

Literacy in the time of Coronavirus: an Italian perspective: *Value of literacy in the context of a pandemic*

A. Della Salda¹, R. Musa¹, A. Mereu¹, C. Sardu¹, P. Contu¹

Key words: *Health Literacy, COVID-19, Asset, Infodemic, Empowerment, Social Cohesion*

Parole chiave: *Health Literacy, COVID-19, Asset, Infodemia, Empowerment, Coesione Sociale*

Abstract

Background. COVID-19 pandemic, with its dramatic impact on society, poses a challenge to Health Promotion and to its principles of empowerment, social cohesion and citizens' democratic participation in health policies. In this pressing emergency, public health strategies aimed at preventing the spread of the pandemic have been primarily oriented towards restrictive measures (travel restrictions, use of PPE) in absence of an adequate educational communication, aimed at increasing citizens' knowledge and skills in regard to the emergency context.

Aim. To offer a perspective on the Italian situation, in terms of health literacy and life skills in the context of COVID-19 pandemic, aimed not only at identifying deficits, but particularly at determining opportunities and resources (assets) – offered by the peculiar context of crisis – useful to provide citizens with the necessary tools to comprehend the criticalities linked with the emergency and to shape their behaviour to new requirements, in absence of external obligations, as well as to promote future participation of the population – both effective and informed – in a social and political context.

Methods. A non-systematic review of literature on the subject of health literacy and social cohesion in emergency contexts has been supported by a qualitative assessment, based on the model of assets and on the Italian condition in the last trimester of 2020.

Results. The scarce ability of the population to independently adequate habits and behaviour to new criticalities required by the risk of infection – as well as the necessity to suspend their empowerment and capability from government authorities to protect public health – has been firstly traced back to a widespread lack of literacy and life skills at a general population level. The current situation of crisis offers a peculiar opportunity of tools, circumstances and receptiveness to highlight such deficits, as well as an intervention on multiple fronts, in order to increase literacy and capability, both on an individual and on a community level, through inclusive and sustainable initiatives.

Conclusion. A prevention strategy based on the critical understanding of risk and risk-related criticalities is the only one which can aspire to last over time, while offering an effective tool for the safeguarding of public health, along with an opportunity of being prepared to contrast future emergencies more effectively. The development of such strategies represents one of the most significant contributions Health Promotion can offer in the time of Coronavirus.

¹ Department of Medical Sciences and Public Health, University of Cagliari, Monserrato (CA), Italy

Introduction

COVID-19, with its dramatic impact on society, poses a challenge to Health Promotion and its principles of empowerment, social cohesion and democratic participation of citizens in health policies (1, 2).

In the present global crisis, the need for rapid decision-making processes has favoured, in the first months of the spread of the infection, the adoption of an uncritical approach, mainly oriented to the application of the indications emerging from the scientific research, in the absence of a significant public debate on the subject (3-5).

Such a tendency does not involve in a public debate the main social players, simplifying the perspective and not taking into account the social, ethical and ideal values on which political choices have to be oriented. Although data and their technical interpretation provide an essential contribution in decision-making processes, this does not exempt politicians, professionals, citizens and other social players from addressing the difficult terrain of real society, in a field where situations are often confused and lacking of immediate technical solutions (6).

Especially during lockdown, public strategies were mainly oriented towards compulsory rules (home confinement, use of PPE, travel restrictions, etc.). These strategies were reinforced by sanctions and a persuasive communication, based both on emphasising the risk of disease and on recognizing the individual contribution to the collective effort. Rather than increasing citizens' skills, communication was oriented towards strengthening compliance by clarification of the rules and acquisition of basic knowledge on physical distancing and use of PPE.

Such approach, although partially justified by emergency, appears rather questionable in a phase marked by the coexistence with the virus and the attempt to reconvert normal activities in the light of a constant

infectious risk. The temporary suspension of the right to exercise concrete control over health decisions, far from being a long-term prevention strategy, may attribute a passive role to the citizen in the adherence to new rules and precautionary measures. Compliance is expected to be achieved only because of the confidence placed in professional competences. This communicative attitude results in the incarceration of daily life within rigid archetypes, unable to perceive the peculiarities of each specific context and to provide adequate responses.

Health Promotion offers an alternative perspective through an empowerment strategy based on the promotion of competences and skills, making citizens able to critically evaluate the available information and use it both to manage coexistence with the virus in their own life and to claim for an active role in the public debate.

In the Information Age, the ability to access to information of public domain is never questioned. At the same time, a low level of literacy can constitute a barrier to the fruition and thoughtful use of this information, whose circulation is no longer limited by technical deficiencies. In this perspective, the achievement of a good level of critical literacy is fundamental in the process of empowerment (7, 8).

This paper refers to health literacy as the set of cognitive and social skills that determine the individual's ability to gather, understand and use information in order to promote and maintain good health (intended as its physical, mental and social connotation) (9).

Within the Italian context, attention to health literacy-related issues has recently increased. Numerous studies conducted in recent years have enabled the adoption, validation and comparison of the various measurement tools (NVS, HLS-EU-Q16, HLS-EU-Q6, SILS) developed to assess the level of health literacy within the general population (10-14).

A recent study, conducted on a sample of eight European countries, showed that almost half of the subjects involved (47.6%) has limited levels of health literacy (15). Italian research has essentially confirmed these results, usually highlighting lower health literacy level comparing to the European average (people with limited health literacy ranging from 37,3% to 67% of the sample, varying according to the context and tools used). This value is significantly influenced by age, education level and financial resources (12, 14, 16-17). Low levels of health literacy have been associated with poor knowledge and understanding of health-related issues, chronic diseases and their management, as well as a lower ability to correctly interpret drug labels and information provided by physicians. Moreover, they have been associated with an increase in hospitalization and a corresponding reduction in prevention, an increase in health expenditure, as well as – especially in more advanced age groups – a worsening of health status, lower self-reported health and higher mortality (15-23).

