

# Health services and health literacy: from the rationale to the many facets of a fundamental concept.

## A literature review

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### Abstract

**Background.** The aim of this study is to make a critical analysis of the different definitions of health literacy to provide a framework of the concept.

**Methods.** A literature search was conducted in PubMed, Embase, PsycINFO, ERIC, Health Evidence, Centre for Reviews and Dissemination and Cochrane Library. Google and OpenGrey were searched to find additional papers and unpublished works.

**Results.** Among 7000 papers founded, we selected 26 works. During the 1990s, authors began to systematically study the relationship between health literacy and health status, according to a public health view. In the first decade of the new century, a new fundamental definition established three progressive degrees of health literacy: functional, interactive and critical health literacy. Sørensen (in 2012) provided a framework for the development of new assessment tools and interventions.

**Conclusion.** The improvement of health literacy is a powerful tool for the development of a new type of relationship between individuals and the health system.

### Key words

- health literacy
- definition
- review

### INTRODUCTION

Can the ability to read and understand drug or food product labels affect the health status of an individual? If so, are we able to measure and improve this skill?

In the 1980s, some authors began to pose these questions about the failure of some health promotion programmes aimed at spreading and sharing of health information developed at that time in the USA. What elements led to people's negative feedback? Was this failure predictable? Why were the best results found in the richest and most educated people [1]?

The new concept of health literacy was introduced with the aim of answering these questions. The concept aimed to address many individual skills, including education, literacy and personal and economic abilities, that influence people's capacities to acquire, understand and apply health-related information.

Authors' attention to this concept has quickly grown during recent decades; a bibliographic search on Medline shows the rapid increase in the number of health literacy-related papers, from 129 published in the pe-

riod 1986-1990 to 1576 published between 2006 and 2010 [2].

In this paper, we performed a critical analysis of the various definitions of health literacy given in recent years and provided a framework of the concept according to the many aspects that the term has acquired in the last twenty years.

### MATERIALS AND METHODS

A literature search was conducted with the purpose of extracting the reviews that address the definition of health literacy.

The following databases were explored for the search: PubMed, Embase, PsycINFO, ERIC, Health Evidence, Centre for Reviews and Dissemination and Cochrane Library. Our choice was made for the purpose of collecting medical and social psychological information. Google and OpenGrey were also searched to investigate unpublished works (the so-called "grey" literature) and to find additional papers related to the argument.

For all of the databases, the search was performed until 01/06/2014.

### PubMed

Because the review by Sørensen *et al.* is a milestone study [3], the literature search on PubMed was conducted using the search strategy proposed by these authors. We added a temporal limit to extract only the papers published after 25/01/2012, the date on which Sørensen's review was published. Furthermore, a validated query with the aim of extracting only the systematic reviews or the meta-analysis was added.

*Search strategy:* ("health literacy" OR "health competence" OR health competence) AND (definition OR model OR concept OR dimension OR framework OR conceptual framework OR theory OR analysis OR qualitative OR quantitative OR competence OR skill OR "public health" OR communication OR information OR functional OR critical) AND ("meta-analysis as topic" OR meta-analysis[pt] OR meta-analysis[tiab] OR review[pt] OR review[tiab] OR letter[pt] OR editorial[pt] OR comment[pt]) NOT ("animals" [MeSHTerms:noexp] NOT "humans"[MeSH Terms]).

### Embase

Sørensen's strategy was used to also investigate this database. The search was limited to English language papers and reviews, using Boolean operators.

*Search strategy:* ("health literacy" OR "health competence" OR health competence) AND (definition OR model OR concept OR dimension OR framework OR conceptual framework OR theory OR analysis OR qualitative OR quantitative OR competence OR skill OR "public health" OR communication OR information OR functional OR critical) AND ("review"/exp OR "review" OR "metaanalysis"/exp OR "metaanalysis" OR search).

### PsycINFO

Sørensen's search strategy represented the starting point for our PsycINFO analysis, and we added a restriction for the type of publication (literature review, systematic review and meta-analysis).

*Search strategy:* ("health literacy" OR "health competence" OR health competence) AND (definition OR model OR concept OR dimension OR framework OR conceptual framework OR theory OR analysis OR qualitative OR quantitative OR competence OR skill OR "public health" OR communication OR information OR functional OR critical).

### ERIC

Considering the peculiarities of this database, Sørensen's search strategy was considered inadequate for its low specificity. Therefore, we decomposed the search strategy, and the part that caused the distortion was eliminated. Thus, we increased the specificity of the search strategy but maintained adequate sensitivity. Finally, a restriction for the form of the study (literature review, systematic review and meta-analysis) was added.

*Search strategy:* ("Health literacy" OR "health competence") AND (definition OR model OR concept OR dimen-

sion OR framework OR conceptual framework OR theory OR analysis OR qualitative OR quantitative OR competence OR skill OR "public health" OR communication OR information OR functional OR critical) AND (review OR meta-analysis OR meta analysis).

