Digital health literacy as a super determinant of health: More than simply the sum of its parts

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Digital media has permeated all strata of daily life to the point where people engage with them for several hours each day on average. While its relevance for health-related purposes is constantly increasing, digital media can simultaneously play a draconic role in the spread of factually incorrect information; this not only sows doubt but can also be detrimental to individual and public health (de Albuquerque Veloso Machado et al., 2021). To harness the full potential of digital media to support health and well-being as well as to mitigate or counteract the effects of mis- and disinformation, three fundamental skills should be continuously developed: digital literacy, health literacy, and digital health literacy.

Digital literacy is described as “the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills” (American Library Association, 2017; UNESCO (United Nations Educational Scientific and Cultural Organization), 2011). This definition is constantly developing as digital transformations and applications grow more potent and complex. Nowadays, digital literacy is becoming increasingly important to the point where it can be regarded as a fundamental prerequisite for meaningfully participating in modern society (Sieck et al., 2021; Scheeder et al., 2017). Health literacy – the ability to obtain, read, understand, and use health-care information to make appropriate/informed health decisions (Sørensen et al., 2012; Sørensen et al., 2015) – is increasingly becoming a core skill for health-related information on the Internet (Lwin et al., 2020). Digital health literacy, at first glance, can be regarded as the convergence of digital literacy and health literacy (Honeyman et al., 2020). It is also important to consider that these factors likely covary to a certain extent. Age, sex, socioeconomic status (i.e. income, employment, and education), health status, and living in urban versus rural environments are all factors that can influence the development of both health and digital literacy (Scheeder et al., 2017; Sørensen et al., 2012; Sørensen et al., 2015; Honeyman et al., 2020; Odene et al., 2019; Kickbusch et al., 2021).

Both health and digital literacy are commonly conceptualised through competency-based frameworks. Health literacy is elaborately expressed through a matrix of four dimensions (access/obtain information relevant to health, understand information relevant to health, process/appraise information relevant to health, and apply/use information relevant to health) that are applied across three domains (healthcare, disease prevention, and health promotion) (Sørensen et al., 2012). It has also been described as a “social vaccine” amidst the COVID-19 pandemic that it enables individuals and communities to positively skew the spread of disease by finding and applying information related to the virus (Okan et al., 2022). A European Commission framework on digital competencies takes a similar approach to digital literacy by depicting five dimensions (information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving), each with four to six sub-dimensions that illustrate a core competence of digital literacy (Joint Research Centre (European Commission) et al., 2017). These frameworks showcase the complexity and multidimensionality of health and digital literacy and therefore highlight the need to conceptualise digital health literacy in the context of a competence framework. The Transactional Model of eHealth Literacy outlines four competence levels of digital health literacy (Paige et al., 2018):

1. functional: the ability to successfully read and write about health using technological devices;
As such, a framework is needed to clarify what exactly digital health literacy comprises in relation to its structural building blocks and how these building blocks are interlinked in a digital world (Wong et al., 2022). Ultimately, while digital transformations have tremendous potential to benefit public and population health, they are equally capable of exacerbating existing inequalities (van Kessel et al., 2022b). Conceptualising and building digital health literacy is therefore not only necessary at the professional level (who can develop, deploy, recommend, and prescribe the use of digital health services), but also at the public level (who will make up the user-base of digital health services). Social and cultural determinants can heavily affect the way digital health literacy is built up. Having a clear model for the determinants of digital health literacy in place is key to not only frame digital health literacy as a set of core competencies but also contextualise it amidst health literacy, digital literacy, civic literacy, and social and cultural determinants.

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RK: conceptualisation, data interpretation, and writing the original draft and editing. 
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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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