In the last decades, except for some infectious diseases (first of all HIV, whose transmission is however mainly limited to the sexual sphere), in most developed countries health education was mainly focused on promoting healthy lifestyles, aiming at the prevention of non-communicable diseases (24). COVID-19 has substantially overturned this perspective, giving way to a complex scenario, whose evolution is difficult to predict.

In such uncertain context, participative emergency management, with citizens using their knowledge and skills to effectively protect their health without external impositions, represents one of the most complex challenges in facing today's crisis.

All social players are called to a public discussion which involves different skills and experiences and compares rights, values and points of view, with the aim of reconciling

different perspectives in shared visions and collective actions. This participatory approach is even more important in the time of Coronavirus, during which, more than ever, the policies adopted pervasively affect the daily life of citizens.

Consequently, the purpose of this paper is to offer a balanced perspective, aimed not only at identifying deficits – in terms of literacy and life skills – but especially at determining opportunities and resources (assets) offered by the social context and peculiar circumstances. Those circumstances are useful for providing citizens with the necessary tools to understand the critical issues related to the pandemic and autonomously adjust their behaviour to the new requirements, as well as to promote the population's future effective and informed participation in social and political action.

Methods

This paper integrates a non-systematic review of available literature investigating the link between health literacy, interpretation of given information and social cohesion – with particular reference to emergency contexts – and research, primarily aimed at identifying existing assets, in order to detect sustainable responses to COVID-19 crisis.

Morgan et al. (25) define health assets as "*any factor (or resource), which enhances the ability of individuals, groups, communities, populations, social systems and/or institutions to maintain and sustain health and well-being and to help to reduce health inequities.*" These assets can operate on an individual, social/community or institutional level as protective or promoting factors for health and well-being.

An approach focused exclusively on problems and needs leads a community to identify itself with its own deficits, denying the possibility of a significant improvement, without interventions from outside experts.

On the contrary, an approach oriented to assets enables the community to focus on its internal resources, to develop a common vision and to undertake sustainable initiatives, promoting a proactive attitude concerning pre-existing circumstances. Furthermore, it stimulates social involvement and inclusion, as well as autonomy, self-esteem, learning and empowerment (25-28).

Specifically, with reference to health literacy and in the context of COVID-19, this work will focus on the opportunities offered by the particular environmental and social circumstances, implemented or generated by the emergency.

Far from denying the challenges of the current situation, in order to promote a salutogenic vision, it has been chosen to build every assessment, starting with a model primarily oriented towards the enhancement of assets rather than on the detection of existing deficits, with the aim of encouraging full participation of citizens in the process of literacy strengthening. Such approach promotes the mobilization of resources with a high salutogenic potential, allowing to identify problems and generate solutions, while strengthening individual self-esteem and making citizens and communities less dependent on services and professionals – a goal that is well reconciled with the full individual autonomy promoted by health literacy (9, 25, 29).

Several studies underline the value of community involvement in public health initiatives (24, 30-33). It is imaginable how scarce community involvement can result in the struggle to implement and maintain an intervention (regarding health or otherwise), as well as in its poor effectiveness. This is especially important when citizens are required to act against their habits, without this requirement being accompanied by effective communication strategies aimed at strengthening literacy, in order to guarantee a greater understanding of the critical issues and motivations at the basis of decision-

making processes.

In this situation, an approach aimed at assets is even more desirable, as the mobilization of available resources encourages a productive involvement of the community in the literacy production phase. Moreover, an approach focused on assets allows to resize the expenses necessary to apply an intervention in the field of public health, as it maximizes and optimizes the use of available resources.

Accordingly, the assessment preliminarily addressed and identified the deficits, responsible for the poor civic participation of citizens, and then focused on the available assets, in order to develop a balanced perspective that offered an answer to the following questions:

Which knowledge, attitudes and/or skills should citizens possess to effectively protect their health, in the absence of external impositions, as well as in order to actively and profitably participate in the decision-making process during a major epidemic?

Which resources, skills and opportunities offered by the social, environmental and circumstantial context may serve as assets in the process of promoting health literacy during a major epidemic?

Results

Critical issues and deficits

The answer to the first question has been schematically summarized in Figure 1. The identified deficits have been grouped into nine conceptual categories for the purpose of an easier use. They can be thus defined:

1. Knowledge related to pathologies and infectious agents;

2. Practical knowledge related to the ways of infection and precautions aimed at preventing or hindering the spread of infectious diseases (including practical precautions, both physical and behavioural);

3. Knowledge of interpretation of the statistical/epidemiological data (including the ability to read and understand a graph, to estimate the weight of the received information in terms of impact and possibility of evolution);

4. Orientation to social cohesion and civic participation (including the sense of belonging, the weight of the individual's decisions regarding the community, the perception of the value of collective well-being);

5. Cognitions related to the psycho-social problems in the management of a pandemic (including the consequences deriving from the imposition of physical distancing measures over time, such as loneliness, depression, sense of abandonment, deriving from forced coexistence, exacerbation of conditions of poverty or of its perception, exacerbation of the sense of social exclusion);

6. Knowledge of economic/employment problems in the management of a pandemic (including consequences deriving from the imposition of physical distancing measures over time, such as increase in unemployment, wages reduction, reduction of capital available to freelancers and companies unable to reconvert production, increase in public costs and debt, possible increase in tax burden, evaluation of production activities necessary to cope with the emergency);

7. Ability to discern the most reliable sources of information, find news and assess/verify its reliability;

8. Intrinsic ability to critically consider and weigh the risks and benefits of the different choices;

9. Ability to interpret the received information in the cultural context to which one belongs, and to act accordingly.

The coexistence of the deficits in each of these fields has been considered the basis of the substantial lack of citizens' influence in political action, in the context of the emergency as well as the institutions' need to impose restrictive measures, sometimes

not understood nor shared by public opinion as a whole.

