

## Adapting the HLS-EU questionnaire for children aged 9 to 10: Exploring factorial validity

Torsten Michael Bollweg

*TM Bollweg, O Okan, J Bröder, U Bauer, P Pinheiro*  
Faculty of Educational Science, Bielefeld University, Bielefeld, Germany  
Contact: torsten.bollweg@uni-bielefeld.de

### Background:

Health literacy (HL) in childhood has gained attention as an approach towards health promotion. Still, there is little evidence on HL of children, partly due to a lack of adequate assessment tools. This research gap was addressed by adapting and piloting the European Health Literacy Survey Questionnaire (HLS-EU-Q) for children aged 9-10.

### Methods:

HLS-EU-Q items were evaluated and modified. The adapted self-report questionnaire, including 26 items assessing self-reported HL, was used in a classroom survey among  $n = 907$  children attending fourth grade of primary school in North Rhine-Westphalia, Germany. Exploratory and confirmatory factor analysis (EFA and CFA) were performed to assess factorial validity.

### Results:

The theoretical factor structure of the HLS-EU model of HL (4 competence areas: accessing, understanding, appraising, applying health information) could not be replicated in EFA or CFA. EFA yielded a 6-factor model with one main factor (Eigenvalue 6.7; 25.6% explained variance), CFA showed strong correlations between the four latent factors, i.e. competence areas ( $r = .75-.92$ ), and marginal to moderate factor loadings (.38-.64).

### Conclusions:

This study is the first to adapt the HLS-EU-Q to measure self-reported HL of children aged 9 to 10. The results on the factorial validity of this adapted version of the HLS-EU-Q put into question whether the four competence areas that are theoretically distinct in the underlying model can be appropriately assessed by the applied form of self-report assessment, as they are practically and statistically interrelated. Further research is necessary to verify these findings, and to investigate the potential of alternative approaches of conceptualizing and measuring HL of children. Eventually, this research aims to contribute to an advancement of this field of research and a solid evidence base on the HL of children that can inform political action and interventions to improve children's health through HL promotion.