

Health literacy in low- and middle-income countries: What is the evidence for noncommunicable diseases?

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ABSTRACT

Health literacy (HL) is defined as a person's ability to access, understand, appraise, and apply health information in order to make sound health decisions. It has emerged as a key determinant of health outcomes, more particularly in noncommunicable diseases (NCDs). Low HL has been associated with lower use of health-care services and poorer health outcomes, including increased morbidity and mortality. During the second meeting of the EMAC-AOC Group (Epidemiology of Chronic Diseases – Central and Western Africa), HL and NCDs in low- and middle-income countries (LMICs) were discussed to explore options for interventional studies in sub-Saharan Africa on NCDs' prevention and control. We reviewed how HL is defined, how it is associated with health outcomes and health inequities, and what instruments are available to assess it. Several published studies, systematic reviews, especially in LMICs, as well as national and international recommendations were discussed to explore potential approaches to improve HL in a study evaluating interventions for the prevention and control of NCDs in Africa.

Keywords: Health literacy, low- and middle-income countries, noncommunicable diseases

Introduction

Noncommunicable diseases (NCDs) are a major global health challenge. Low- and middle-income countries (LMICs) bear a significant burden of NCDs, with high rates of morbidity and mortality. According to the World Health Organization (WHO), NCDs account for approximately 71% of all deaths globally, and LMICs are disproportionately highly affected.^[1]

Twenty-five specialists in public health, cardiovascular and metabolic diseases, neurology, mental health, genetics, and pharmacy from Benin, Congo Republic, Gabon, Ivory Coast, Senegal, Togo, and France belonging to the “Epidémiologie des Maladies Chroniques – Afrique de l’Ouest et Centrale” Group (EMAC-AOC-Epidemiology of

Chronic Diseases – Central and Western Africa) gathered in Limoges (France) in January 2023 during a 3-day meeting to explore options to evaluate interventions for the prevention and control of NCDs in sub-Saharan Africa through multinational studies.

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Health literacy (HL) is an important determinant of health outcomes, particularly for NCDs. This article examines the concept of HL and its implications for the prevention and control of NCDs in LMICs. It summarizes some of the sessions and workshops which took place during the second meeting of the EMAC-AOC Group.

Defining Health Literacy

HL has recently become a topic of great relevance among researchers, health professionals, and policymakers across various disciplines with close to 20,000 papers published since 1982 [Figure 1].

There have been numerous definitions of HL over the past few years, with 26 published between 1995 and 2015.^[2] Most recently, the WHO has defined HL as: *“people’s knowledge, confidence and comfort – which accumulate through daily activities and social interactions and across generations – to access, understand, appraise, remember and use information about health and health care, for the health and well-being of themselves and those around them.”*^[3]

In other words, HL encompasses a range of skills, including reading, writing, numeracy, and communication, as well as cultural and social factors that influence health-related behavior. As such, it has emerged as a critical component of effective prevention and management of NCDs in LMICs, as in the rest of the world.

Another key concept related to HL is the “empowerment for health”.^[4] Individuals with strong HL will have the required skills and capabilities to engage in various health-enhancing behaviors, including personal and social

actions. These actions may involve encouraging others to make healthy choices, such as smoking cessation or participating in preventative screening programs. As a result, individuals with high HL not only experience better health outcomes and have access to a broader range of opportunities and options to maintain good health, but they also might have a greater impact on the health of others.^[5]

Health Literacy, Health Outcomes, and Health Inequalities: An Overview

Numerous studies have shown an association between low HL and poor health outcomes, including increased morbidity and mortality, and health inequalities, as summarized in Figure 2.^[6-20]

Several reviews have also shown low HL to be associated with poorer health outcomes, including increased morbidity and mortality from NCDs, and poorer use of health-care services.^[21-23]

Individuals with limited ability to access, understand, and apply health-related information are more likely to experience negative consequences. They might struggle to seek information and guidance, to comprehend health-related instructions, health education materials, or doctors’ advice, leading to medication errors, missed appointments, and inadequate self-care. This can also delay diagnosis and treatment, resulting in worsened conditions and increased hospitalizations. Overall, the literature has shown low HL to exacerbate health disparities and to contribute to higher morbidity and mortality rates among affected populations.^[7-23]