In order to offer a schematic definition of the topic, the emerging elements have been categorized according to a simple conceptual model, developed by incorporating the Recommendations of the European Parliament on key competences for lifelong learning (34) with the main classifications reported in literature (35).

They can be defined as follows:

- a) Health Literacy;
- b) Mathematical/Numerical Literacy;
- c) Civic Competence;
- d) Social Competence;
- e) Financial/Economic Literacy;
- f) Digital/Media/Interactive Literacy;
- g) Critic Literacy/Life Skills;
- h) Cultural Literacy.

Regarding the critical issues set out in points 1, 2 and 7, the analysis conducted in Germany by Okan et al. (2020) highlighted that more than half of the subjects (50.1%) showed low levels of health literacy related to COVID-19, and 47.8% admitted some difficulty in judging whether they could trust media information on COVID-19 or not. This confusion is significantly wider among those with low levels of health literacy (36). In the Italian context, such issues were brought out within the validation of HLS-EU-Q16, in which more than half of the sample manifested difficulty in judging the information provided by the media (13).

Comparing the suggested classification with the interpretative model of health literacy proposed by Zarcadoolas et al. (37), with reference to the bio-terroristic anthrax threat in the USA, it is evident that the discovered deficits fall substantially within the categories of Science (points 1-3), Civic (points 4-8), and Cultural Literacy (point 9). This comparison helps to underline the link of the aforementioned elements to the field of health literacy, due to the strong influence they exert on the lives of citizens, particularly in contexts of crisis.

Opportunities and resources

Alongside the determination of existing problems, in response to the second question, the team drew up a list of opportunities and resources offered by the social, environmental and circumstantial context, capable of offering concrete support for the promotion of citizens' literacy in the context of a major epidemic. Particular attention has been paid to those elements that emerged during the COVID-19 pandemic. The identified assets have been schematically summarized in Figure 2. They can be thus defined:

1. Implementation of physical distancing measures, aimed at limiting the transmission of the virus (including temporary suspension of work activities, conversion of the production, promotion of telework), with a consequent reduction in the time dedicated to work and travel and a parallel increase in the probability of reaching citizens through the media due to the increase of the time spent at home, in order to convey educational messages and/or public health information;

2. Increased knowledge and perception of infectious risks, as well as of modalities of infection and hygiene measures aimed at preventing transmission (physical distancing, hand hygiene, PPE, etc.) determined by prolonged exposure to an exceptional risk and reinforced by the communication campaign implemented by the media;

3. Greater attention and receptivity to new rules (both hygienic and behavioural), public health information (mostly neglected in ordinary daily life), as well as regarding the critical issues related to the social, health and welfare area pre-existing to the pandemic, and emerged with greater emphasis during the crisis (shortage of staff, medical devices, intensive care spots, hospital management and general medicine issues, the onset of infectious outbreaks in nursing homes, etc.), caused by an increased perception of risk and the will to prevent the establishment of new measures of confinement and physical distancing;

4. More opportunities for parents to spend time with their children, which allows them to share skills and points of view, as well as to get in touch with informative media usually aimed at a different age group (such as comics (38) or cartoons for kids (39);

5. Increased use of technology, both intrinsic and connected to the promotion of telework, with a wider possibility of distance training for workers (40), of sharing educational tools and key messages, as well as conveying traditional media information in a digital format (television advertisements via internet platforms, e-journals, etc.). Furthermore, the use of new artificial intelligence technologies has allowed the development of Chatbots, specifically intended to provide updated information related to the spread of the pandemic and its symptoms or rapid and timely responses to specific questions (41-42);

6. Wide use of social media, streaming platforms and messaging services, tools capable of conveying a rapid and widespread diffusion of educational messages and/or public health information (40, 43), also involving those sections of the population (such as young adults and teens) more difficult to reach through traditional media;

7. Attention from the main web platforms to the quality of information provided, mainly manifested through the introduction of tools (banners or pop-ups) designed to spread key information or to redirect to institutional sites, or other sources of recognized reliability, the user who actively seeks information on the pandemic, in order to prevent the spread of partial or erroneous information through the platforms themselves (40, 44);

8. Possibility of facilitating the assimilation of key messages through repetition (24) and coordination in content circulation provided by healthcare and non-healthcare organizations (45), respecting the principles of accessibility (easy-to-access), comprehensibility (easy-to-