### Health Evidence, Cochrane Library, Centre for Reviews and Dissemination

Sørensen's search strategy reveals a low sensitivity if applied to these databases. For this reason, we preferred to adopt the generic expression "health literacy" without the use of any type of restriction.

*Search strategy:* health literacy.

### OpenGrey

The search was performed using the keywords *health* and *literacy*, no temporal and linguistic filters or restrictions by type of discipline were applied.

After the searches, we removed the duplicates derived from different databases. Then we selected the papers fitting the query according to the title. Finally, among the remaining works, we extracted only the ones whose abstracts or full text, if available, satisfied the topic of interest.

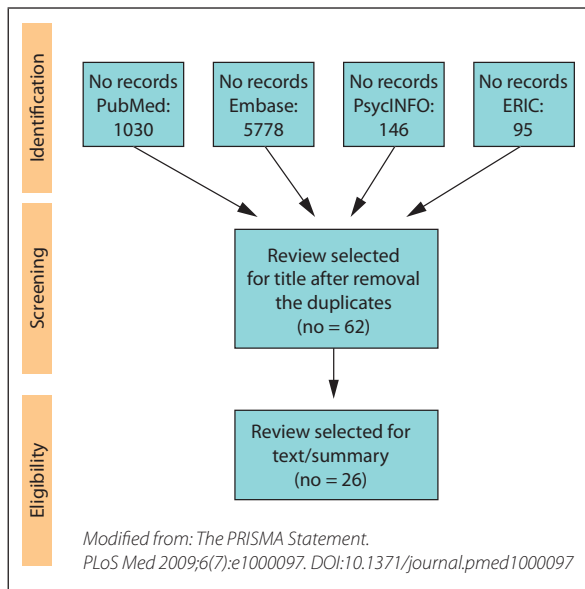
## RESULTS

*Figure 1* quantitatively shows the steps of the process of the search and selection. Among the more than 7000 papers selected with our search strategy, we extracted 62 works satisfying the query for the title and the type of the study (*i.e.*, only systematic reviews). After reading the summary or the full text (if available), we selected only 26 of these results. Two unpublished documents were added after the search within the grey literature [4, 5].

The concept of literacy within the health sphere was introduced for the first time in the USA during the seventies and refers to an individual's ability to satisfy his/her health needs in a developed society [6]. Therefore, at the beginning, health literacy was strictly referred to as an individual skill that mainly involved the familiarity with the terms or numbers of typical medical matters [4].

Later, the World Health Organization (WHO) proposed a wider definition of the concept that included "the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health" [7].

In the 1990s and especially in the first years of the 21<sup>st</sup> century, some authors began to systematically study the relationship between health literacy and health status [8]. During this period, the concept spread and received attention even in Europe [9-11], and it has also been developed according to a typical public health view: instead of a simple individual skill, someone began referring to health literacy as the ability of a group or a community to successfully address the health system in their country, assuming that the health system influenced this relationship itself [1, 12, 13]. According to this perspective, health literacy was no longer considered an individual and independent skill but to be strictly connected to a social context. The new fun-



**Figure 1**  
The steps of the search and selection process.

damental aspect of a two-way approach (namely, from an individual as well as from a social perspective) was therefore introduced, becoming a major element of the studies on the topic. The health context includes the media, the marketplace, and government agencies, as well as those individuals and materials regarding health a person interacts with. Health literacy, then, is a shared function of cultural, social, and individual factors [5]. In this new dimension, some authors have published papers in which there is some confusion about health literacy and other concepts such as health professionals' expertise [13, 14].

Another similar concept with which health literacy is often confused is empowerment, which implies a particular degree of independence and emancipation in making health choices, regardless of the awareness and the rationality that guide these choices, which are fundamental elements in the definition of health literacy [15, 16].

In the first decade of the new century, the most important definition of health literacy was given by Nutbeam [1], who established three progressive degrees of literacy regarding health matters: the lower level is functional health literacy, which has the original meaning of the term and refers to basic skills including reading, writing and numeracy; the second step is interactive health literacy, which is a more developed ability that, for example, allows a two-way relationship with the general practitioner to communicate about the patient's subjective health status, allowing the patient to be involved in the decision of a therapeutic regimen; and the most developed level is critical health literacy, which enable the patient to evaluate, influence, and decide health matters.

Schulz and Nakamoto proposed a 3-step health literacy model, which had some peculiarities in comparison with that of Nutbeam [17]. The degrees (dimensions) proposed by these authors were the following: declara-

tive knowledge, which involves knowledge of a health problem; procedural knowledge, which involves the capacity to apply declarative knowledge and use health information in specific contexts; and judgement skills, which involves the ability to make an independent and conscious choice with the help of declarative knowledge to face new and unexpected situations.

