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## Perspectives

# Health literacy as a social vaccine in the COVID-19 pandemic

Orkan Okan <sup>1,\*</sup>, Melanie Messer <sup>2</sup>, Diane Levin-Zamir<sup>3,4</sup>,  
Leena Paakkari <sup>5</sup>, and Kristine Sørensen <sup>6</sup>

<sup>1</sup>Department of Sport and Health Sciences, Technical University Munich, Uptown München-Campus D, Georg-Brauchle-Ring 60/62, 80092 Munich, Germany, <sup>2</sup>Faculty I, Department of Nursing Science II, Trier University, Trier, Max-Planck-Straße 6, 54296 Trier, Germany, <sup>3</sup>Department of Health Education and Promotion, Clalit Health Services, 101 Arlozorov St., Tel Aviv, Israel, <sup>4</sup>School of Public Health, University of Haifa, Mount Carmel, Haifa, 31905, Israel, <sup>5</sup>Faculty of Sport and Health Sciences, University of Jyväskylä, P.O.Box (L) 35, 40014 Jyväskylä, Finland and <sup>6</sup>Global Health Literacy Academy, Viengevej 100, 8240 Risskov, Denmark

\*Corresponding author: E-mail: [orkan.okan@tum.de](mailto:orkan.okan@tum.de)

## Summary

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a novel virus in the coronavirus family, causing the coronavirus disease (COVID-19). Biomedical vaccines are key but alongside biomedical vaccines, a social vaccine can be similarly useful to prevent infection from SARS-CoV-2, if applied as a health promotion strategy. In order to slow down and control the spread of SARS-CoV-2, applying the social vaccine concept should be considered in parallel. From a health promotion perspective, a social vaccine is a process of social and political mobilization driven by governmental and non-governmental organizations aiming at populations by applying interventions such as health communication, education and mass media campaigns as well as determinant-based programs to address environmental factors influencing personal behavior and community capacities to cope with and overcome the societal burdens of COVID-19. In this context, health literacy is significant, as seen in the role it plays in empowering citizens during the COVID-19 pandemic and enabling them to deal with health information considering COVID-19. As a public health strategy, health literacy as a social vaccine will enable individuals and communities to mitigate the spread of the virus by understanding and applying information as provided through governments and health authorities. The aim of this article is to explore health literacy as a promising social vaccine and opportunity to utilize social vaccination and thus be considered as a key public health approach—both bottom-up and top-down—to support the combat of COVID-19 and future states of emergency.

**Key words:** health literacy, social vaccine, COVID-19, infodemic, non-pharmaceutical intervention

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## BACKGROUND

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a novel virus in the coronavirus family, causing the coronavirus disease (COVID-19), and first reported in December 2019 in China. It has since evolved into a pandemic that created a social and economic crisis, as well as a humanitarian catastrophe (Casadevall and Pirofski, 2020; European Centre for Disease Prevention and Control, 2020; Liu *et al.*, 2020). The rapid spread of SARS-CoV-2 and COVID-19 throughout the world has put both the health care system and everyday life under serious stress (Cao *et al.*, 2020; Baden and Rubin, 2020; Center for Systems Science and Engineering, 2020; Dong *et al.*, 2020). The pandemic has proven to be of such magnitude and gravity that even after 2 years it still adversely affects societies. Throughout the year 2020, the world was highly invested in searching for a vaccine against SARS-CoV-2 (World Health Organization, 2020a). In most countries, vaccination delivery and roll-out began in 2021 and is still ongoing (Burki, 2021; Sachs *et al.*, 2021).

Biomedical vaccines are considered a cornerstone of medicine and public health and one of the most effective methods of controlling and preventing communicable diseases (World Health Organization, 2013; Ammon and Prats Monné, 2018; World Health Organization, 2019b). The health promotion movement, amongst others, has introduced the social vaccine as a complementary measure to traditional biomedical vaccines to address populations and the determinants of health (Baum *et al.*, 2009). From the health promotion perspective, Baum and colleagues define a social vaccine as “a process of social and political mobilization which leads to increased government and other institutions’ willingness to intervene with interventions, applied to populations rather than individuals, aimed at mitigating the structural social and economic conditions that make people and communities vulnerable to disease, illness and trauma” (Baum *et al.*, 2009).