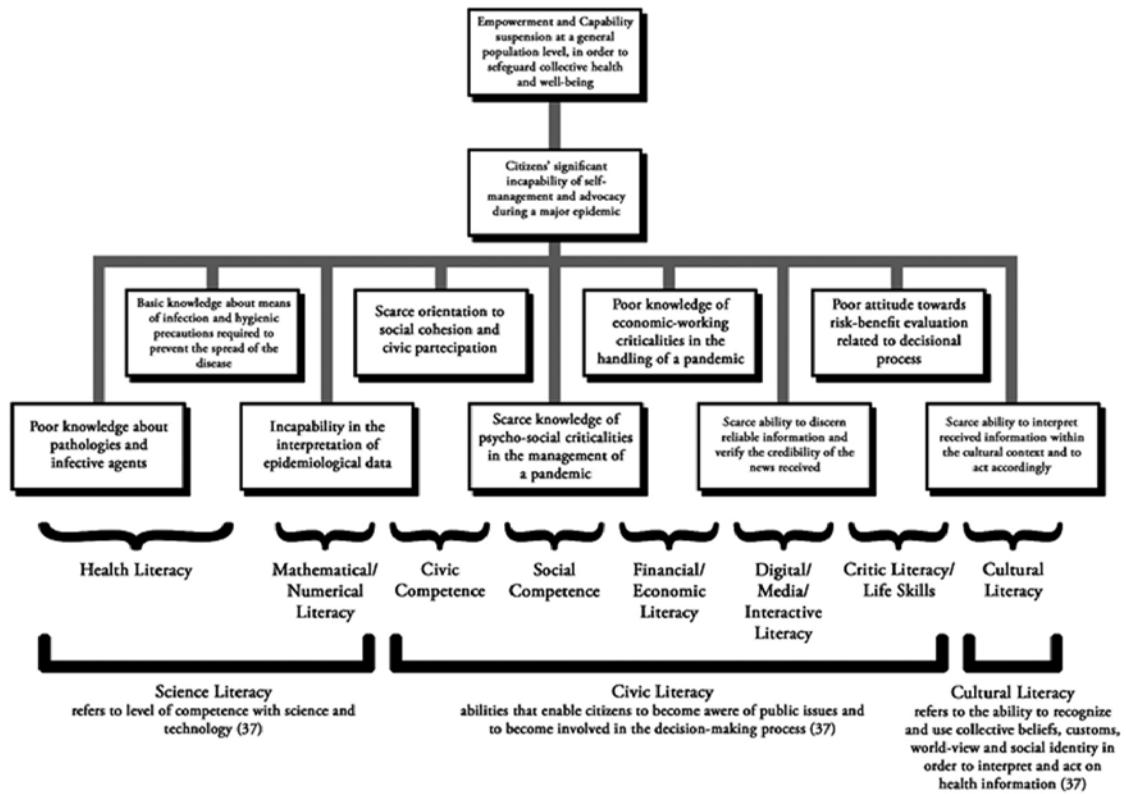


Fig. 1 - Critical issues and deficits

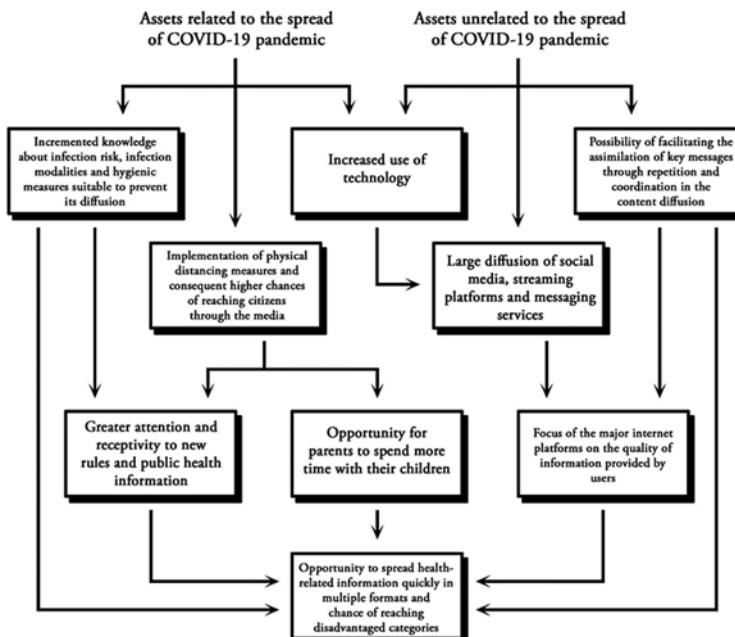


Fig. 2 - Opportunities and resources

understand), usability (easy-to-use), cultural appropriateness and relevance (36, 39).

9. Opportunity to rapidly and simultaneously diffuse health information in multiple formats (images, videos, animations, comics) through the previously mentioned channels, with the additional possibility of reaching disadvantaged categories (low socio-cultural level (24) or people with significant visual and auditory deficits (39)), by the use of easy-to-understand graphics with a high visual impact.

Discussion and Conclusions

The elements outlined in Fig. 2 highlight some considerations:

The scarce ability of the population to autonomously adapt their habits and behaviours to the new critical issues related to the infectious danger – as well as the consequent alleged need for the government authorities to suspend their empowerment and capability to protect public health – has been traced back to a widespread lack of literacy and life skills at a general population level;

The current crisis situation offers a singular opportunity in terms of tools, circumstances and receptivity to highlight the aforementioned deficits, as well as to take action on multiple fronts – in the group of assets described above – in order to increase literacy and capability, at both an individual and a community level, through inclusive and sustainable initiatives;

The present circumstance allows an identification of new assets that can originate both from technological and social progress and from concrete, pressing and immediate situations of precariousness and danger – with which modern society is no longer used to interfacing – offering a chance to act at a level of otherwise hidden criticalities;

The implementation of initiatives aimed at increasing literacy and life skills in the

general population represents an effective tool for increasing citizens' civic participation, strengthening social cohesion, promoting a deeper understanding of specific issues, in order to foster fruitful cooperation with specific figures and professional services, while encouraging the autonomous adoption of effective prevention strategies, in the absence of external impositions;

The relative prevalence and the relevance of the assets related to a Digital/Media/Interactive Literacy setting identifies the scope for priority interventions. Educational programs focused on territory (schools, health facilities, working environment) must be supported by other initiatives, which should be able to reach the ever-growing digital community, including streaming platforms, social networks (possibly with the involvement of authoritative or well-known figures) and messaging services. In particular, due to the objective difficulty in limiting the spread of false information, strengthening literacy is the focus around which future intervention must be placed (46). Further evaluations shall be conducted in order to determine more appropriate intervention strategies and the proper markers to estimate their effectiveness.