Another theory was elaborated by Jordan *et al.* in 2010 [18]. These authors conducted an inquiry based on interviews, in which people were asked what skills are needed to maintain of their health status. Related to functional literacy, the following 6 skills were identified: knowing when it is necessary to search for health information; knowing where to find this information; knowing how to communicate, understand and elaborate information; being able to completely understand health professionals; and being able to apply the acquired information. These skills can be used during the course of a disease, and they form what Squiers would have called "medical literacy" [19].

The most recent model of health literacy was proposed by Sørensen in 2012 [3] (Table 1).

In this paper, Sørensen gave importance to the so-called "antecedents" of health literacy, which are the determinants of the health literacy degree of an individual or a community. These elements can be separated into individual dimensions, such as general literacy, and systemic (demographic, cultural, psychosocial) dimensions.

Similarly, the authors stressed the "consequences" of health literacy, which are the outputs derived from an improvement in health literacy not only for the individual or the community (which cause an increase of social wealth) but also for the efficiency and sustainability of the health system as a whole, with potential cost savings.

Recently, some authors have reflected on interactive and critical health literacy, which are the less defined aspects of the concept, although they substantially impact on public health [20, 21].

In the work by Adams *et al.* [22], for example, the role of the health system in defining the parameters of order is said to involve the meaning and type of interaction in the relationship with services' users, which again stresses the bi-directionality of this relationship.

By focusing on interactive and critical health literacy, many authors have recently suggested using the competencies of disciplines that do not directly concern health, such as the liberal arts and sociology [23, 24]. Fisch, for example, suggested considering some common elements of other literacy fields: civic literacy, cul-

**Table 1**  
Sørensen's health literacy definition

Set of	That allow	Information about	With the aim of
Knowledge Competence Motivation	Access Understand Appraise Apply	Health promotion Disease care and prevention	<b>Improving self health status</b>

Elaborated from Sørensen *et al.* [3].

tural literacy, information literacy, media literacy, political literacy and science literacy. The authors underlined how some themes recur in these fields and have already been used in definitions of health literacy, such as functional, procedural/declarative knowledge and critical, although with some slight variations. Additional dimensions addressed by the same authors include originality and innovation in health literacy, including awareness (or mindfulness), which is defined as the consciousness of the impact on society. This concept can also be applied to health literacy as an aspect of critical health literacy. In this work, the authors emphasised the absence, or at least the poor frequency, of emotional and longitudinal aspects of health literacy, which are strictly tied to motivation and are unanimously considered a pillar of health literacy.

Finally, most of the recent studies stress the effect of new media and technology on health literacy. The terms media literacy and computer literacy are increasingly used and assume increasing importance especially with the establishment of the digital era [25, 26].

## DISCUSSION

The critical importance of health literacy must be emphasised, especially based on the re-organisation of and the economical cuts suffered by health systems, which need to develop new and more advanced relationships with their users.

People who have poor health literacy become sick more often, engage less in screening programmes and seek health services in more advanced stages of disease; moreover, they are less conscious of their health status and the therapy they are following.

These factors will cause worse adherence to medical treatments, repeated hospitalisations, and twisted and unsuitable access to emergency medical services, which burden the health system [27]. A 1998 study showed how the overall social costs attributable to poor health literacy in the USA could be estimated to be 50 billion dollars per year [28].

The improvement of people's health literacy must be considered to be not only a fundamental basis for therapy adherence and the patient-physician relationship but also the drawing power for the development of a new type of relationship between the individual and

the health system, a change that is increasingly felt to be necessary, considering the crisis of the old relationship. This relationship did not follow the evolution of the health system on one hand and people's empowerment on the other, which are major causes of the failure of the health system. Moreover, since people with the lowest levels of health literacy have the least access to health information (the so-called "inverse information law") [29], the improvement of health literacy among low-literate people can be considered as an intervention aimed at reducing health inequalities.

Finally, the most recent models demonstrate how health literacy is more than a functional dimension. For this reason, it is essential to create advanced tools to evaluate the impact on the individual and collective health status of programmes aimed at improving "public health literacy".

The latest models of Nutbeam and Sørensen constitute a decisive step for the development and validation of globally acknowledged measurement tools for health literacy, in which all aspects must be considered.

## Authors' contributions

GB: conception and design of the study; interpretation of data; drafting and revising the manuscript.

CL: conception and design of the study; interpretation of data; drafting and revising the manuscript.

BRP: conception and design of the study; data analysis.

AB: conception and design of the study; drafting and revising the manuscript.

LC: conception and design of the study; acquisition of data; data analysis; interpretation of data; drafting and revising the manuscript.

All authors read and approved the final manuscript.

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## Conflict of interest statement

The authors declare that they have no conflict of interests.

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