

Appraisal

Clinimetrics: eHealth Literacy Scale

Summary

Description: eHealth literacy is a dynamic process defined by the individual's ability to search, access, comprehend appraise and use specific health information from electronic sources to make appropriate health decisions.¹ The eHealth Literacy Scale (eHEALS) is a self-reported tool developed to measure consumers' perceived skills, knowledge and comfort towards eHealth.² It is based on a model of six overlapping core skills that drive consumer engagement with eHealth: traditional (reading and writing), health, information, scientific (placing information in appropriate context), media and computer literacies.^{1,2} The tool consists of eight items, which can be rated through a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) according to the perceptions of the respondents.³ The total score ranges from 8 to 40, with higher scores indicating higher self-perceived and self-referred eHealth literacy. There is no suggested cut-off in the literature. The eHEALS is not disease specific and has been used in the general Internet user population, specific clinical populations, and healthy adolescent, adult and older people.²⁻⁴ When applied to a setting of chronic musculoskeletal pain, for example, it can be a skills-based guide for the development and/or adjustment of educational material and physical exercises, thus supporting self-management and self-efficacy.^{2,4} eHEALS is a brief scale: it takes around 5 minutes to be completed and no training is required for it to be administered. Studies report the use of paper, web-based and telephone-based interfaces.^{2,3,5}

Among different tools designed to measure eHealth literacy, eHEALS is the most widely used instrument.⁶ Besides its original version in English, eHEALS is available in Italian, Greek, Dutch, Chinese, Japanese, Persian and Hebrew.

Psychometric properties: Although there is some discussion on the existence of potential subscales within eHEALS, its unidimensionality (all items measure a single construct) was confirmed by several studies through Rasch or factor analysis.^{2,3,5} Factor loadings ranged from 0.60 to 0.84 among the eight items, supporting the unidimensional nature of the tool.² eHEALS appears to be reliable and it shows high internal consistency (Cronbach's alpha ranging from 0.88 to 0.91).^{2,5} Correlation between items ranged from 0.51 to 0.76.² eHEALS also showed a moderate test-retest reliability ($r = 0.49$ to 0.68). Intra-class correlation between scores at baseline and 6-month follow-up was 0.49.² Weak-to-moderate correlation was found between eHEALS and the health-related Internet use scale ($p < 0.001$; $r = 0.26$ to 0.40).⁷ Data from eHEALS in adults showed evidence of monotonicity (direct relationship) in all items. This shows that eHEALS accurately correlates self-perceived eHealth literacy to the 'agree' and 'strongly agree' response options, and those with lower scores presented greatest probability of selecting the options 'disagree' or 'strongly disagree'.⁵ Floor and ceiling effects are considered acceptable, with few participants scoring the worst or the best possible.^{3,7}

Commentary

Accessing health information online (eHealth information) contributes to building self-efficacy in the individual and in the community, as it potentially improves knowledge of healthy lifestyles, disease-specific conditions and self-management strategies. Poor eHealth literacy can impair participation in prevention and treatment programs and reduce adherence to medical treatments.⁶ Identifying eHealth literacy levels in general or specific clinical populations can guide strategies to digitally deliver tailored orientation and to develop interventions to improve eHealth literacy skills.⁶⁻⁸ In tele-rehabilitation, for example, physiotherapists will need to understand their patients' perceived eHealth skills and, consequently, how to enhance their patients' abilities. This can help reduce digital inequality and contribute to self-efficacy.⁴ Self-efficacy and adequate eHealth literacy predict engagement in self-management strategies, which are a key part of the treatment of chronic conditions.^{4,9}

Performance-based instruments provide a deeper insight into individuals' eHealth literacy skills. They may also allow for a broader overview of skills that play an important role in eHealth interactions, including interactive skills.⁸ Nevertheless, performance-based or hybrid scales are usually long, more complex, time-consuming for patients and professionals, and might not be feasible in specific settings.⁷

As a self-reported tool, eHEALS only measures consumers' perceived skills; it does not measure their skills directly.² Thus, the scale is susceptible to response bias and overestimation of consumers' perception towards their eHealth knowledge and skills.⁷

Provenance: Invited. Not peer reviewed.

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