Pandemic and Infodemic

The assets set out in points 3, 5, 6 and 8 deserve special mention, given their dual connotation of opportunity and obstacle to strengthen citizens' literacy. In fact, it should be remembered how, in the current historical phase, the demand, production, dissemination and consumption of information have reached such proportions to configure a real “*infodemic*”, alongside the pandemic.

The term *infodemic*, abbreviation of information epidemic, represents a condition of “*rapid spread and amplification of vast amounts of valid and invalid information on the internet or through other communication technologies*” (36).

The simultaneous existence of a greater

demand from citizens – due to the increased perception of the infectious risk – and the widespread use of social media (as well as other IT systems that allow instant and uncontrolled diffusion of news) have determined the proliferation of an abnormal mass of often conflicting – consequent to the rapid progress of scientific knowledge on the subject – or erroneous information [respectively in the forms of Misinformation, Disinformation and Malinformation (46-48)].

Without an effective communicative strategy, integrated and shared by main stakeholders (WHO's Department of communications, social media platforms, web search engine platforms) (44) or of pre-existing critical literacy skills on the part of the information users (7, 49), many of the assets described lose part of their educational potential. This may cause an exacerbation of those conditions of uncertainty and fear responsible for social instability and underlining the fundamental importance of constant supervision from the relevant institutions, as well as the adoption of effective health promotion policies.

COVID-19, Social Cohesion and Mass Disruption

Therefore, the comparison between the critical issues identified and the considerations offered by Zarcadoolas, et al. (37) in the aforementioned analysis (related to the bio-terroristic anthrax threat in the USA in 2001) is particularly interesting, especially the relationship between health risks connected to the infectious danger (mass destruction) and social imbalance – including fear, uncertainty, mistrust, inevitably associated with an emergency context of such an extent – related to it (mass disruption).

Suggestive comparisons with the COVID-19 emergency arise in the context of Cultural Literacy. In particular, the paper emphasizes how cultural differences (both ethnic and

work-related) have increased the risk of interpersonal conflicts during the anthrax threat and the use of particular diagnostic devices (such as swab tests) has taken on a markedly political connotation over time. Conspicuously overlapping situations belonging to the Italian emergency context – such as episodes of animosity and violence against the Chinese community first (in the initial stages of the virus spread) and irregular migrants next (with the arrival of the second wave of infection), the politicization of PPE and vaccinations, protests in prisons or complaints from specific professional categories due to a perceived lack of interest in their individual issues from the authorities (among which courier strike is particularly relevant, since it closely follows the protests of post office workers during the anthrax emergency) – offer a clear example of how low literacy levels profoundly affect different communities in a similar way. Furthermore, they confirm the need for a culturally competent approach, intrinsically connected to the promotion of a good literacy level, in order to soothe issues related to the social complexity (50).

Estimates conducted in the COVID-19 emergency context highlighted how a socio-political context characterized by conflicts between citizens and institutions (anti-state historical context), by a sense of social injustice (inequity) and by a political class that reignites such feelings (anti-state leadership) create the basis for the establishment of a condition of distrust and alienation towards the institutions (51), as well as the perception of illegitimacy and inequity towards the health measures adopted.

In particular, a political debate that increases differences and tensions, far from encouraging a democratic exchange of opinions, may strengthen a pre-existing climate of cynicism and disillusionment, legitimizing feelings of individualism and disinterest (exemplified by the so-called free-

riders (52)), detrimental to the maintenance of a social cohesion capable of guaranteeing collective health and well-being (53).

A good level of literacy can contribute to achieving a greater understanding of the motivations underlying the health recommendations and, consequently, to transcend self-interest in order to pursue collective well-being (52).

Conclusions

An effective public discussion process requires proactive empowerment strategies, aimed at increasing population literacy as well as making information available, allowing citizens to become aware of the problems and understand the various facets of scientific and political debate (54). Specifically, this implies the right of citizens to enhance their ability to acquire, understand, assess and apply (to individual decisions and public discussion) available information on the pandemic and related social implications (9, 35, 55).

A health literate citizen is able to autonomously assume the most appropriate behaviours in the changing and unpredictable contexts of his/her daily life (school, work, public transport, physical activity and sports, social life) to contain the risk of infection, with minimum sacrifice in terms of quality of life.

A health literate community is able to participate in the process of public discussion (33), fuelled by the availability of scientific evidence, towards the development of shared visions, balanced between the mitigation of the pandemic and the safeguarding of economic activities and the multiple components of the well-being of citizens and communities (education, social relations, travel, relationship with nature, spirituality).

A prevention strategy based not on fear or coercion, but on the critical citizens'

understanding of risk and criticalities related to it, is the only one that can aspire to last over time, offering an effective tool for safeguarding public health, as well as an opportunity to be prepared to counter future emergencies more effectively.

Planning and implementing similar strategies (in schools, professional contexts and community aggregation, in non-governmental organizations, in the increasingly relevant online community) is one of the most important contributions Health Promotion can offer in the time of Coronavirus.