The aim of this article is to highlight that health literacy can be considered a social vaccine which can contribute to empowering citizens through collective efforts to show and apply solidarity, to build collective consciousness and to adopt practices to protect people from SARS-CoV-2 and COVID-19 and their adverse effects. In this regard, health literacy is linked to literacy, knowledge and motivation and represents the ability to find, understand, appraise and apply health information to make decisions regarding health care, disease prevention and health promotion (Sørensen *et al.*, 2012). As such, health literacy can be regarded as a key element of

non-pharmaceutical interventions (NPIs) used in emergency responses. According to the World Health Organization (WHO), NPIs are the first line of defence in order to contain the spread of a virus and disrupt the transmission chain, including hygiene, physical distancing and further behavioural measures (World Health Organization, 2019a). Health literacy as a social vaccine is presented as a process to develop the abilities of individuals and communities to adopt social and economic structures and processes in such a way that they are conducive to health. It is relevant for supporting citizens to create solidarity and collective responsibility in adopting practices that promote collective good, as stressed in the social vaccine concept (Baum *et al.*, 2009). The pandemic has disrupted the existing order of society and hence, developing a collective public health consciousness becomes imperative to cope with it from a personal as well as a societal perspective.

## SOCIAL VACCINE IN THE CONTEXT OF COVID-19

A social vaccine can be any intervention in relation to public health that facilitates and enhances communities’ abilities to take “actions that address social determinants and social inequities in society, which act as a precursor to the public health problem being addressed” (Thomas, 2006). This would include interventions that develop people’s abilities to take a critical stance, to take social responsibility and to contribute to collective good. In this sense, governments and health agencies play a key role in the social vaccine approach (Baum *et al.*, 2009).

While a biomedical vaccine transports the biological information for the immune system to respond to infectious vectors (World Health Organization, 2019b, 2020b), such as the coronavirus, a social vaccine includes providing practical information and structural programmes to respond to personal, community, and societal needs. A social vaccine also enables raising (health) consciousness about the need for joint efforts and commitment for people to adapt their action and behaviour to apply personal and social measures to protect and prevent against infection. In the case of the COVID-19 outbreak, the social vaccine acts as a catalyst through political mobilization directed towards providing primary and emergency health care services, enhancing efforts to contain the virus, ensuring that the supply infrastructure is adequate, activating public campaigns on precautions, protective and preventive measures and setting policies in place, including legislation, to facilitate these actions. Moreover, social mobilization is

directed towards citizens will and intention more directly to facilitate access to information, follow recommendations on protective, preventive and solidarity-based behaviour in favour of their own and greater good, and eventually for them to take health literate action. Notably, a social vaccine approach requires a multi-sector approach to achieve wellbeing, and to address and mitigate the structural drivers of health inequities to safeguard a life with security, opportunities that are fair, a planet that is habitable and supports biodiversity and governance that is just (Baum and Friel, 2020).

## HEALTH LITERACY AS A SOCIAL VACCINE

By “improving people’s access to health information and their capacity to use it effectively, health literacy is critical to empowerment” (Nutbeam, 1998) and in the context of social vaccine, critical health literacy particularly plays an important role as it is “oriented towards supporting effective social and political action” (Nutbeam, 2000), and could therefore serve as a driver for political and social change (Sykes *et al.*, 2013). The ability to engage with and act upon information is closely associated with empowerment (Nutbeam, 2000), and thus health literacy can promote counteracting, for example, the COVID-19 infodemic, help increase the capacities of individuals to navigate the digital realm and facilitate making digital health service and health information providers more responsible towards individual needs (Okan *et al.*, 2020a, 2020b; Sørensen, 2020; Dadaczynski *et al.*, 2021).

Health literacy as a social vaccine also acts as a means to understand and apply information about protection against the coronavirus. This refers to culturally appropriate and socially sensitive information about required health behaviour (e.g. hygiene, handwashing, physical distancing, wearing a face mask) in order to support the COVID-19 strategy of governments and health authorities. Furthermore, the development of health literacy competencies serves as a relevant means to equip citizens and institutions to push forward political and social change to secure equality in all the efforts to handle the pandemic and to take collective actions based on solidarity in efforts to prevent the spread of the coronavirus. Drawing on political and social change, health literacy promotes dimensions such as critical thinking, ethical viewpoints, behavioural insights and social responsibility (Paakkari and Okan, 2020; Okan *et al.*, 2020b).

