



Concepts Related to Health Literacy in Online Information Environments: A Systematic Review with an Emphasis on Approach to Information

ECIL 2017

September 20, 2017

[Anna-Maija Huhta](#), Noora Hirvonen and Maija-Leena Huotari

University of Oulu, Finland &

Medical Research Center, Oulu, Finland



Introduction

- Research on health literacy (HL) and related phenomena has been conducted in several disciplines
- Early HL descriptions as individuals' reading comprehension, numeracy and writing skills (E.g. American Medical Association, 1999)
- Recent definitions represent HL as a multidimensional concept (Mårtensson & Hensig, 2012)
- In the field of LIS: The concept of health information literacy by Medical Library Association (Shipman et al., 2009)



- Earlier reviews have focused on one concept
 - A concept comparison of HL and information literacy by Lawless, Toronto & Grammatica (2016): common attributes, but also unique features
- A need to explore how different literacy concepts approach information



Research questions

1. What kinds of health literacy concepts are used in different disciplines conducted in an online environment?
2. How do these definitions approach information?



Method

Data sources and search strategy

- Systematic review that follows the PRISMA statement (Moher et al., 2009)
- Literature search conducted in six academic databases (LISA, ASSIA, ERIC, Medline, LISTA, CINAHL), one journal searched manually
- Search limited to title and abstract and to peer-reviewed articles published in English between 2011-2016
- Search terms covered "online", "health" and "literacy", including related terms