Riassunto

La Literacy al tempo del Coronavirus: una prospettiva italiana

Valore della literacy nel contesto di un evento pandemico

Background. L'epidemia COVID-19, col suo drammatico impatto sulla società, rappresenta una sfida per la Promozione della Salute e i suoi principi di *empowerment*, coesione sociale e partecipazione democratica dei cittadini alle politiche di salute. Nell'incalzare dell'emergenza le strategie di salute pubblica volte a prevenire il diffondersi della pandemia sono state principalmente orientate a misure coercitive (limitazione degli spostamenti, utilizzo dei DPI) in assenza di un'adeguata comunicazione educativa volta ad accrescere conoscenze e competenze dei cittadini relativamente al contesto emergenziale.

Disegno dello Studio. Proporre una prospettiva della situazione italiana in termini di *health literacy* e *life skills* nell'ambito della pandemia COVID-19, volta non solo all'individuazione delle carenze quanto in particolare a determinare opportunità e risorse (*asset*), offerte dal peculiare contesto di crisi, utili a fornire ai cittadini gli strumenti necessari per comprendere le criticità legate all'emergenza e adeguare i propri comportamenti alle nuove esigenze in assenza di imposizioni esterne, nonché a promuovere una futura partecipazione efficace e informata della popolazione all'azione sociale e politica.

Metodi. Una revisione non sistematica della letteratura sui temi della *health literacy* e della coesione sociale in contesti emergenziali è stata affiancata a una valutazione qualitativa fondata sul modello degli *asset* e basata sull'esperienza della situazione italiana all'ultimo trimestre dell'anno 2020.

Risultati. La scarsa capacità da parte della popolazione di adeguare autonomamente abitudini e comportamenti alle nuove criticità dettate dal pericolo infettivo – nonché la conseguente asserita necessità di sospendere *empowerment* e *capability* degli stessi da parte delle autorità governative ai fini della tutela della salute pubblica – è stata ricondotta in primo luogo a una diffusa carenza nei contesti della *literacy* e delle *life skills* a livello della popolazione generale. L'attuale situazione di crisi offre una singolare opportunità in termini di mezzi, circostanze e ricettività per evidenziare le suddette carenze, nonché di intervenire su molteplici fronti al fine di accrescere *literacy* e *capability*, sia a livello individuale che di comunità, tramite iniziative inclusive e sostenibili.

Conclusioni. Una strategia di prevenzione fondata sulla comprensione critica del rischio e delle criticità ad esso correlate è l'unica che possa aspirare a perdurare nel tempo, offrendo un efficace strumento di salvaguardia della salute pubblica, nonché l'opportunità di essere preparati a contrastare più efficacemente future emergenze. L'implementazione di simili strategie rappresenta uno dei più importanti contributi che la Promozione della Salute possa offrire al tempo del Coronavirus.

References

1. World Health Organization (WHO). Ottawa charter for health promotion. 1986. Available on: https://www.euro.who.int/__data/assets/pdf_file/0004/129532/Ottawa_Charter.pdf [Last accessed: 2021 Feb 21].
2. World Health Organization (WHO). Jakarta declaration on leading health promotion into the 21st century. 1997. Available on: <https://www.who.int/healthpromotion/conferences/previous/jakarta/declaration/en/> [Last accessed: 2021 Feb 21].
3. Owens S, Rayner T, Bina O. New agendas for appraisal: reflections on theory, practice and research. Environ Plan A. 2004; **36**(11): 1943-59. doi: 10.1068/a36281.
4. Adelle C, Jordan A, Turnpenny J. Proceeding in parallel or drifting apart? A systematic review of policy appraisal research and practices. Environ Plann C. 2012; **30**(3): 401-15. doi: 10.1068/c11104.
5. Weiss CH. The many meanings of research utilization. Public Adm Rev 1979; **39**(5): 426-31. doi:10.2307/3109916.
6. Parsons W. From muddling through to muddling up: evidence-based policy making and the modernisation of British Government. Public Policy Adm. 2002; **17**(3): 43-60.
7. Abel T, McQueen D. Critical health literacy and the COVID-19 crisis. Health Promot Int. 2020; **35**(6):1612-3. doi: 10.1093/heapro/daaa040.
8. Saboga-Nunes L, Levin-Zamir D, Bittlingmayer U, et al. A Health Promotion Focus on COVID-19: Keep the Trojan horse out of our health systems. Promote health for ALL in times of crisis and beyond! EUPHA-HP, IUHPE, UNESCO Chair Global Health & Education, 2020. Available on: https://www.iuhpe.org/images/IUHPE/Advocacy/COVID19_HealthPromotion.pdf [Last accessed: 2021 Feb 21].
9. Nutbeam D. Health literacy as a public goal: a challenge for contemporary health education and communication strategies into the 21st century. Health Promot Int. 2000; **15**(3): 259-67. doi: 10.1093/heapro/15.3.259.
10. Capecchi L, Guazzini A, Lorini C, Santomauro F, Bonaccorsi G. The first Italian validation of the most widespread health literacy assessment tool: The Newest Vital Sign. Epidemiol Prev. 2015; **39**(4 Suppl 1): 124-8.
11. Lorini C, Santomauro F, Grazzini M, et al. Health literacy in Italy: a cross-sectional study protocol to assess the health literacy level in a population-based sample, and to validate health literacy measures in the Italian language. BMJ Open. 2017 Nov 14; **7**(11): e017812. doi: 10.1136/bmjopen-2017-017812.
12. Bonaccorsi G, Grazzini M, Pieri P, Santomauro F, Ciancio M, Lorini C. Assessment of Health Literacy and validation of single-item literacy screener (SILS) in a sample of Italian people, Ann Ist Super Sanita. 2017; **53**(3): 205-12. doi: 10.4415/ANN_17_03_05.
13. Lorini C, Lastrucci V, Mantwill, Vettori V, Bonaccorsi G; Florence Health Literacy Research Group. Measuring health literacy in Italy: the validation study of the HLS-EU-Q16 and of the HLS-EU-Q6 in Italian language. Ann Ist Super Sanita. 2019 Jan-Mar; **55**(1): 10-8. doi: 10.4415/ANN_19_01_04.
14. Lorini C, Lastrucci V, Paolini D, Bonaccorsi G; Florence Health Literacy Research Group. Measuring health literacy combining performance-based and self-assessed measures: the roles of age, educational level and financial resources in predicting health literacy skills. A cross-sectional study conducted in Florence (Italy). BMJ Open. 2020 Oct 5; **10**(10): e035987. doi: 10.1136/bmjopen-2019-035987.

