CONFERENCE ABSTRACT

Validation of the eHealth Literacy Assessment tool (eHLA)

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Introduction: eHealth has the potential to support integrative care by increasing citizens' involvement in own health, but to succeed, one must understand the end-users, their capabilities and resources for engaging with technology. eHealth literacy describes the interaction between users and systems in a health context and was first defined in 2006 by Norman & Skinner, who developed a related questionnaire [1].

Based on a need for more comprehensive measures, a process was initiated in 2010 to identify existing, suitable instruments that could be combined to evaluate eHealth literacy by using digital and health literacy. This resulted in a suite named eHealth Literacy Assessment toolkit (eHLA) [2]. The study aims to further develop and validate eHLA as a tool for measuring eHealth literacy.

Methods: In the beginning of 2015, eHLA included seven tools of which four were based on principles from existing instruments [3][6], one used a selection of items from an existing instrument [7] and two were developed from scratch.

Three tools related to health literacy; Functional Health literacy [3], Health literacy Self assessment [7] and Health literacy performance. Four tools related to digital literacy; Computer familiarity [4], Computer confidence [5], Computer incentive and Computer performance [6].

The digital performance tool was removed before Step 1 in order to allow for self-administration.

Step 1: Several tools were originally designed for a narrow target population (e.g. college students, veterans) and needed adaption to fit a broader target population. The adapted tools were tested in cognitive interviews [8].

Step 2: An electronic version of eHLA was distributed on social media through authors' networks.

Step 3: Further adjustments were tested in cognitive interviews.

Step 4: Validation in a sample of more than 300 people _(in progress, November 2015)_

Step 5: Finalized toolkit _(expected by the start of 2016)_

Results: Step 1: Eight cognitive interviews resulted in minor adjustments.

Step 2: 187 respondents completed an electronic version of eHLA distributed on Facebook and LinkedIn. 124 respondents were female, and aged 18 to 69 years (mean: 29,6). 123 were university students or graduates. See table 1 for results. There were almost no incorrect answers in _Functional Health Literacy_ and _Health Literacy Performance_ tools.

Table 1. Ceiling effects Cronbach's alpha

Health Literacy Self-Assessment No 0.67

Health Literacy Performance Yes 0.25

Functional Health Literacy Yes 0.35

Computer Incentive Yes 0.74

Computer Familiarity No 0.89

Computer Confidence Yes 0.81

Step 3: Adjustments were needed in eHLA's health literacy tools. 14 items were added to Health literacy Self-Assessment. Health Literacy Performance was completely rewritten due to lack of incorrect answers in validation. A health-related version of Computer familiarity tool was added. New adjustments were tested in five cognitive interviews which led to minor changes.

Step 4: Preliminary validation results from November 2015 include more than 300 respondents (aged 18 to 94) with various backgrounds. Data is collected from two clinical settings and by sociology students. Respondents choose between self-administration and interviews.

Step 5: Final version and results will be presented at the conference.

Discussion: The seven tools deal with user perspectives related to confidence, motivation and functionality. With its multifaceted structure, eHLA has the potential to become an essential tool for planning integrated care using technology.

First validation did not show satisfactory results regarding reliability and validity. The results reflect a young, well-educated convenience sample which is not representative for the target population. Despite skewed data, one digital and one health tool were ready for use. Ceiling effects and lack of incorrect answers were dominant in the remaining tools, which underlines the need for gathering responses from a representative sample in second validation.

Conclusion: The results from the first validation were affected by a young, well-educated, convenience sample, but preliminary results from second validation suggest that the final version of eHLA will be a comprehensive tool for measuring eHealth literacy. The finalized eHLA toolkit will be presented at the conference.

References:

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