change</td>
<td>0.61</td>
<td>0.44</td>
<td>0.69</td>
<td></td>
</tr>
<tr>
<td><strong>ENVIRONMENTAL FACTORS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Supports</td>
<td>0.53</td>
<td>0.40</td>
<td>0.35</td>
<td></td>
</tr>
<tr>
<td>Environmental Barriers</td>
<td>0.63</td>
<td>0.60</td>
<td>0.65</td>
<td></td>
</tr>
<tr>
<td>Helpfulness</td>
<td>0.74</td>
<td>0.77</td>
<td>0.69</td>
<td></td>
</tr>
<tr>
<td>Resources</td>
<td>0.68</td>
<td>0.68</td>
<td>0.63</td>
<td></td>
</tr>
<tr>
<td>Overall environmental supports</td>
<td>0.79</td>
<td>0.75</td>
<td>0.73</td>
<td></td>
</tr>
</tbody>
</table>

Note. Type 2,1 intra-class correlation coefficient

Known group validity

- Significant effect of **disability** and **age**, and their interaction effect
- Children with disabilities: lower participation frequency and more environmental barriers across 3 settings
- Parents of children with disabilities: a higher level of desire to change participation patterns of children with disabilities
- In community setting, as children became older,
  - a significant decrease in the extent of involvement, environmental helpfulness, and overall environmental supports
  - a significant increase in the environmental barriers
A reliable and valid Korean PEM-CY for Korean children with and without disabilities, aged 5 to 13 years

Specific participation patterns and environmental impact on their participation according to personal and environmental factors

Applying the Korean PEM-CY in clinical practice and research

Communication tool among OTs, other professionals, and the parents of children with disabilities

Utility in large-scale studies to examine similarities and differences in participation patterns and environmental factors across regions, cultures, and countries
References

Contact info.: yunwhajeong@gmail.com