The Health Information Literacy Knowledge Test (HILK): Construction and results of a pilot study

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Background

- Health information literacy (HIL) comprises a set of abilities needed to recognize a health information need, search and evaluate relevant health information, and to use this information to make appropriate health decisions
- Relevant for people’s autonomy regarding health decisions
- Everyday HIL is usually assessed by self-report measures or measures of basic reading skills and numeracy (e.g., TOPHLA, Parker et al., 1995; REALM, Davis et al., 1993)
- So far no validated achievement test exists in the international research literature which is not focused on the academic context
- Need for a knowledge test which goes beyond basic literacy and which is appropriate for adults of different age groups with middle to higher levels of education (adequate level of reading skills is assumed)
- Importance of a knowledge test for research purposes: measurement of HIL in the general population to identify people with low HIL, determine a need for training programs of HIL and evaluate such interventions

Aims

- Development of an economic test of knowledge about seeking and evaluating everyday health information of adults based on a skill decomposition
- Empirical construction in two steps:
  1) Expert study: examination of the correctness of the answers and refinement of item formulations
  2) Pilot study: considering the test based on a psychometric properties of the items and first examination of its validity

Test Construction

- Construction of items was based on a skill decomposition derived from models of information problem solving as well as general models of information literacy (e.g., J. P. Bränd-Gruwel et al.; 2009; Big6, Eisenberg & Berkowitz, 1990)
- Skill decomposition (Four skills with two subskills each):
  1. Definition of information need (1.1 Define the information problem / 1.2 Identify information needed),
  2. Planning the search (2.1 Knowledge of information resources / 2.2 Determine search strategy),
  3. Accessing information sources (3.1 Identify type of source / 3.2 Gain access [full text]),
  4. Scanning information (4.1 Assessment of relevance and quality / 4.2 Orientation within source)
- Questions require participants, e.g., to recognize adequate sources to satisfy a specific information need, or to evaluate health materials with regard to their relevance or quality
- The test focuses on different types of information sources and providers, e.g., books, libraries, and the internet
- Multiple choice questions with three answer options and an “I don’t know”-category (number of correct answers ranging from 0 to 3)
- Example items:

Questions

Additional materials provided in a supplement

Pilot Study

- Subjects and Procedure:
  N = 138 psychology students, 70.3% Bachelor, 28.3% Master
  Age: between 18 and 33 years (M = 22.61, SD = 2.71)
  87% female and 13% male
  Data was collected in computer laboratories or classrooms at the University of Trier in groups of up to 20 students; the sessions took between 90 and 120 minutes
  Participants were paid for their participation
- Materials:
  HILK: revised version with 53 items
  Test of domain-specific scholarly information literacy (Geisler et al., 2013; k = 35)
  Battery of self-report questionnaires assessing:
  1) self-efficacy beliefs related to health-related information: SWE-B-18 & eHeALS
  2) current health status (SF-12 – Mental / SF-12 Physical) (Küller & Kirchberger, 1999; k = 12)
  3) health related control beliefs (FEGK) (Ferring & Filipp, 1989; k = 29)
  4) health anxiety: MK-HAI (Bader & Wittfeld, 2006; k = 1.4)

Results

- The HILK could be successfully shortened to a 24-item version based on psychometric properties of the items (item-total correlations range from r = .11 to .38)
- Reliability:
  - The shortened version demonstrates acceptable internal consistency (Cronbach’s Alpha = .71)
  - Cutman’s Lambda 6 of h = .78 as a more suitable measure of reliability for heterogeneous constructs
  - Validity and associations with other measures:
    - The HILK is moderately correlated with the scholarly information literacy test for psychology (see Table 1 for correlations)
    - Significant correlation with a measure of self-efficacy beliefs related to health-related information: SWE-B-16, but not with self-efficacy beliefs focused on the internet and electronic resources (eHeALS)
    - No significant correlations found between achievement in the HILK and health related control beliefs, health anxiety and the current health status
    - Significant group difference in HILK test performance between Bachelor (M = 29; SD = 8.0) and Master students (M = 32; SD = 11) (t(134) = .69; p < .05, one-tailed)

Table 1: Correlations between HILK test performance and self-efficacy beliefs related to health-related information (SWE-B-16 and eHeALS)

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* p < .05, ** p < .01 (one-tailed)

Conclusion

- The 24-item version of the HILK is an economic test of knowledge about seeking and evaluating everyday health information which may be used for research purposes
- More evidence is needed before applying it in research:
  - Studies needed with people from different age groups, fields of studies, and without academic background
  - Stronger indicators of validity needed, e.g., search tasks or measures of the general cognitive level

References


Büning, H., & Kühnle, W. (1998). Improving your orientation in scientific articles - answering the following questions: How can I reach the point you are looking for? (German). Göttingen: Hogrefe-Verlag.


Göttingen: Hogrefe Verlag.

Gruwel et al., 2009; Big6, Eisenberg & Berkowitz, 1990)

HAI).


3rd European Health Literacy Conference, November 17-18, Brussels