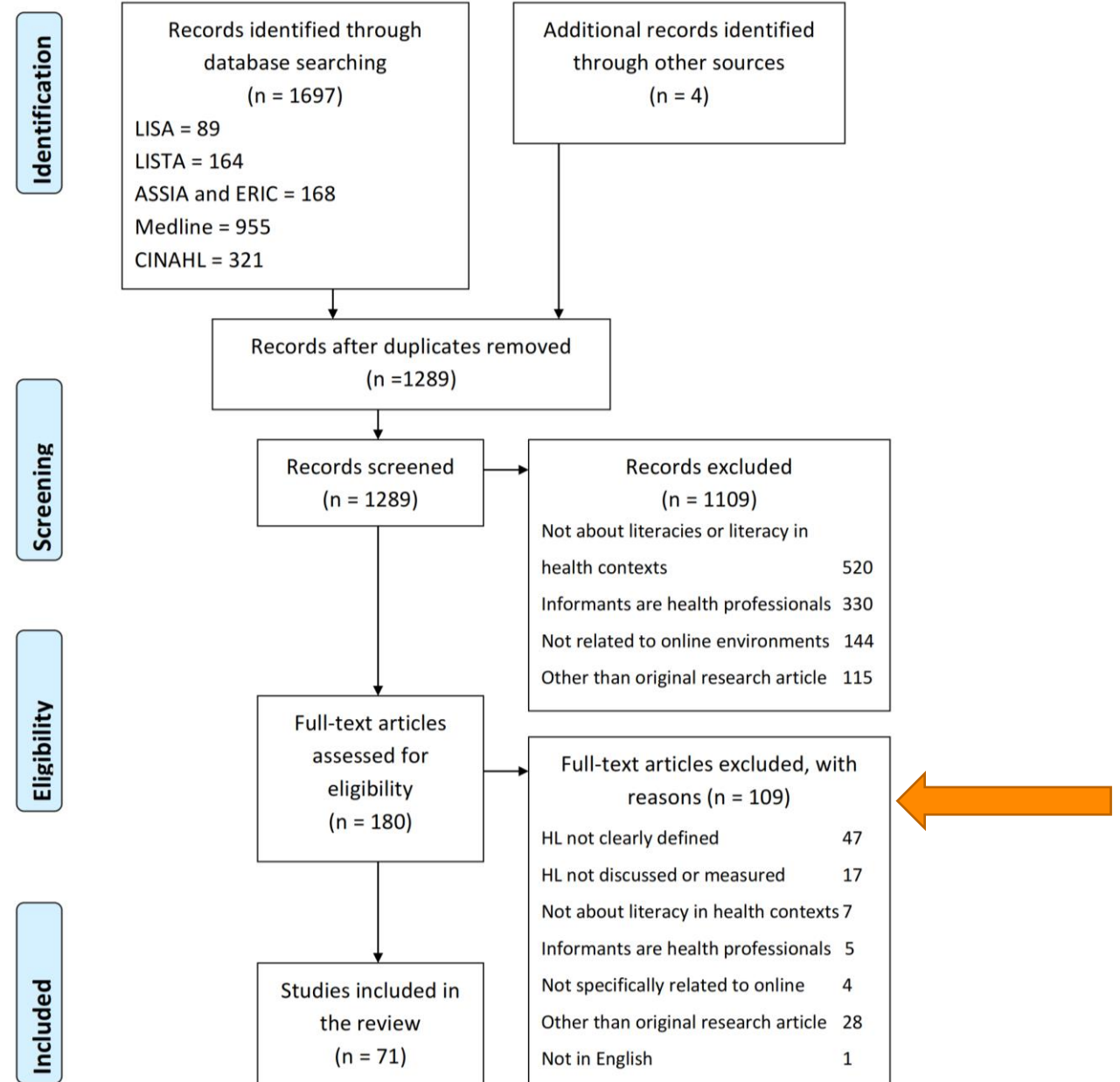
Study selection

- **1. Phase: 1289 abstracts screened, 1109 excluded**
- **2. Phase: 180 full-texts screened, 109 excluded**
- **A 10% random sample screened by the second author with and interrater agreement rate of 93%**
- **71 eligible articles included to the review**
- **Data extracted from the articles:**
 - Publication details
 - Discipline of the study (first author's affiliation)
 - Literacy concept and its definition



The study selection process

Fig. 1 PRISMA flow diagram (Moher et al., 2009)





Findings

- Analysis focused on the definitions of the concepts identified in the 71 included articles
- The majority of the articles represent (authors' affiliation) medical and health sciences (n=41)
- Other fields: communication and health communication (n=9), psychology (n=9), library and information science (n=8), pharmacy (n=2) and sociology and social work (n=2)



Findings

Table 1. Concepts related to health literacy in the eligible articles (N=71) and number of articles they are cited in.

The concept	Defined by	Number of articles
Health literacy	World Health Organization in Nutbeam, 1998 [15]	4
	World Health Organization in Nutbeam, 2000 [16]	1
	Ratzan & Parker, 2000 [13]	26
	Baker, 2006 [17]	4
	Zarcadoolas, Pleasant & Greer, 2006 [18]	2
	Nutbeam, 2008 [19]	1
	Berkman, Davis, & McCormack, 2010 [20]	6
	Sørensen et al., 2012 [6]	2
	National Network of Libraries of Medicine, 2013 [21]	1
eHealth literacy	Norman & Skinner, 2006 [14]	37
	Bodie & Dutta, 2008 [22]	1
eHealth literacy 2.0	Norman, 2011 [23]	1
Health information literacy	Medical Library Association in Shipman, Kurtz-Rossi & Funk, 2009 [5]	1
Everyday health information literacy	Niemelä et al., 2012 [24]	1
Mental health literacy	Jorm et al., 1997 [25]	3
Oral health literacy	U.S. Department of Health and Human Services, 2000b [26]	1
“Bad” health literacy	Schulz & Nakamoto, 2011 [27]	1



Findings

Health literacy by Ratzan & Parker (2000):

“the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions” → used e.g. by Institute of Medicine (Nielsen-Bohlman et al., 2004)

eHealth literacy by Norman & Skinner (2006):

“the ability to seek, find, understand, and appraise health information from electronic sources and apply the knowledge gained to addressing or solving a health problem”



These are also most referred to in LIS articles



Approach to information: Similarities

- The focus on ability to understand or comprehend information gained and to utilize the information in a decision-making process
- Also: information as a tool



