Improving health literacy in clinical and community populations

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Evolution of the concept of health literacy

The past 25 years has seen extraordinary growth in interest in health literacy among researchers, policy-makers and practitioners. This interest has been underpinned by academic debate about the concept, definition and measurement of health literacy, and further strengthened by a growing volume of research that has investigated the relationship between health literacy and a wide range of health and social outcomes. A smaller but growing number of studies report on interventions to address the practical challenges of low health literacy in clinical settings, and describe approaches to improving health literacy in different clinical and community populations.

The reasons for this rapid expansion in interest are not hard to understand. It has long been established that low literacy in a population is associated both directly and indirectly with a range of poor health outcomes. Indirectly, low literacy is often linked to poor socioeconomic circumstances, and this, in turn, is associated with adverse effects on health that are independent of other risk factors. The World Health Organization (WHO) Commission on the Social Determinants of Health identified literacy as having a ‘central role’ in determining inequities in health in both lower- and higher-income countries (CSDH, 2008). Research conducted mainly over the past 20 years has also clarified the relationship between low literacy levels and declining use of available health information and services. This is observable in relation to responsiveness to health education, the use of disease prevention services and in poor self-management of chronic disease (Berkman et al, 2011).

This chapter draws mainly on literature relevant to adults across the life course, but has findings that are also relevant to younger people. It shows that improving health literacy involves more than the transmission of health information, although this remains a fundamental task. It demonstrates that helping people to develop confidence to act on knowledge and the ability to work with and support others will best be achieved through more personal forms of communication in clinical settings, and in populations, through community-based educational outreach. The goal of promoting greater independence in health decision-making can
be achieved through a more sophisticated understanding of the potential of education to strengthen both personal and community action to improve health. The chapter concludes that developing health literacy in this way will support more comprehensive options for health improvement, disease prevention and for successful self-management among individuals with established illness.

**Literacy and health literacy**

Literacy is generally understood as having two distinct components – those that are task-based and those that are skills-based. It can be measured in absolute terms by distinguishing between those who can perform the tasks of reading and writing basic text and those who cannot, and in relative terms by assessing the skill differences between those who are able to perform relatively challenging literacy tasks and those who are not able to do so (NAAL, 2003). These distinctions can also apply to numeracy skills. Individuals with higher levels of general literacy (high-level skills in reading, writing and understanding text) are more able to apply their skills in situations requiring specific content knowledge or in new and unfamiliar contexts.

Literacy is not a fixed asset. It can be improved through education, and is both content- and context-specific. Although the possession of generic literacy skills in reading, writing and understanding text improves the ability of an individual to access, understand and act on new information, it is no guarantee that a person can consistently apply their skills in situations requiring specific content knowledge or in unfamiliar settings. In this context, more specialist knowledge and more specific skills may be required. This understanding of the dynamic nature of literacy has led to the recognition of different specialist literacies, such as financial, science or media literacy. This distinction reflects the fact that individuals have varying capacity to apply their general literacy skills in different contexts.

**Health literacy** may be considered one of many domains of literacy. Health literacy can be described as the possession of literacy skills (reading and writing) and the ability to perform knowledge-based literacy and numeracy tasks (acquiring, understanding and using health information) that are required to make health-related decisions in a variety of different environments (home, community, health clinic). It has been defined and conceptualised in multiple ways (Peerson and Saunders, 2009; Sørensen et al, 2012), but is ultimately based on an observable set of skills that can be developed and improved through effective communication and education.

**Functional, interactive and critical health literacy**

These differences in skills have been categorised as *functional, interactive and critical health literacy* (Nutbeam, 2000). Such a classification is derived from mainstream literacy studies and has the advantage of signalling the impact that differences in skill levels may have on health-related decisions and actions. *Functional health literacy* describes basic-level skills that are sufficient for individuals to obtain
relevant health information (for example, on health risks and on how to use the health system), and to be able to apply that knowledge to a range of prescribed activities. Individuals with these basic health literacy skills are generally able to respond well to education and communication based on factual information on health risks, and on how to use the health system.

*Interactive health literacy* describes more advanced literacy skills that enable individuals to extract health information and derive meaning from different forms of communication; to apply new information to changing circumstances; and to engage in interactions with others to extend the information available and make decisions. Individuals with these more advanced health literacy skills are well positioned to respond to education and communication that is focused on the development of personal skills and improved personal capacity to act independently on knowledge, and strategies designed to improve motivation and self-confidence to act on information obtained. This type of health education is generally more interactive and often delivered through more structured educational settings (for example, school health education, well-designed interactive websites).