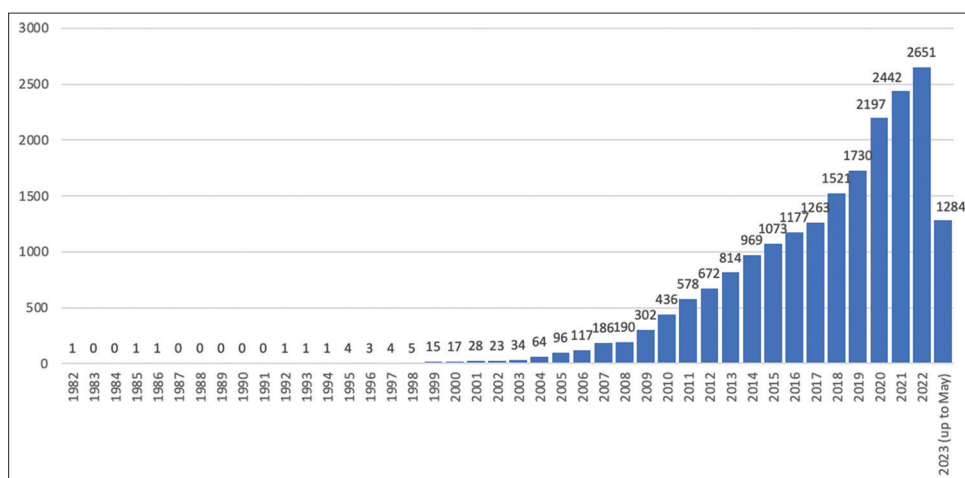


Figure 1: Number of health literacy publications per year between 1982 and May 2023 (PubMed) - Total = 19,901

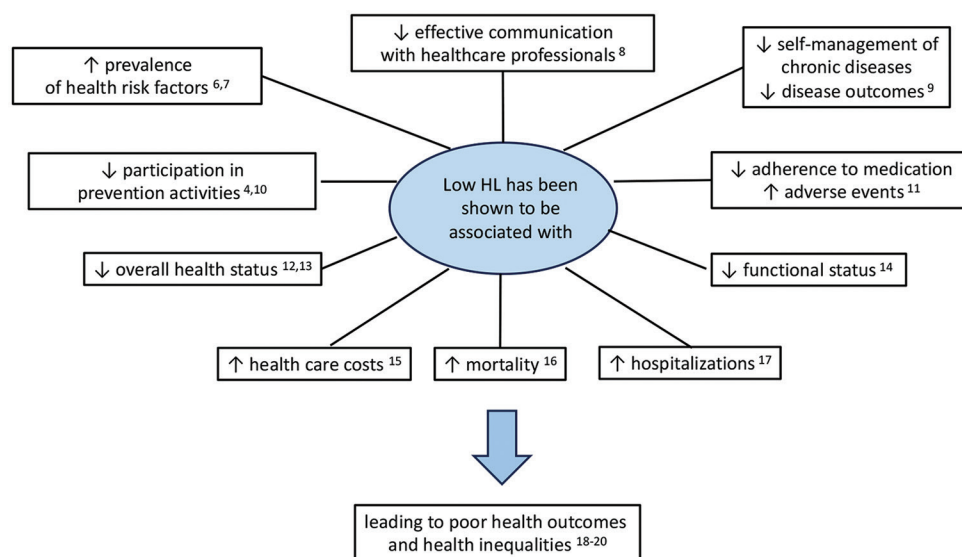


Figure 2: Graphical summary of studies published about the association of low health literacy with poor health outcomes

How to Assess Health Literacy?

Several tools have emerged which aim to encompass the entire scope and dimensions covered by the concept of HL. We will review below some of the most commonly used instruments.

