Methods of Measuring Health Literacy of Children

Results from the systematic literature review of health literacy instruments for children and adolescents

&

Review of the HLS-EU-Q-47 for application in the MoMChild project population

Orkan Okan
**Project Background**

- The MoMChild project is a pretest study and started in March 2015 as part of the basic research stream of the German HLCA research consortium.

**Objective**

- Development, construction, application and validation of a health literacy instrument in a child population of 9 and 10 year old 4th grade pre-schoolers.

- First work blocks
  - Review of the literature
  - Review of the HLS-EU-Q for 9-10 year olds
Review of the HLS-EU-Q

Using two methods

1. Item-per-item and concept analysis
2. Using an adapted version of the 4-D Model (Forrest et al., 1997; Rothman et al., 2009)

<table>
<thead>
<tr>
<th>Pros</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>What</td>
<td>health information</td>
</tr>
<tr>
<td>Skills</td>
<td>access, understand, appraise, apply, make judgments, take decisions</td>
</tr>
<tr>
<td>Setting</td>
<td>everyday life</td>
</tr>
<tr>
<td>Domain</td>
<td>health promotion, disease prevention – including primary prevention</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cons</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain</td>
<td>health care</td>
</tr>
<tr>
<td>Population</td>
<td>adults &amp; adolescents vs. children</td>
</tr>
<tr>
<td>Method</td>
<td>self report</td>
</tr>
</tbody>
</table>
The health literacy 5-D-model for children and adolescents

- Not considering children`s ecological worlds, or their health socialisation processes in family or school life
- Reading and grammar level above 4th grade
- Some items are above the developmental stage
- Some tasks primarily taken by parents
- Missing child health and interest topics
- Illnesses unique to children
- Child-related social interaction for health promotion and peer communication
- Child demographics and poverty related aspects missing

Adapted 4-D-model (Forrest et al., 1997; Rothman et al., 2009)
Systematic review of the literature

Search Design: Data Source and Search Strategy I

Databases

PubMed
CINAHL
PsycNet
ERIC
FIS

Search Blocks

<table>
<thead>
<tr>
<th>Search Block I</th>
<th>Search Block II</th>
<th>Search Block III</th>
</tr>
</thead>
<tbody>
<tr>
<td>“health literacy”</td>
<td>“child**” “adolescent***” “youth***”</td>
<td></td>
</tr>
</tbody>
</table>
Systematic review of the literature

Search algorithm

\[ ((\text{health literacy}[\text{Title/Abstract}]) \ \text{AND} \ ((\text{child*}[\text{Title/Abstract}]) \ \text{OR} \ (\text{adolescent*}[\text{Title/Abstract}]) \ \text{OR} \ (\text{youth}[\text{Title/Abstract}])) \ \text{AND} \ ((\text{measur*}[\text{Title/Abstract}]) \ \text{OR} \ (\text{test*}[\text{Title/Abstract}]) \ \text{OR} \ (\text{tool*}[\text{Title/Abstract}]) \ \text{OR} \ (\text{instrument*}[\text{Title/Abstract}]) \ \text{OR} \ (\text{questionnaire*}[\text{Title/Abstract}]) \ \text{OR} \ (\text{assessment*}[\text{Title/Abstract}]) \ \text{OR} \ (\text{screen*}[\text{Title/Abstract}]) \ \text{OR} \ (\text{survey*}[\text{Title/Abstract}]) \ \text{OR} \ (\text{psychometric*}[\text{Title/Abstract}]) \ \text{OR} \ (\text{review*}[\text{Title/Abstract}])) \]

Eligibility

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>English, German</td>
<td>Any other language</td>
</tr>
<tr>
<td>Type of publication</td>
<td>Original publication, peer-reviewed journal, health</td>
<td>Non-original, non-peer reviewed, editorials, letters, theses, reports,</td>
</tr>
<tr>
<td></td>
<td>literacy instrument, development/validation/application</td>
<td>books, opinions.</td>
</tr>
<tr>
<td>Focus of study</td>
<td>Any study reporting on a general health literacy instrument</td>
<td>Context specific health literacy instrument, and any non-health literacy instrument</td>
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<tr>
<td>Study population</td>
<td>Children and adolescents (younger than 17 year old)</td>
<td>Any population 17 year old and younger</td>
</tr>
<tr>
<td>Setting</td>
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<tr>
<td>Country</td>
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</tbody>
</table>
Systematic review of the literature

• Unique instruments found **N=20**

• Looking at the methodology
  
  • **N=10** Performance-based assessment tools (PBA)
  • **N=8** Self-report tools (SR)
  • **N=1** Mixed tool using PBA and SR
  • **N=1** Method not described

Looking at the population

• **N=5** encompassing our age population
• **N=3** primary school, **N=2** secondary school
Systematic review of the literature

- Underpinning Health Literacy Concepts
  - Functional Health Literacy: 9
  - Communicative Health Literacy: 6
  - Critical Health Literacy: 4
  - Education/Curriculum/Topics: 8
  - Models/Concepts/Definitions: 6

- Age Groups and Schools
  - <=10 years: 5
  - >10 to 19 years: 15
  - 7/9 to 13 years: 3
  - Primary School: 3
  - Secondary School: 18
Systematic review of the literature

Health Literacy Components

- Writing: 1
- Reading: 4
- Understanding: 5
- Communication: 4
- Information Seeking: 13
- Goal Setting: 1
- Decision Making: 1
- Self Management: 1
- Numeracy: 3
- Knowledge: 7
- Stated Satisfaction: 1
- Critical Skills: 6
- Attitude: 3
- Self Efficacy: 2
- Behaviour: 2
- Health Status: 1
- Computational Skills: 1
- Apply: 1
- Confidence: 1
- Obtain: 1
- Process: 2
- Competence: 1
- Coping Skills: 1
- Capabilities: 1
Systematic review of the literature

Setting of Health Literacy Measurement

<table>
<thead>
<tr>
<th>Year of Measurement</th>
<th>Setting of Health Literacy Measurement</th>
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</thead>
<tbody>
<tr>
<td>2006</td>
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<tr>
<td>2007</td>
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<tr>
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<td>2013</td>
<td>2</td>
</tr>
<tr>
<td>2014</td>
<td>3</td>
</tr>
<tr>
<td>2015</td>
<td>1</td>
</tr>
</tbody>
</table>
Review of the HLS-EU-Q

- Difficult to use in 9-10 years old
- Domains, components or items can be adapted

Review of the literature

- 20 studies found, each used an instrument based on a different understanding of HL
- 5 including 9-10 year olds
- Components: information seeking, knowledge, critical skills, communication and understanding
- Framework: mostly (school) health education/promotion standards
- Lack of cultural competencies, developmental perspectives, interests, specific illnesses
- Only few studies have interviewed children/adolescents before developing the instrument
- Non of the studies involved children actively in the process of development

Implications

- Construction of health literacy and own instrument
- Dispositions, language, meaning making, child experiences and worlds
Stardate 1505.19112015.47

This is the End!

Thank you!