*Critical health literacy* describes the most advanced literacy skills that can be applied to critically analyse information from a wide range of sources, and information relating to a greater range of health determinants, and to use this information to exert greater control over life events and situations that have an impact on health. This may include not only information on personal health risks, but also on the social, economic and environmental determinants of health. This type of health literacy can be more obviously linked to population benefit alongside benefits to the individual.

Such a categorisation also helps to distinguish between communication and education that is task-based – designed to develop specific skills to manage prescribed activities (medication adherence, behaviour change), and interventions that are skills based – designed to develop generic, transferable skills that equip people to make a range of more autonomous decisions relating to their health and to adapt to changing circumstances.

The concepts of interactive and critical health literacy connect closely to modern concepts of health promotion. In this case, health literacy has been viewed as a personal and population asset offering a route to greater autonomy and control over health decision-making (Nutbeam, 2008; Pleasant and Kuruvilla, 2008; Mårtensson and Hensing, 2012). It is through this focus on skills development and empowerment that the concept of health literacy has the potential to have a distinctive influence on the purpose and methodologies of health education and communication. For more information on critical health literacy, see Chapter 11, this volume.

**Health literacy in context**

More recently, greater emphasis has also been given to better understanding the impact of the context in which people are required to use their health literacy
skills and capabilities. Health literacy is mediated by the situational demands and complexities that are placed on people. Obtaining nutritional information from a food label is a quite different experience from receiving complex, jargon-laden instructions on how to manage diabetes, and quite different again from receiving information on childbirth at an antenatal clinic. Even a person with a high level of health literacy may experience real challenges in applying those skills in an environment (like a hospital) or in interacting with a person (like a doctor) that they find unfamiliar and intimidating. This has led to much greater attention being given to ways of reducing the situational demands and complexity in which an individual is making a health decision. Research in the emerging area of organisational health literacy explores the features of health-literate organisations as well as the barriers preventing these features from being addressed (Brach et al, 2012; Palumbo, 2016; see also Chapters 8 and 31, this volume). A range of models and practical strategies has been proposed to help create health-literate organisations that are implementing practical strategies to reduce the environmental demands on people engaging with those organisations and health professionals. While these strategies range from modification of the language used in various forms of communication through to changes in the organisation and management of health services, there is limited evidence to support recommendations being made particularly in terms of organisational improvements leading to better health outcomes. Brach and colleagues (2014) highlighted the important role of the health professional within the complexity of a health-literate organisation, but also outlined their dependence on organisational policies and infrastructure to achieve health literature communications with.

Figure 14.1 (adapted from a model proposed by Parker, 2009) provides a summary of this dynamic relationship as a product of personal skills and situational demands. This model also helps to illustrate how observable differences in health literacy emerge as a consequence of differential exposure to health information content and communication media that are designed to improve personal skills and ability, subsequently moderated by the environment in which a person applies their literacy skills.

Figure 14.1: Health literacy as a product of personal skills moderated by environmental complexity
Improving health literacy in clinical populations

In response to surveys that have indicated high rates of poor health literacy in populations, governments and national agencies in countries as diverse as the US, China, Australia and some European nations have developed national strategies and targets to improve health literacy in their populations (Chinese Ministry of Health, 2008; USDHHS, 2010; ACSQHC, 2014; Heijmans et al, 2015). As these policies and other government responses have emerged, increasing attention has been given to interventions to address the challenges posed by low health literacy in populations and to improve health literacy in populations.

Health literacy can be improved through the provision of information, effective communication and structured education. It can be regarded as a measurable outcome to health education or patient education. Improvements in health literacy can be assessed through the measurement of changes to the knowledge and skills that enable well-informed and more autonomous health decision-making. Differences in communication methods, media and content will result in different learning outcomes and associated behavioural and health outcomes. In turn, individual responses to information and education will be moderated by the environment in which they occur.

To date, the majority of research into health literacy has focused on the development of effective interventions for use in clinical practice. There are compelling reasons for this in healthcare systems where there is a need for more effective prevention, a commitment to patient-centred care, and greater than ever dependence on patient self-management of chronic conditions. Research from the European Health Literacy Survey (HLS-EU) has demonstrated that there is a strong social gradient in the population, with lower levels of health literacy much more common among the socially and economically disadvantaged – indicating that those with greatest need are generally least able to respond to the demands of the healthcare system (Sørensen et al, 2015).