The HL Questionnaire (HLQ) is now one of the most widely used HL measures worldwide.^[24] It is a multidimensional tool based on the theoretical framework of the WHO definition of HL. The HLQ explores 9 dimensions of HL through 44 items and has been shown to display robust psychometric properties. It is easily self-administered and has been validated in multiple languages and in over 25 countries.^[24,25]

The European Health Literacy Survey Questionnaire (HLS-EU-Q) is another comprehensive instrument to measure HL in populations.^[26] It includes 47 items in its full version (HLS-EU-Q47), addressing self-reported difficulties in accessing, understanding, appraising, and applying information in tasks concerning decision-making in health care, disease prevention, and health promotion. Shorter versions have been developed (16 items for HLS-EU-Q16, 12 items for HLS-EU-Q12, and HLS-SF12) and validated in various countries, including 17 in Europe and 6 in Asia, and various populations.^[27-32]

Another tool is the Functional, Communicative, and Critical HL–HL Scale which explores three dimensions of HL in adult patients with chronic diseases through a 14-item scale and through a self-report questionnaire.^[33] Initially developed in Japan, it has now been validated in several countries, languages, and populations.^[34,35]

Health Literacy and Noncommunicable Diseases in Low- and Middle-income Countries: Current Challenges

LMICs face unique challenges in addressing HL and NCDs. These challenges include limited access to health information and services, low levels of formal education and literacy, and cultural and linguistic diversity. In many LMICs, there is a lack of trained health-care providers, and health systems are often under-resourced and overburdened. These factors contribute to low HL and poor health outcomes for people with NCDs.

In a systematic review including 13 studies from four countries in South Asia, it was shown that the majority of people with NCDs had an inadequate HL. Levels of inadequate HL varied between studies, countries, and diseases: diabetes (26.0%–80.9%), cardiovascular disease (51.8%–83.4%), and chronic obstructive pulmonary disease (COPD) (74.8%–79.0%). Beyond the expected factors such as poor disease knowledge, and limited or no educational background, it has been shown that belonging to an indigenous or marginalized community from rural areas, and being female, were also factors associated with inadequate HL.^[36]

A study conducted in Ethiopia among adults with NCDs (hypertension, cardiovascular diseases, diabetes, COPD, asthma, and epilepsy) reported a low level of HL for 43.9% to 54.2% of the participants depending on the item surveyed. It also showed that HL levels varied according to the sociodemographic and disease characteristics of patients. Interestingly, the most commonly cited source

of information was health-care professionals (43.9%) well ahead of radio (22.8%) and TV (20.6%), underlining the importance of the information conveyed by health-care professionals to their patients.^[37]

In another systematic review^[38] aiming at evaluating HL interventions, their content, and their effectiveness in chronic conditions, 39 unique interventions were included (of which 20.5% were in LMICs), mainly in diabetes and heart disease. A significant change in HL was found in 28 studies (71.8%), although the authors stated that the methodological quality of the studies was generally poor, in particular with 37 of the 39 included studies at risk of bias (23 at high risk), heterogeneity of the definitions of HL and of the magnitude of the effects.

In rural Uganda, a study was conducted among community health workers (CHWs) whose activities were focused on infectious diseases and maternal–child health.^[39] CHWs were enthusiastic about raising NCD awareness and integrating NCD care into their role. They nevertheless emphasized that they needed to be empowered through NCD training, to be equipped with the proper reporting and referral tools, and with strong and visible collaborations with medical personnel. Interestingly, the lack of financial remuneration for their role did not appear to be a major barrier to providing NCD services.

Improving Health Literacy: Exploring Potential Approaches for Low- and Middle-income Countries and Noncommunicable Diseases

In a systematic review evaluating HL interventions to improve health outcomes in LMICs, data from 23 published studies, conducted in 14 countries (mainly in Asia and Africa), were analyzed.^[40] The authors identified four main groups of HL interventions: traditional HL interventions (such as lectures, didactic sessions, dissemination of printed materials, and use of visual aids), art-based HL interventions (drama classes, drawings, storytelling, etc.), interactive learning strategies (group discussions and peer-support programs), and technology-based HL interventions (using mobile devices, Internet websites, and digital devices). They represented 43%, 39%, 26%, and 13% of all interventions, respectively. All HL interventions were effective and improved the knowledge and awareness of the population. A few of the studies which evaluated behaviors also showed positive outcomes regarding preventive health practices and behaviors and health-promoting behaviors.