Since health literacy is targeting individuals, populations and organizations (Trezona *et al.*, 2017; Pelikan, 2019), it can be used as a public health strategy to

reach whole communities and settings (Sørensen *et al.*, 2015; Levin-Zamir *et al.*, 2021), especially those facing disproportionate exposure to coronavirus effects due to belonging to disadvantaged population groups. The relational approach to health literacy suggests that the individual’s abilities have to meet the demands and complexities of the environment with which the individual interacts (Parker and Ratzan, 2010), and the other way around (Sørensen *et al.*, 2019). Thus, health literacy focuses on the importance of the development of organizational capacities (Farmanova *et al.*, 2018; Pelikan, 2019) and responsiveness of conductive environments (Trezona *et al.*, 2017). Applying this system-level thinking regarding health literacy is paramount when applying health literacy as a social vaccine, because such approach involves intervening structural drivers, systemic complexities and equity barriers that affect individual and population health outcomes, especially during crisis like the COVID-19 pandemic.

## THE ROLE OF CRITICAL HEALTH LITERACY AND PUBLIC HEALTH LITERACY IN HEALTH LITERACY AS A SOCIAL VACCINE

Health literacy as a social vaccine supports bottom-up and grass roots movement through both critical health literacy and public health literacy. The first empowers individuals to demand decision- and policy makers to launch programmes and measures to support population health, social, and economic outcomes and safety during pandemics (Abel and McQueen, 2020), and the latter addresses decision- and policy makers to support, facilitate and implement structural changes, especially aiming at sustaining health equity (Freedman *et al.*, 2009). In this sense, critical health literacy and public health literacy are also complementary approaches which are both needed and should be applied at once.

Critical health literacy is a complex skill set (Nutbeam, 2008; Sykes *et al.*, 2013), the objectives of which are closely related to the aims of health literacy as a social vaccine as it empowers people to act upon the social, political, commercial and economic determinants of health. Through critical health literacy, people become increasingly aware of a situation and associated consequences as well as being able to exercise critical judgement regarding, for example, the infodemic as well as current strategies and measures to control the pandemic. In turn, they can collectively join forces in solidarity to abate epidemic and pandemic emergencies, urging political and economic decision makers to change structures in ways that support population

health outcomes based on the best available evidence. For example, in the early stages of the COVID-19 pandemic when economies shut down, many members of civil society in general, and more specifically, people living in vulnerable situations and marginalized groups faced loss of employment, loss of income, mental health problems, insecurity and worries regarding the future. In some countries, people also lost their health insurance prohibiting access to health care services. Collective action based on critically health-literate individuals can influence action to change government behaviour and demand change in structural conditions. A Hong Kong-based case has shown that among the attempts to handle the pandemic, success was achieved through community-based mobilization instead of full reliance on the government (Wan *et al.*, 2020). Furthermore, Wan and colleagues have stated that “public distrust of the government may not necessarily lead to a failure of pandemic control. In contrast, scepticism of ineffective policies and the presence of a strong civic society may contribute positively to pandemic management” (Wan *et al.*, 2020). This is exactly what the development of health literacy as a social vaccine can produce—a (constructive) health awareness that seeks to improve the status quo through community involvement and joint efforts.

Public health literacy as an integral component of health literacy as a social vaccine moves the focus of actions from the individual to collective action aiming at changing social, economic and political circumstances (Freedman *et al.*, 2009). Public health literacy is defined “as the degree to which individuals and groups can obtain process, understand, evaluate, and act upon information needed to make public health decisions that benefit the community” (Freedman *et al.*, 2009). During the COVID-19 pandemic, the population tends to rely on their governments and health authorities to provide both COVID-19 based information and services especially in relation to disease prevention, early detection and how, when and where to receive health care and vaccination. In order to protect populations and to slow down the spread of SARS-CoV-2 and COVID-19, governments need to facilitate reliable information on the virus, its transmission, the disease, as well as the preventive and protective measures applied along with social and economic programmes put in place to mitigate the impact of the pandemic (Okan *et al.*, 2020b). However, as was learned from controlling the spread of the Ebola virus, instead of communicating based on valid information on the virus and raising awareness of it, “actionable change will involve approaches that promote local ownership of the response based on community-decided

actions that are protective while consistent with local interests” (Skrip *et al.*, 2020), which is at the core of public health literacy.

## NEEDED ACTION

The public needs trustworthy information on how to maintain and adopt a health-promoting lifestyle during the pandemic, both physical and mental health related, and the associated lockdown and physical distancing when they spend most of the time alone in isolation. Furthermore, the government is dependent on the public to carry out the recommendations in order to mitigate the disease, while the public is dependent upon each other for collective action in preventing infection as well as on the government to implement policies and actions to support this (Paakkari and Okan, 2020). Yet, in the age of digital information received on a constant basis particularly during emergency crises, digital health literacy in social context should not be overlooked (Levin-Zamir and Bertschi, 2018), emphasizing the need for critical skills to identify misinformation spread on the internet (Sørensen, 2020) and action to counteract the infodemic (Calleja *et al.*, 2021). Health communication and campaigns on COVID-19 protection, prevention and news addressing populations do so by using digital technologies and through the Internet. People use devices such as smartphones, laptops and tablets and software such as social media apps and news platforms, where information is presented digitally, requiring digital competencies to securely navigate these environments. Accounting for digital spaces and the requirements they put upon people when navigating in and interacting with the digital realm must be integral to any health literacy approach.