There are very practical challenges to overcome in the implementation of strategies to minimise the impact of low health literacy in hospitals and clinics. The restricted time available in clinical consultations will often limit communication to factual information on health risks and on how to use medications and healthcare services. For these reasons, patient communication will often be directed towards well-defined outcomes – such as compliance with the use of prescribed medicines. Where more structured patient education can be offered in the clinic, it can also contribute to the development of a wider range of knowledge and skills necessary for successful self-management of non-communicable diseases (NCDs) such as diabetes and heart disease, and related clinical risks such as hypertension, elevated cholesterol or obesity (Wallace et al, 2009).

As indicated earlier, the effects of poor health literacy can be mitigated by improving both the quality of health communications and by improving the sensitivity and practical skills of health professionals to the impact of low literacy on individuals. In addition, increasing attention is being given to simplifying...
the organisational and administrative complexities faced by patients in using the healthcare system. This is leading to modifications to patient registration procedures, greater flexibility in making appointments and improved way-finding in hospitals and health clinics.

Practical responses to the challenges of poor health literacy can be observed in a range of adaptations to traditional patient and population health education methods in print, broadcast and increasingly in digital and mobile communication, as well as closer attention to improved interpersonal communication between clinicians and their patients.

**Improving health literacy through modified patient education**

There are a growing number of examples of different approaches to patient education that are intended to improve functional health literacy and related clinical outcomes. The great majority of these studies are using the health literacy concept to better understand the likely response of patients to clinical advice and instruction, the impact on compliance and longer-term success in disease management. In this context, low health literacy is understood as a risk to successful clinical care.

As the number of reported intervention studies has increased, there have been some helpful reviews (Sheridan et al, 2011; Manafo and Wong, 2012; Taggart et al, 2012). In an excellent review including mainly clinical interventions, Sheridan et al (2011) report on the outcomes of 38 intervention studies. This review highlights common features of successful interventions including mixed strategy and high-intensity communications, the use of theory, pilot testing, an emphasis on skill building and delivery by a health professional. They also emphasise the use of teach-back methodologies that have been shown to be effective in other literacy interventions. Teach-back typically involves asking a client to explain in their own words the information or advice they have been given to demonstrate their understanding of the important information. Importantly, it places the onus on service providers to confirm they have communicated information effectively. Teach-back has been reported to be effective in a range of contexts, especially in obtaining informed patient consent (Wadey and Frank, 1997; Fink et al, 2010). It has been used to educate, assess learning and improve recollection of health information. It may also help health services improve client satisfaction and meet their expectations.

Taken as a whole, these reviews provide broadly consistent evidence that comprehension of health information and advice among individuals with low health literacy can be improved through modifications to communication, and that intensive mixed-strategy interventions (for example, combining adapted communications with behavioural skills coaching) produces improved health outcomes. These improved outcomes include reduced reported disease severity, unplanned emergency department visits and hospitalisations. Despite evident progress, the constraints on patient education in a clinical setting often mean that
the most commonly used educational methods still tend to be more functional, and less likely to enable interactive communication or support a high level of autonomy in decision-making. Good progress has been made, but much remains to be achieved.

**Improving health literacy in community populations**

Just as formally organised education is the main route to improved literacy in populations, it follows that organised and structured health education has the potential to improve general, transferable health literacy skills in individuals and community populations. Health education has been an essential component of action to promote health and prevent disease for more than a century. Many campaigns have been and continue to be characterised by their emphasis on the transmission of information, often based on a relatively simplistic understanding of the relationship between communication and behaviour change.

These interventions are mostly based on the well-established knowledge/attitudes/behaviour (KAB) conceptual framework, and do not always reflect the skills-directed methods and learning theories that are required to develop interactive and critical health literacy. Over time, it has become clear that campaigns that focused only on goal-directed transmission of information – developing functional health literacy – were not achieving the results that had been expected in terms of their impact on health behaviour. In addition, where health education programmes have been found to be effective, these successes have been most observable among the most literate and economically advantaged in the community. We can observe that higher levels of general education and literacy, personal skills and economic opportunity significantly improve the capacity of people to receive and respond to health messages communicated through traditional media. As a consequence, interventions that rely heavily on KAB communication have struggled to achieve substantial and sustainable results in terms of behaviour change, and have made little impact in terms of closing the gap in health status between different social and economic groups in society.