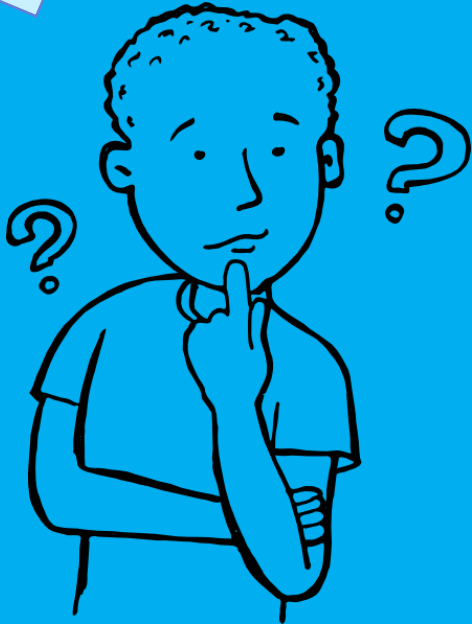
Approach to information: Differences

- Addressing prior knowledge as influencing factor (in Nutbeam, 2008; Sørensen et al., 2012)
- Attribute of information need (only in the definitions of HIL and EHIL)
- Critical evaluation of the found information addressed in 4 out of 9 definitions for health literacy
- Type of information: basic, medical information obtained through clinical settings, online health information, general health information, everyday health information, special type of health information



Discussion

What next?



- Most often used definition of HL promotes functional skills of an individual
- Wide use of eHealth literacy concept → there is a need to conceptualize the skills and competencies needed to act in online environments
- Overlapping concepts → May lead to weak theoretical constructs and difficulties in operationalization (e.g. Berkman et al., 2010)
- Future studies: critical examination of the concepts → in different or wider context
- Also: How is the online environment taken into account in the operationalizations of the concepts



References

- American Medical Association, Council on Scientific Affairs, Ad Hoc Committee on Health Literacy. Health Literacy: Report of the Council on Scientific Affairs. *JAMA*. 281(6), 552-7 (1999)
- Berkman, N. D., Davis, T. C., McCormack, L.: Health Literacy: What Is It? *J. Health Comm.* 15:9-19 (2010)
- Guzys, D., Kenny, A., Dickson-Swift, V., Threlkeld, G.: A Critical Review of Population Health Literacy Assessment. *BMC Public Health*. 15:215 (2015)
- Lawless, J., Toronto. C.E., Grammatica, G.L.; Health Literacy and Information Literacy: A Concept Comparison. *Ref. Serv. Rev.* 44(2), 144–162 (2016)
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D.G.: The PRISMA Group: Preferred Reporting Items for Systematic Reviews and Meta-analyses: The PRISMA Statement. *PLoS Med.* 6(7), e1000097 (2009)
- Mårtensson, L., Hensing, G.: Health Literacy – A Heterogeneous Phenomenon: A Literature Review. *Scand. J. Caring. Sci.* 26, 151–160 (2012)
- Nielsen-Bohlman, L., Panzer, A.M., Kindig, D.A.: Health Literacy: A Prescription to End Confusion. Washington, DC: National. Academies Press. (2004)
- Norman C.D., Skinner HA. (2006) eHealth Literacy: Essential Skills for Consumer Health in a Networked World. *J. Med. Internet Res.* 8:e9.
- Nutbeam, D.: The Evolving Concept of Health Literacy. *Soc. Sci. Med.* 67, 2072–2078 (2008)
- Ratzan, S.C., Parker, R.M.: Introduction. In: Selden C.R., Zorn M., Ratzan S.C., Parker R.M. (eds.) National Library of Medicine Current Bibliographies in Medicine: Health Literacy. NLM Pub. No. CBM 2000-1. Bethesda, MD: National Institutes of Health, U.S. Department of Health and Human Services (2000)
- Shipman, J.P., Kurtz-Rossi, S., Funk, C.J.: The Health Information Literacy Research Project. *J. Med. Libr. Assoc.* 97(4), 293–301 (2009)
- Sørensen, K., Van den Brouck, S., Fullam, J., Doyle, G., Pelikan, J., Slonska, Z., Brand, H., (HLS-EU) Consortium Health Literacy Project European: Health Literacy and Public Health: A Systematic Review and Integration of Definitions and Models. *BMC Public Health*. 12:80 (2012)



This study is a part of an Academy of Finland project:

Cognitive Authorities in Everyday Health Information Environments of Young People (CogAHealth)

www.oulu.fi/cogahealth-en

Thank you!

anna-maija.huhta@oulu.fi

Twitter: @amhuhta

Researchgate & LinkedIn