


Spanish-language version of
the electronic health literacy
scale (eHEALS): A validation
study.



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Disclosure slide

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- ▶ Neither author has anything to disclose.
- ▶ Learner objectives:
 - ▶ Differentiate between electronic health literacy and health literacy.
 - ▶ Identify components of electronic health literacy using a screening tool available in different languages.
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Health Literacy

Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic **health** information and services needed to make appropriate **health** decisions.

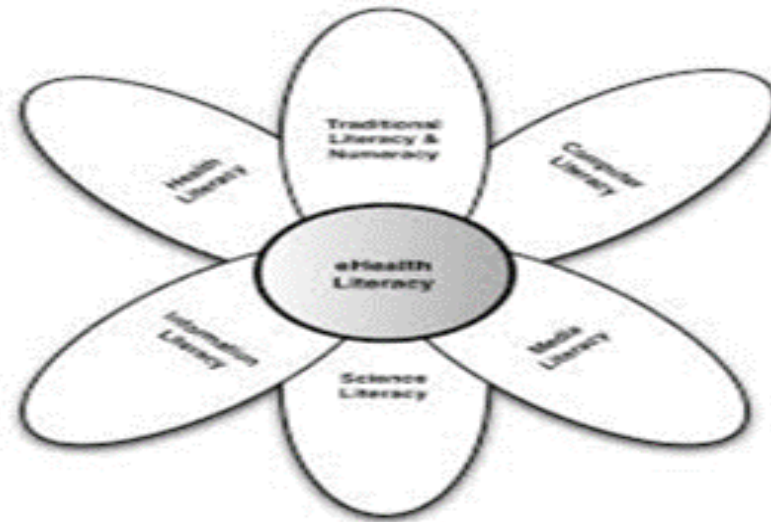
- [Health Literacy - Fact Sheet: Health Literacy Basics](#)



Electronic health literacy

Electronic health literacy is the ability to seek, find, understand, and appraise health information from electronic sources and apply that new knowledge to a health problem (Norman & Skinner, 2006).

Lily model





Measuring electronic health literacy

eHealth literacy scale (eHEALS)

English (Norman & Skinner, 2006b)

Translated into:

Japanese (Mitsutake, Shibata, Ishii, & Oka, 2012)

Chinese (Koo, Norman, & Chang, 2012)

Dutch (van der Vaart et al., 2011)

Spanish (Aponte & Nokes, 2015)



E-HEALS (developed by Norman & Skinner)

items 1 & 2 used separately; items 3 through 10 are combined.

e-HEALS item

1. How useful do you feel the Internet is in helping you in making decisions about your health?

2. How important is it for you to be able to access health resources on the Internet?

3. I know what health resources are available on the Internet.

4. I know where to find helpful health resources on the Internet.

5. I know how to find helpful health resources on the Internet.

6. I know how to use the Internet to answer my questions about health.

7. I know how to use the health information I find on the Internet to help me.

8. I have the skills I need to evaluate the health resources I find on the Internet.

9. I can tell high quality health resources from low quality health resources on the Internet.

10. I feel confident in using information from the Internet to make health decisions.



Tool validation with older Hispanic population

- ▶ Construct validity is concerned with the theoretical relationship of a variable to other variables; the extent to which a measure behaves the way that the construct it purports to measure should behave with regard to established measures of other constructs.

- ▶ DeVellis, R. (2012) Scale development: Theory and application. Thousand Oaks: CA: Sage, ISBN 978-1-4129-8044-9. p 64.



Assumption

- ▶ There would be relationship between electronic health literacy as measured by eHEALS and items on a national survey (HINTS) to measure use of the internet for health-related information since both instruments were measuring the same variable – electronic health literacy.



Instruments

- ▶ eHEALS

- ▶ Health Information National Trends Survey (HINTS)

Spanish HINTS 4 Cycle 3 has 15 scales with 127 questions that all use a 4-point Likert scale with 1=Very willing to 4= Not at all willing.

Section B5 of HINTS has 8-items, (B5A through B5H). The response of the 8-items were combined to create a total *Use of the internet over the prior 12 months for health-information scale*

Section B8 of HINTS (B8A-B8I) were combined to create a total *Willingness to Use the Internet for Health-related information scale*.



Samples

- ▶ A. Community-living older Hispanics (N=100) living in East Harlem in New York City who were members of a Senior organization and who completed both eHEALS and HINTS in Spanish.
- ▶ B. HINTS national sample (N=162) that was matched with the community living sample on age and ethnicity. They did not complete eHEALS, only HINTS.



Results

- ▶ eHEALS (Spanish version)
 - ▶ Mean score =25.82 (SD=5.93) (range from 11 to 35)
 - ▶ Cronbach's alpha=.887
 - ▶ Item-total correlations ranged from .476 to .892.
 - ▶ Confirmatory factor analysis (DeVellis, 2012) using principal components analysis was computed resulting in a single factor with an eigenvalue of 4.553 that accounted for 57% of the total variance which is similar to the 5.08 eigenvalue accounting for 64% of the total variance reported by Koo, Norman, and Chang (2012) for the Chinese version of eHEALS.

Results from the community-living sample and the national sample on HINTS

	Use of the internet over the prior 12 months for health-information	Willingness to Use the Internet for Health-related information
Community-living sample (N=100)	1.76 (SD=1.658); range=zero to 6	20.523 (SD=9.01); range= 8 to 32
National HINTS sample (N=162)	1.15 (SD=1.76); range=zero to seven	21 (SD=8.73); range= 8 to 32



Correlations between eHEALS and HINTS subscales for community-living sample

- ▶ No relationship between eHEALS and Use of the Internet over the prior 12 months for Health-information ($r=-.013$, $p=.89$) and Willingness to Use the Internet for Health-related information ($r=.033$, $p=.74$).
- ▶ Significant relationships between eHEALS and HINTS items (H1-H2) about health status (*In general, would you say your health is...*) and confidence in taking good care of their own health (*Overall, how confident are you about your ability to take good care of your health?*) were found ($r=-.425$, $p=.000$ and $r=-.344$, $p=.000$ respectively).
 - ▶ *Reporting their health as excellent and complete confidence in ability to give health was significantly associated with higher electronic health literacy which supports the construct validity of eHEALS.*



Summary

- ▶ Electronic health literacy is more complex than health literacy and interventions need to reflect this complexity.
- ▶ eHEALS can be used to identify the electronic health literacy of Spanish-language persons.
- ▶ Deficits can be addressed through the development of tailored electronic health literacy interventions for older Hispanic adults in order to build knowledge about their unique health challenges and valid and safe self-care strategies.
- ▶ This increased knowledge may lead to more productive interactions with the healthcare team.



Related articles

- ▶ Aponte, J., & Nokes, K.M. (2015). Electronic health literacy of older Hispanics with diabetes. *Health Promotion International*.doi: 10.1093/heapro/dav112. (describes preliminary validation work with Spanish version eHEALS)
- ▶ Aponte, J. & Nokes, K. (2017). Validating an electronic health literacy scale in an older Hispanic population. *Journal of Clinical Nursing*. Doi: 10.1111/jocn.13763 (describes the use of the Spanish version eHEALS and HINTS)