doi:10.1177/095207670201700304.

15. Sørensen K, Pelikan JM, Röthlin F, et al. Health literacy in Europe: comparative results of the European health literacy survey (HLS-EU). *Eur J Public Health*. 2015; **25**(6): 1053-8. doi: 10.1093/eurpub/ckv043. Epub 2015 Apr 5.
16. Palumbo R, Annarumma C, Adinolfi P, Musella M, Piscopo G. The Italian Health Literacy Project: Insights from the assessment of health literacy skills in Italy. *Health Policy*. 2016; **120**: 1087-94.
17. Lastrucci V, Lorini C, Caini S; Florence Health Literacy Research Group, Bonaccorsi G. Health literacy as a mediator of the relationship between socioeconomic status and health: A cross-sectional study in a population-based sample in Florence. *PLoS One*. 2019 Dec 23; **14**(12): e0227007. doi: 10.1371/journal.pone.0227007
18. Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Crotty K. Low health literacy and health outcomes: an updated systematic review. *Ann Intern Med*. 2011; **155**(2): 97-107. doi: 10.7326/0003-4819-155-2-201107190-00005.
19. Williams MV, Baker DW, Parker RM, Nurss JR. Relationship of functional health literacy to patients' knowledge of their chronic disease. *Arch Intern Med*. 1998; **158**(2): 166-72. doi: 10.1001/archinte.158.2.166.
20. Parker RM, Ratzan SC, Lurie N. Health literacy: a policy challenge for advancing high-quality health care. *Health Aff (Millwood)*. 2003; **22**(4): 147-53. doi: 10.1377/hlthaff.22.4.147.
21. Baker DW, Parker RM, Williams MV, Clark WS. Health literacy and the risk of hospital admission. *J Gen Intern Med* 1998; **13**(12): 791-8. doi: 10.1046/j.1525-1497.1998.00242.x.
22. Baker DW, Gazmararian JA, Williams MV, et al. Functional Health Literacy and the Risk of Hospital Admission Among Medicare Managed Care Enrollees. *Am J Public Health*. 2002; **92**(8): 1278-83. doi: 10.2105/ajph.92.8.1278.
23. Eichler K, Wieser S, Brügger U. The cost of limited health literacy: A systematic review. *Int J Public Health*. 2009; **54**(5): 313-24. doi: 10.1007/s00038-009-0058-2. Epub 2009 Jul 31.
24. Van den Broucke S. Why health promotion matters to the COVID-19 pandemic, and vice versa. *Health Promot Int*. 2020; **35**(2): 181-6. doi: 10.1093/heapro/daa042.
25. Morgan A, Ziglio E. Revitalising the evidence base for public health: an assets model. *Promot Educ*. 2007; Suppl 2: 17-22. doi: 10.1177/10253823070140020701x.
26. Kretzman JP, McKnight JL. Building communities from the inside out: a path toward finding and mobilizing a community's assets. Chicago: ACTA Publications, 1993.
27. Fuller T, Guy D, Pletsch C. Asset mapping: A handbook. 2002. Available on: https://ccednet-rcdec.ca/sites/ccednet-rcdec.ca/files/asset_mapping_handbook.pdf [Last accessed: 2021 Feb 21].
28. Whiting L, Kendall S, Wills W. An asset-based approach: an alternative health promotion strategy? *Community Pract*. 2012; **85**(1): 25-8.
29. Morgan A. Needs assessment. In: Macdowall W, Bonell C, Davies M, Eds. *Health promotion practice*. Berkshire: McGraw-Hill Education, Open University Press, 2006: 21-36.
30. O'Mara-Eves A, Brunton G, Oliver S, Kavanagh J, Jamal F, Thomas J. The effectiveness of community engagement in public health interventions for disadvantaged groups: a meta-analysis. *BMC Public Health*. 2015; **15**: 129. doi: 10.1186/s12889-015-1352-y.
31. Atkinson J, Vallely A, Fitzgerald L, Whittaker M, Tanner M. The architecture and effect of participation: a systematic review of community participation for communicable disease control and elimination. Implications for malaria elimination. *Malar J*. 2011; **10**: 225. doi: 10.1186/1475-2875-10-225.
32. World Health Organization. (WHO). WHO community engagement framework for quality, people-centred and resilient health services. 2017. Available on: <https://apps.who.int/iris/bitstream/handle/10665/259280/WHO-HIS-SDS-2017.15-eng.pdf;jsessionid=F59753E2F20F33FF46688F87D07B1AEB?sequence=1> [Last accessed 2021 Feb 21].
33. Lorini C, Caini S, Ierardi F, Bachini L, Gemmi F, Bonaccorsi G. Health Literacy as a Shared Capacity: Does the Health Literacy of a Country Influence the Health Disparities among Immigrants? *Int J Environ Res Public Health*. 2020 Feb 12; **17**(4): 1149. doi: 10.3390/ijerph17041149.
34. The European Parliament and the Council of the European Union. Recommendation of the European Parliament and the Council of 18 December 2006 on key competences for lifelong learning. 2006. Available on: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006H0962&from=EN> [Last accessed: 2021 Feb 21].
35. Sørensen K, Van den Broucke S, Fullam J, et al. Health literacy and public health: A systematic review and integration of definitions and

models. *BMC Public Health*. 2012; **12**: 80. doi: 10.1186/1471-2458-12-80.