The ability of the majority of the population to critically evaluate their health status, adhere to health advice and different recommendations such as limiting physical contacts and maintaining hygiene are essential for success. Governments and health authorities have the responsibility of providing this information, and necessary services in this regard, through health communication and mass media campaigns but moreover there is the governmental responsibility to enable a supportive environment that allows people to act upon their health without barriers or structural boundaries. Through the lens of the social vaccine paradigm, public health literacy of decision- and policy makers becomes paramount to sustain the best conditions for citizens. This also requires that governments and non-governmental organizations collaborate in order to develop and implement policy and action to facilitate uptake of information and services as

well as to increase resources for citizens to feel secure and better cope with the crisis, while ensuring that society unites during this pandemic. Shaping both information and services to the need of individuals and populations, especially proportionate to the degree of disadvantage of the most vulnerable (Commission on Social Determinants of Health, 2008; Marmot *et al.*, 2012), is therefore key to assuring that no one is left behind due to social, cultural, economic or political reasons. In order to move towards empowering citizens, accepting and acknowledging the public's dissatisfaction with the practices that are not working and encouraging them to speak out, is relevant for adopting health literacy as a social vaccine.

Both decision makers and citizens need to acknowledge that there is still much to learn on COVID-19 and on the best ways to limit it (Abel and McQueen, 2020). As Abel and McQueen aptly reflect “as difficult as it may be, health experts themselves are challenged to help the public accept uncertainty where it is a yet unavoidable fact” and at the same time “political action is difficult to define not only for the uncertainty in the scientific basis of COVID-19 but also due to the profound changes in the social conditions of dealing with infectious disease crises” (Abel and McQueen, 2020). Implementing health literacy as a social vaccine means recognizing that there is much to learn in a time dominated by uncertainty. Yet, supporting people and communities through health literacy applied as a social vaccine will help to develop the action strategies that meet the immediate and various needs of different population groups as well as take into account long-term impact.

Table 1 provides examples of health literacy as a social vaccine to slow the spread of SARS-CoV-2 and COVID-19, including health literacy action on the policy and the population levels. It supports government action by enabling citizens to contribute to national public health crisis strategies through acting reasonably and well-informed. The strategies also aim at governments and political actors and how they can make the best decisions for sustaining and increasing the health and wellbeing of their citizens. More specifically, a public health strategy geared to the diverse health literacy of the population can support the following aspects:

- accessing, understanding, evaluating and using health information
- developing a skill set that enables people to identify misleading information, false claims and fake news whether commercial or otherwise
- adhering to guidelines, recommendations, precautions and protective measures to promote health and prevent disease

- comforting and reassuring in response to fear linked to the pandemic
- taking critical stance towards current information, measures and action
- sustaining solidarity with all members of society including caring for each other and leaving no one behind, especially among the most vulnerable and high-risk groups
- being reasonable and methodical in terms of acting and behaving.

## CONCLUSION

Health literacy as a social vaccine empowers citizens during the coronavirus crisis to protect their own health and the health of the population, especially vulnerable and high-risk groups. It empowers governments and health authorities to make the best decisions for their citizens, provide the necessary health services and resources to all, and address action on the social, political, commercial and economic determinants of health. If applied consistently in the post-COVID-19 era it will also contribute to greater goals such as social and political mobilization, sustainable development and climate change. The social vaccine approach, applied to health literacy, will help strengthen the health system as health literacy plays an important role in the public health and health promotion arenas. In a health literate society, the people will be able to update themselves on new health information, exercise critical judgement, make appropriate decisions regarding health management, and take the necessary actions according to actual needs. Likewise, a health literate civil society will have the skills and motivation to call for the system to listen to the needs of the public in a trustworthy manner that enables people to take action for their health. We note that applying health literacy as a social vaccine as proposed in this article necessarily will take into consideration cultural responsiveness and appropriateness, similar to other best practices in health promotion, as there cannot be one size that fits all.

