What is health literacy?

The term health literacy was first used in the 1970s in a paper on health education as a policy issue affecting the health care system. At the time it became apparent that increasing health care budgets alone did not result in better health outcomes. Today the doctor patient relationship has shifted from a paternalistic model to a more patient-centred model, which places demands, and often makes assumptions, on the patient’s health literacy skills.

Health policy makers refer to empowerment of individuals and communities in their policies. The WHO 7th Global Conference on Health Promotion, defines health literacy in this context and states “By improving people’s access to health information and their capacity to use it effectively, health literacy is critical to empowerment”\(^1\).

This concept of health literacy, empowering individuals and communities, is an integral part of health literacy definitions that are endorsed by health promotion and public health organisations, and, are reflected in their policies and positions papers\(^{1,2}\).

How prevalent is limited health literacy?

Population literacy studies in the U.S., Australia and Canada report between 36% and 60% of adults have inadequate health literacy skills\(^{3-5}\). In Europe, the European health literacy survey (E.U. HLS) was conducted in 2011 in 8 European countries and reported that 47% of adults had inadequate health literacy\(^6\). This high prevalence of inadequate health literacy means that approximately every second patient has inadequate health literacy skills, which leads to difficulties in engaging with the health services in every step of the patient’s journey. Evidence from both population studies and clinical studies in diverse patient groups identifies education, low socio-economic status, older age and ethnic minority groups as risk factors for inadequate health literacy\(^2,7\).
Why does health literacy matter?

There are a number of studies demonstrating associations between health literacy and health outcomes. Two community-based studies in older adults in the U.S. found that health literacy is linked to mortality. This association was maintained after adjustment for age, ethnicity, education attainment and socio-economic status. Health literacy has been found to be associated with self-reported health status in seniors but not in other adult age groups. There is evidence that limited health literacy is independently associated with poorer uptake of vaccinations, less engagement with disease prevention behaviours and increased use of acute hospital services. For example, after adjustment for confounders, limited health literacy was associated with lower uptake of mammography screening for breast cancer, and lower uptake of the annual influenza vaccine. However the association was not found in studies on Pap test or colon cancer screening. Similarly higher rates of readmissions and/or emergency department visits within 30 days of discharge were found in patients with limited health literacy. In contrast, correctly interpreting labels and health messages, and taking medications appropriately, after adjustment for confounders, were significantly associated with adequate health literacy. Confounders varied between studies but frequently included one or more of the following: age, ethnicity, education, income, socio-economic status. There is insufficient evidence and/or conflicting findings from studies of other health outcomes, such as medication adherence, self-efficacy, knowledge of disease or prevalence of specific chronic diseases.

Are there interventions that mitigate the effects of limited health literacy?

Evidence of the impact of health literacy interventions on health outcomes is less well established. A number of studies have explored the effect of print and multimedia materials that were adapted to improve comprehension in patients with limited health literacy. Design features of interventions that are likely to improve comprehension are presentation of essential information first, limiting non-essential information, presenting information where a higher number means better performance/outcome, adding icons to numerical data and adding video to verbal or printed materials. The health care physician may enhance the patient-physician interaction by using patient-centred communication techniques, such as the teach-back tool and by explaining clearly medical terms. Physicians who participate in communication workshops are more likely to use communication enhancing techniques, and this can lead to higher uptake of cancer screening by patients. A patient education programme, “Ask me 3”, which encourages patients and their families to ask healthcare providers 3 questions to help them better understand their health condition, can increase patient participation.

A number of other interventions focus on improving patient knowledge and provider communication; to date none of these have been researched extensively and their impact on health outcomes is uncertain.
The available evidence shows that some of these interventions lead to increased patient knowledge, enhanced participation in decision-making and improved patient satisfaction, factors which are, in turn, linked to improved health outcomes\textsuperscript{11}.

**A conceptual model linking health literacy to health outcomes**

Paasche and Wolf developed a conceptual model linking health literacy to health outcomes, recognizing “both individual and system-level factors that affect access to health care, medical encounters, and self-care activities”\textsuperscript{11}. To summarise health literacy can be an asset, for patients with adequate health literacy, or a risk factor, for patients with limited health literacy, influencing a patient’s health care journey at 3 key steps, namely, access and utilisation of health care, the patient-provider interaction and self-care activities. Health care system factors include the complexity of navigation of healthcare institutions and of health care systems themselves, such as patient care pathways. Limited health literacy may lead to the patient playing a more passive role in the provider-patient relationship; this can be due to a sense of shame, in addition to communication difficulties\textsuperscript{12}. At the self-care level, patients with limited health literacy have poorer disease knowledge, less adherence to medication instructions, are more likely to have inaccurate knowledge about their medications and misinterpret prescription instructions\textsuperscript{8}. Finally, the conceptual model includes factors associated with health literacy, such as age, income, education attainment and ethnicity. Additional factors included in the model are cognitive skills such as memory and reasoning skills, and social supports. The exact mechanisms and pathways of how these factors influence health literacy and how health literacy, in turn, influences self-management and health outcomes are poorly understood at present.

**Implications for health services research and health care policy**

In Ireland, the “Healthy Ireland” national framework contains health literacy as a priority area\textsuperscript{12}. Public Health England advocates the introduction of health literacy into school curricula and strategies to promote effective communication with those at risk of limited health literacy, with the aim to reduce health inequalities\textsuperscript{13}. The U.S. Office of Disease Prevention and Health Promotion has produced a national health literacy action plan which aims to improve the health literacy skills in formal education, on the one hand, and to deliver health care that is health literacy friendly, on the other hand\textsuperscript{14}. In Canada the Public Health Agency of Canada (PHAC) produced an expert panel report on health literacy and concluded that policy and practice to improve individual health literacy and reduce barriers to health literacy should be accompanied by evaluation and research of said policy and practice\textsuperscript{15}.

These policies are informed by population data on health literacy, evidence confirming the mismatch between health literacy skills of patients and the literacy demands of modern-day (complex) health care services, and evidence, which is limited, of the impact of a number of interventions, to enhance patients’ health literacy skills and/or make our health services more health literacy friendly. These goals
aim to improve patient self-management skills, empower patients to be active participants in their health care and, ultimately, improve health outcomes. Acknowledging the gap in the research on health literacy interventions, many of these policies rationalise their recommendations on interventions, by asserting “It makes sense...” or similar phrases. Indeed the wider community of health literacy stakeholders does agree that it makes sense to adapt communication techniques such as the ‘teachback’ method, avoid the use of medical jargon and use health literacy guidelines when preparing written patient information. It is also clear that there is a need for large-scale, robust research to confirm if these, and possibly, other interventions lead to improved health outcomes.

Future research in health literacy must also address gaps in our understanding of the pathways and intermediate steps linking socio-economic factors, health systems factors and other factors to health literacy and health outcomes. Whether health literacy is an independent predictor of health outcomes under all circumstances, or, as well may be the case, under specific circumstances, when other socio-economic, patient and/or system factors are suboptimal, and how these factors interact with each other, needs to be explored further. It is prudent that future research feeds into the conceptual model by Paasche and Wolf, with the ultimate goal of determining which interventions are effective in which settings and under which conditions, informing policy and decision makers, resulting in greater health literacy, improved health outcomes and reduced health inequalities.

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