As a tool for health promotion and disease prevention, health education has been considerably strengthened by the development of more sophisticated, theory-informed interventions over recent decades (Nutbeam et al, 2010; Suggs et al, 2015). These theories are not only focused on the transmission of information (although this remains important) but also the development of personal and social skills that fit with contemporary concepts of interactive and critical health literacy.

These contemporary programmes also integrate the social context of behavioural decisions, and enable people to develop the transferable personal and social skills that are required to make health-related decisions at different times and in different contexts across the life course. Several theories of behaviour change have helped to identify and explain the complex relationships between knowledge, beliefs
and social context. These provide practical guidance on the content, sequencing and delivery of health education programmes to improve interactive and critical health literacy, and support positive health-related decision-making in a variety of circumstances, emphasising the following:

- The importance of knowledge and beliefs about health. All models imply a central role for health education, and refer to individual knowledge about health. They emphasise the importance of personalising health information, and stressing the short-term consequences of decisions that communication is more immediately relevant to an individual.
- The importance of self-efficacy: the belief in one’s competency to take action. Health education that enables the development of interactive and critical health literacy skills, for example, through personal observation, supervised practice and repetition, is often vital to sustainable skills development.
- The importance of perceived social norms and social influences related to the value an individual places on social approval or acceptance by different social groups. The influence of social role models, family and peer groups is emphasised here, and the potential for individuals with higher-level health literacy skills to positively influence others is also recognised.
- The importance of recognising that individuals in a population may be at different stages of change at any one time. This understanding highlights the sequencing and targeting of health education messages to the right person at the right time across the life course.
- The importance of shaping or changing the environment or people’s perception of the environment as an important element of health education, reflecting the importance of interventions to reduce situational demands and complexity.

Access to a wider range of communication tools and methodologies that have evolved with the development of the internet and mobile communications have both broadened the repertoire of health communication and education and made it more complicated (Viswanath et al, 2015). Many people have a far wider range of communication channels open to them. This enables access to a wide variety of sources of information and opens opportunities for more personalised and tailored health communication. It also means that those wishing to communicate health messages are entering a more crowded marketplace for attention, and challenges health consumers to discriminate between different sources of information. There are increasingly sophisticated online health education programmes that are targeted to specific populations and capable of a high level of personalisation. These generally make good use of the theoretical models described earlier to guide content and sequencing of messages. There are a growing number of eHealth and mHealth programmes that are addressing specific risks and/or disease management strategies for NCDs (Watkins and Xie, 2014; Urrea et al, 2015; Jacobs et al, 2016).
Health education and health literacy in context

Figure 14.2 provides a logic model for health promotion that illustrates the relationship between health education and health literacy, and the place of health education and health literacy in the wider context of a range of potential interventions for health promotion and disease prevention (Nutbeam, 1996, 1998).

In the model the end-stage of interventions is described as **health and social outcomes**, usually expressed in terms of reduced mortality, morbidity and disability, and may also incorporate social goals related to greater equity in outcomes. **Intermediate outcomes** in the model represent the most immediate determinants of these health and social outcomes. Personal behaviours such as smoking or physical activity may increase or decrease the risk of disease, and are summarised as **healthy lifestyles** in the model. **Healthy environments** consist of the environmental, economic and social conditions that can both impact directly on health as well as support healthy lifestyles – for example, by making it more or less easy for an individual to smoke, adopt a healthy diet or engage in physical activity. Access to, and appropriate use of, health services are acknowledged as important determinants of health status, and are represented as **effective health services** in this model.

**Figure 14.2: Logic model for prevention planning**
Health promotion outcomes represent those personal, social and structural factors that can be modified in order to change the determinants of health (that is, intermediate health outcomes). These outcomes also represent the most immediate target of planned health promotion activities. Within this level of the model, health literacy refers (as above) to the literacy, cognitive and social skills that enable individuals to access, understand and use information to promote and maintain good health – typically the outcome of health education activities. Social action and influence describes the results of efforts to enhance the actions and control of social groups over the determinants of health. These may also be influenced by health education and communication as well as other forms of community development. Healthy public policy and organisational practices are the result of efforts to overcome structural barriers to health – typically the outcome of government action that may lead to environmental, organisational, policy, regulation and/or legislative change. Success in the introduction of comprehensive tobacco control legislation in many countries represents a contemporary example of this outcome.

The most effective health promotion and disease prevention programmes consist of interventions targeted at all three of the factors identified as health promotion outcomes above. For example, a programme to promote healthy eating might consist of health education directed at individuals about basic food groups, to develop practical skills in food preparation and selection, alongside community and policy actions to improve access to healthier food choices through supply-side intervention. These could include, for example, efforts to improve the food choices available in school and worksite canteens, and interventions with food retailers to improve the supply and promotion of healthier food choices.