In addition, in this review, as well as in another by Stormacq,^[41] it was shown that multifaceted interventions, using a combination of both educational materials and interventionists (professional or lay) to deliver the intervention, were more effective than single-modality interventions.

In another systematic review and meta-analysis of health education interventions to promote HL in adults living in LMICs with NCDs (cancer, cardiovascular disease, chronic respiratory disease, or diabetes),^[42] including 53 studies, the authors concluded that HL interventions were effective (especially in diabetes) in promoting disease knowledge, attitudes, and behaviors, with a significant effect shown in all three components.

Although conducted in the Organization for Economic Cooperation and Development countries, a systematic review of interventions to improve HL for chronic disease behavioral risk factors showed some interesting findings.^[43] Among the 52 studies included, the authors could classify interventions into six different types: group education (28.8%), written materials (23.1%), individual counseling (21.2%), multiple interventions (19.2%), telephone counseling (3.8%), and computer/web based (3.8%). Overall, 73% of all studies were associated with change in HL, and 75% with a change in smoking, nutrition, alcohol, physical activity, and weight (SNAPW). Positive outcomes for SNAPW were more frequently (43% of studies) reported for low-intensity interventions (≤ 3 points of contact hours) than with high-intensity interventions (≥ 8 points of contact/hour, 33% of studies).

An open-label randomized controlled trial conducted in Mali to evaluate the effectiveness of peer-led self-management education for patients with poorly controlled type 2 diabetes^[44] is also very insightful. The intervention group received 1 year of culturally tailored structured patient education (every 3 months) delivered in the community by five trained peer educators. The authors demonstrated that this intervention resulted in substantial improvements in glycemic control (glycated hemoglobin) and anthropometric parameters (body mass index and mean waist circumference) compared to standard of care.

Improving Health Literacy: Additional Recommendations

As HL has been gaining critical importance in public health,^[45] national and international policies and action

plans have been developed to address the issue of low HL,^[3,46-51]

As stated by the WHO, “effective responses to HL issues can improve health outcomes and reduce health inequities. Policies and practices must promote identification of HL issues and the implementation of targeted responses.”^[51]

In its recommendations for the development and implementation of HL interventions in LMICs, the WHO has highlighted three key principles:^[51]

- To be effective, HL interventions need to be tailored to the specific needs of the local population and consider the unique contexts in which they exist (health-care systems, availability and use of mass media, cultural norms, etc.)
- Collaborating with local stakeholders to co-create HL interventions is a powerful way to engage the community and generate innovative and effective solutions
- To maximize the sustainability and scalability of these interventions in LMICs, it is important to leverage existing health and social resources and to design health-care services that are appropriate and rooted within local communities.

However, in order to truly address HL in a comprehensive and organized manner, it is necessary to (a) integrate HL into high-level systems and organizational policies and practices, (b) ensure that health information is presented in a clear, concise, and relevant manner, and that interpersonal communication is effective and tailored to the needs of the audience, and (c) integrate HL into education for consumers and health-care providers.^[48]

Integrating Health Literacy as Part of Interventions for the Prevention and Control of Noncommunicable Diseases in Low- and Middle-income Countries

After reviewing the evidence about the importance of HL as a determinant of health outcomes, and discussing the effects of HL interventions for NCDs in LMICs, the EMAC-AOC Group was strongly in favor of integrating HL interventions as part of any package of interventions for the prevention and control of NCDs.

Although several members highlighted how essential it was to have HL interventions well aligned with the specific needs of the local population and with the unique contexts of their countries, especially with regard to low literacy levels as well as cultural and social factors which influence health-related behaviors,^[52] everyone agreed that

integrating HL activities and assessing them in the context of a study evaluating interventions for the prevention and control of NCDs in Africa would be extremely valuable.

Conclusion

LMICs face unique challenges in addressing HL and NCDs. However, there is evidence that HL interventions in LMICs can help improve health outcomes for people with NCDs. The EMAC-AOC Group will leverage relevant key learnings from the published literature and from the various national and international recommendations to develop effective HL interventions, and they will design studies to evaluate them in sub-Saharan Africa.

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Conflicts of interest

PEB is a former Sanofi employee and owns Sanofi shares. Other authors have nothing to disclose in the context of the submitted work.

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