The recent emergency of COVID-19 is still active. However, the infodemic that mushroomed with the rise of COVID-19 (Zarocostas, 2020) indicates that health literacy in fact could be one of the more critical strategies to ensure effective health and risk communication from both ends—the information and service providers and users—in the battle against the coronavirus (Abel and McQueen, 2020; Okan *et al.*, 2020b; Paakkari and Okan, 2020; Sørensen, 2020; Sentell *et al.*, 2020; van den Broucke, 2020). Therefore, it is obvious that

**Table 1:** Improving health literacy as a social vaccine—example measures based on (Baum et al., 2009; Okan et al., 2020b)

Action through governmental and policy action (health literacy on the public and policy levels to initiate change and supportive environments)	Intended social vaccine effects in society (health literacy on the population and individual levels)
A. Direct health communication measures to increase and strengthen health literacy	
Guide people to find trustworthy, objective information providers, and enable them to be gate keepers and communicators of reliable health information	Directing people to reliable sources helps them to become knowledgeable and skilful in order to provide reliable health information within their social environment
Provision of information based on new and emerging evidence on a continuous basis	Keeping people informed and preparing them for the fact that interventions and recommendations might change based on new evidence
Provide information based on health literacy principles	People having information that is easy-to-access, easy-to-understand, easy-to-use, barrier-free and borderless, and messages of relevance to various groups and individuals—content-, language- and form-wise
Provide information guidelines on how to identify misinformation and fake news, including awareness to always check the source of information on various social and media channels	Critical information users able to identify misinformation and judge about information and source quality (is the source trustworthy, what is its origin, what is it about, who is the author, what is the intention, why was it shared, when was it published)
Encourage a balanced exposure to information in the media and in relation to other important activities during emergency situations	Preventing information overload and supporting individuals, families and communities in achieving a sense of wellbeing
Raise citizen (health) consciousness about causes of unhealthy behaviour and conditions and provide measures to overcome those	Enhancing citizens that are aware of their health situation and that of others as well as satisfied and feeling a sense of solidarity as the governments protects and supports all equitably
B. Direct health policy measures to create enabling, supportive, and equitable environments	
Influence action on the system-level to change government behaviour and demand change in structural conditions	Increased trust for the leadership and action, and adapted for future scenarios
Avoid blaming and populist statements, rather strengthen the well-informed responsibility of the individual and solidarity with vulnerable groups and fully include those groups in health literacy and health promotion campaigns	Increased mental health and well-being, strengthened social cohesion and more just approaches
Create social and popular mobilization to resist and combat unhealthy information practices and health policies	Resilient systems, organizations and individuals prepared and eager to raise their voice to make a change
Build empowerment and will to participate in political action to enhance health-related measures	Citizens pushing forward political and social change to secure equality in all the efforts to handle the pandemic and to take collective actions based on solidarity
Adopt regulatory mechanisms and progressive social and economic policies to enhance true health equity	A society where health and wellbeing of all citizens is taken care of, while decisions are based on the best evidence and undertaken by health literate decision- and policy-makers.
Scaling up support and resources for all citizens	Sustaining that people can maintain their livelihoods and monetary resources, avoiding that people fall into poverty and experience further adversities
Including health literacy to all policies	Ensuring that action on health literacy is available within all areas of society

governmental initiatives such as the investment in health literacy, alongside biomedical and health care interventions, constitute a complementary public health strategy to address major health threats as part of NPIs.

Inspired by Baum et al. (2009), this article suggests presenting health literacy a social vaccine due to its

important role in epidemic responsiveness. However, during processing the publication, the WHO, suggested relabelling *non-pharmaceutical interventions* to *public health and social measures* (PHSMs) because they are considered as important as vaccines and therapeutics (World Health Organization, 2021). WHO describes

PHSMs as measures or actions by individuals, institutions, communities, local and national governments and international bodies to slow or stop the spread of an infectious disease, such as COVID-19. Notably, there is a need to make a distinction and recognition of how the approaches supplement each other. Which terminology that eventually will prevail remains to be seen.

Future action and research are much needed to better understand the application of health literacy as a social vaccine mobilized by governments, decision makers, communities, health professionals, individuals and other stakeholders to empower civil society on the population levels. This also concerns the long-term perspective on health literacy as a social vaccine in a post-COVID-19 era and in relation to health care, disease prevention and health promotion in general to strengthen health literacy in societies. Health literacy is not merely a paternalistic behavioural steering tool as mentioned by critiques. On the contrary, health literacy is an asset and supports sustainable structural action through a whole of society approach which pays special attention to the needs of high-risk groups and people living in vulnerable situations. There is no doubt that health literacy has helped bending the curve of COVID-19 and will be an instrumental feature in any toolbox for response to future epidemics, pandemics and other health crisis.

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## CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

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