- 36. Okan O, Bollweg TM, Berens EM, Hurrelmann K, Bauer U, Schaeffer D. Coronavirus-Related Health Literacy: A Cross-Selectional Study in Adults during the COVID-19 Infodemic in Germany. *Int J Environ Res Public Health*. 2020; **17**(15): 5503. doi: 10.3390/ijerph17155503.
- 37. Zarcadoolas C, Pleasant A, Greer DS. Understanding health literacy: an expanded model. *Health Promot Int*. 2005; **20**(2): 195-203. doi: 10.1093/heapro/dah609. Epub 2005 Mar 23.
- 38. Gharib M. Just for Kids: A Comic Exploring the New Coronavirus. National Public Radio, 2020. Available on: <https://www.npr.org/sections/goatsandsoda/2020/02/28/809580453/just-for-kids-a-comic-exploring-the-new-coronavirus?t=1584541381186> [Last accessed: 2021 Feb 21].
- 39. Okan O, Messer M, Sørensen K. COVID-19: a guide to good practice on keeping people well informed. *The Conversation*, 2020. Available on: <https://theconversation.com/covid-19-a-guide-to-good-practice-on-keeping-people-well-informed-134046> [Last accessed: 2021 Feb 21].
- 40. Merchant RM, Lurie N. Social Media and Emergency Preparedness in Response to Novel Coronavirus. *JAMA*. 2020; **323**(20): 2011-2. doi: 10.1001/jama.2020.4469.
- 41. Luengo-Oroz M, Hoffmann Pham K, Bullock J, et al. Artificial intelligence cooperation to support the global response to COVID-19. *Nat Mach Intell* 2020; **2**: 295-7. doi: 10.1038/s42256-020-0184-3.
- 42. Sundareswaran V, Firth-Butterfield K. Chatbots provide millions with COVID-19 information every day, but they can be improved – here's how. *World Economic Forum*, 2020. Available on: <https://www.weforum.org/agenda/2020/04/chatbots-covid-19-governance-improved-here-s-how/> [Last accessed: 2021 Feb 21].
- 43. World Health Organization. (WHO). WHO Health Alert brings COVID-19 facts to billions via WhatsApp. 2020. Available on: <https://www.who.int/news-room/feature-stories/detail/who-health-alert-brings-covid-19-facts-to-billions-via-whatsapp> [Last accessed: 2021 Feb 21].
- 44. Zarocostas J. How to fight an infodemic. *Lancet*. 2020; **395**(10225): 676. doi: 10.1016/S0140-6736(20)30461-X.
- 45. Smith J, Judd J. COVID-19: vulnerability and the power of privilege in a pandemic. *Health Promot J Austr*. 2020; **31**(2): 158-60. doi: 10.1002/hpj.a.333. Epub 2020 Mar 20.
- 46. Moscadelli A, Albora G, Biamonte MA, et al. Fake News and Covid-19 in Italy: Results of a Quantitative Observational Study. *Int J Environ Res Public Health*. 2020 Aug 12; **17**(16): 5850. doi: 10.3390/ijerph17165850.
- 47. Baines D, Elliott RJR. Defining misinformation, disinformation and mal information: An urgent need for clarity during the COVID-19 infodemic; Discussion Papers 20. Birmingham: Department of Economics, University of Birmingham, 2020.
- 48. Ashrafi-rizi H, Kazempour Z. Information Typology in Coronavirus (COVID-19) Crisis; a Commentary. *Arch Acad Emerg Med*. 2020; **8**(1): e19.
- 49. Ashrafi-rizi H, Kazempour Z. Information Diet in COVID-19 Crisis; a Commentary. *Arch Acad Emerg Med*. 2020; **8**(1): e30.
- 50. Slobodin O, Cohen O. A Culturally-Competent Approach to Emergency Management: What Lessons Can We Learn from the COVID-19? *Psychol Trauma*. 2020; **12**(5): 470-3. doi: 10.1037/tra0000790. Epub 2020 Jun 25.
- 51. Reicher S, Stott C. On order and disorder during the COVID-19 pandemic. *Br J Soc Psychol*. 2020; **59**(3): 694-702. doi: 10.1111/bjso.12398. Epub 2020 Jul 1.
- 52. Paakkari L, Okan O. COVID-19: health literacy is an underestimated problem. *Lancet Public Health*. 2020; **5**: e249-50. doi: 10.1016/S2468-2667(20)30086-4. Epub 2020 Apr 14.
- 53. Spoonley P, Gluckman P, Bardsley A, et al. He Oranga Hue: Social Cohesion in a Post-COVID World; Auckland: Koi Tū: The Centre for Informed Futures, University of Auckland, 2020.
- 54. Keutgen J. Participatory democracy in times of COVID-19. Westminster Foundation for Democracy (WFD), 2020. Available on: <https://www.wfd.org/2020/04/06/participatory-democracy-in-times-of-covid-19/> [Last accessed: 2021 Feb 21].
- 55. Sen A. The idea of justice. London: Allen Lane, 2009.