This logic model also provides the bridge between an intervention (described as health promotion actions) and the goal of an intervention (modification of the determinants of health). These health promotion outcomes are the bridge between what we do and what we are trying to achieve in health promotion interventions. These health promotion actions in the model include health education and communication, organised efforts to mobilise people’s collective energy, resources and skills towards the improvement of health, and government actions that promote health.

Use of this model places health education into the wider context of health promotion, and importantly, positions health literacy as a key outcome from health education. The arrows in the model illustrate potential relationships. There is the obvious linear relationship that links health education, health literacy (1) and health behaviour (2), and to more effective use of health services (3). But other relationships can also be planned and observed. Health education can also be directed towards the development of relevant interpersonal and social skills. People who have better developed health literacy will thus have skills and capabilities that enable them to engage in a range of health enhancing actions not only in making positive decisions about their own health, but also enhanced capability to influence others (family, community) towards healthy decisions (4). This influence may range
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across encouraging behaviour change, moderating public opinion or even collective action to influence political processes and decisions in favour of health (5).

Health education to improve health literacy

Health education remains a crucially important tool in public health, but the evidence from numerous studies highlights how emphasis has to shift away from promoting simple compliance with pre-determined behavioural goals to the development of a set of empowering personal skills that enable engagement in a range of actions that can protect and improve health. The growing interest in the concept of health literacy has emerged from this more sophisticated understanding of health education.

To date, there are relatively few reported interventions that incorporate the concepts of health literacy described above. In contrast to the rapid growth in experimental research in clinical settings, a recent review of studies with community populations found relatively few that were actively using the concept of health literacy in their design and evaluation (Nutbeam et al, 2017). Those identified in the review covered a range of settings, including online programmes, adult education, school and a supermarket-based multimedia programme. All included education or communication strategies designed to develop functional health literacy skills directed towards specific improvements in knowledge and understanding, and most were also directed towards pre-defined behavioural responses. Most also had elements that were compatible with the development of interactive and/or critical health literacy skills. Educational methods varied considerably from formal classes, home visiting and study circles, through multimedia and eHealth/online interventions (Nutbeam et al, 2017).

Encouragingly, the interventions demonstrated the potential to meet the needs of specific adult population groups throughout the adult life course (parents, adult learners, older people), and addressed a range of topical health issues including food choices, physical activity and parenting. Most were also targeted at populations and in settings that have a higher proportion of individuals with lower health literacy. Although this review found few reported studies, it did highlight a pipeline of studies underway that indicate a growing base of evidence that will enable us to better understand how to organise and deliver more effective population interventions in the future.

Overall, the authors report that the concept and rhetoric relating to health literacy has excited the interest of public health researchers, practitioners and policy-makers, but that this interest has not yet been converted into substantive advances in public health interventions.

Conclusion

In this chapter we have identified the rapid increase in interest in health literacy over the past 15 years, and how this interest is transitioning from conceptual and
observational studies to practical interventions to improve health literacy and reduce the impact of poor health literacy, especially in clinical settings. It is not difficult to understand why health literacy has become a subject of wide interest in the past decade. For researchers interested in health and disease causality, health literacy offers a convenient and logical summary definition of a pre-existing condition/risk that can be used to understand and explain variation in health and disease outcomes. There is a substantial and growing literature that confirms the importance of the concept in clinical practice and public health. For those interested in the evaluation of information, education and communication interventions, health literacy has long been proposed as a useful outcome measure (Nutbeam, 1998).

For clinicians, work over many years, mainly in the US, has established health literacy as an identifiable and manageable risk in clinical care, of particular importance in the management of long-term and complex conditions that depend on successful patient engagement and management. For public health practitioners, health literacy is conceptually attractive in its fit with contemporary health promotion, understood as a personal ‘asset’ that can be developed through educational and other interventions to support greater personal and community control over a range of determinants of health. For policy-makers, health literacy has the attraction of being a sufficiently flexible concept to be used to support a full spectrum of policy positions.

All of this attention is undoubtedly supporting advances in our knowledge and understanding of the concept, its relative importance as a health determinant, its measurement and its potential for use to guide clinical practice, public health and public policy. However, the academic interest and attractive rhetoric surrounding health literacy needs to be tested more often and more systematically through intervention experimentation in a wide range of populations using valid and reliable measurement tools.

References


