

Health Promotion and Health Education during the COVID-19 Pandemic

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Abstract

Health promotion allows people to increase their control over the various determinants of health and thus to improve their level of health. As sustainable development and global health are two interrelated and mutually reinforcing concepts, Sustainable Development Goals (SDGs) aim to ensure that all people can achieve the greatest possible health potential in a healthy environment. Nowadays, new health threats are constantly emerging, while simultaneously the COVID-19 pandemic has systematically disrupted people's daily lives and the functioning of health systems and as a result has jeopardized the achievement of SDGs. This unprecedented health crisis highlighted the urgent need for strong public health systems, the critical role of health literacy, and the insurmountable need for effective health communication, mobilization and community empowerment efforts to enhance positive health and protective self-care attitudes. In this context, it is necessary to design and implement sustainable health promotion strategies around the globe based on the Ottawa principles and harmonized with the local social, cultural and geographical features in order to create a supportive environment (healthy cities) and sustainable public health governance. It is important to develop a dialogue on public health at a cross-sectoral level, in order to align the concepts of health, equality, human dignity, social solidarity and sustainability, so as to provide effective and targeted assistance to health systems not only to deal effectively with the sudden overload created by the SARS-CoV-2 outbreak, but also to be appropriately prepared to sustain health promotion and prevention strategies during possible future crises.

Keywords: Health Education, Health Literacy, Health Policy, Public Health, SARS-CoV-2, Sustainable Development Goals

Introduction

Health promotion allows people to increase their control over the various determinants of health and thus to improve their level of health.¹ It represents an integrated social and political process and covers a wide range of social, economic and environmental interventions designed to benefit and protect the health and the quality of life of individuals, not only by focusing on diagnosis and treatment, but also by addressing and preventing the main causes of poor health.²

The first International Conference on Health Promotion was held in Ottawa in 1986 and was a response to the growing expectations from around the world for a new public health movement. It introduced a series of actions among international organizations, national governments and local communities to achieve the "Health for All" goal by 2000 and beyond.³ The key health promotion strategies outlined in the Ottawa Charter are: Advocacy

(for strengthening the political, economic, social, cultural, environmental and biological factors that promote health), Opportunity (providing equal opportunities for all people to achieve equity in health) and Mediation (through cooperation in all areas).⁴ Since then, the World Health Promotion Conferences have developed principles and areas for action to promote health at all levels internationally. Most recently, the 9th World Conference, held in Shanghai, China in 2016, entitled "Promoting Health for Sustainable Development Goals: Health for All and All for Health", emphasized that health promotion is closely and inextricably linked to the 2030 Agenda for Sustainable Development.⁴

Sustainable development and global health are two interrelated and mutually reinforcing concepts.⁵ The inclusion of universal health coverage as a specific goal of sustainable development in Agenda 2030

underscores the contribution of health and well-being to achieve the primary pursuit of equality and social justice as well as to ensure that no one (regardless of race, gender, culture, and socioeconomic level) will not be left behind.⁶ It is worth noting that the SDGs, adopted by the United Nations General Assembly in 2015, aim to ensure that all people can achieve the greatest possible health potential with dignity and equality in a healthy environment.^{5,7}

Investing in health can contribute (excluding SDG 3, which is directly related to health and well-being) to the fight against poverty (SDG 1), to the tackling of health inequalities and the support of redistributive welfare policies (SDG 10), to the strengthening of the role of women (SDG 5) and to the support of child development (SDG 4). The greatest health benefit of the population can undoubtedly be achieved by addressing the different determinants of health.^{5,7} Besides, at the opening remarks of the 9th World Congress, the Shanghai Declaration was formed, which recognizes health and well-being as necessary conditions for achieving sustainable development. It redefines health as a universal right, an essential resource of daily life, a common social goal and a political priority for all countries.⁵

The COVID-19 Pandemic and the Role of Health Promotion

Nowadays, there are many factors that threaten the health and well-being of the population and go beyond the narrow limits of the individual control. These threats include racial, social, economic and trade health inequalities, climate change and natural disasters, globalization and urbanization, the double burden of obesity and malnutrition, and the unprecedented mass migration of the population due to conflict and unrest.⁵ Along with all the above, lately, the planet is facing an unprecedented crisis, with a health starting point but with socio-economic implications, the COVID-19 pandemic, which jeopardizes the achievement of sustainable development goals.

In a desperate attempt to mitigate the further spread of the disease and to reduce physical contacts and unnecessary transportations of the population, governments around the world have taken unprecedented measures, shrinking economic activity and shutting down schools, universities, places of worship, shops, restaurants and theaters.^{8,9} The emerging new reality is further

complicated by the fact that the pandemic crisis has severely disrupted the functioning of the National Health Systems, jeopardizing viability and resilience of social welfare systems.^{9,10}

In this context, and given that on one hand limited drug therapies have been developed to date, and on the other hand the impact of mass vaccination for SARS-COV-2 is under investigation, it is important to redefine the role of health promotion during the COVID-19 pandemic.^{8,10} Indeed, this unprecedented health crisis underscores the need for strong public health systems, the crucial role of health literacy and digital health literacy, and the need for effective communication, community mobilization and strengthening of positive health attitudes.⁸⁻¹⁰ In addition, it is worth emphasizing the need to develop a dialogue on public health at a cross-sectoral level, from the systematic and holistic approach of health promotion, in order to align the concepts of health, equality, human dignity, social solidarity and sustainability, so as to provide effective and targeted assistance to health systems not only to deal effectively with the sudden overload created by the SARS-CoV-2 outbreak, but also to be appropriately prepared for possible future crises.¹⁰

Health Promotion Actions during the COVID-19 Pandemic

Health promotion actions aim to reduce health inequalities and discrimination and to ensure equal opportunities and resources, so that all people are able to fulfill their greatest possible health potential.^{4,5} At the same time, health promotion strategies and programs must be adapted to the current health needs of the local population with respect for their geographical, social and cultural specificities.^{2,4} In this context, and in the light of the uncertainty provoked by the COVID-19 pandemic, it is necessary for the local authorities to design and implement sustainable health promotion strategies in the COVID-19 era.

Community Empowerment and Health Literacy

Community empowerment refers to the process that allows communities to increase control over their lives. The former is more than the participation or involvement of communities and implies community ownership and action that explicitly aims at social and political change.^{11,12} Community empowerment inevitably confronts the social, cultural, political and economic

determinants of health and seeks, on one hand, to build partnerships with other sectors to find solutions, and, on the other hand, to ensure its expansion locally and globally.¹¹

Undoubtedly, communication plays a dominant role in ensuring empowerment. Health literacy is defined as the cognitive and social skills that determine the motivation and ability of individuals to access, understand and use information in ways that promote and maintain good health.¹¹ Health education aims not only to influence individual lifestyle decisions, but also to make individuals aware of the different determinants of health and to encourage individual and collective actions towards sustainable development and health for all.⁵ By improving people's access to comprehensible and intelligible health information and cultivating their ability to use it effectively through individual and participatory interventions,⁹ health literacy is becoming a critical factor in community empowerment, especially during the pandemic period.^{4,11,13}

Individual and community empowerment and advocacy are crucial for the effective management of the pandemic and for its achievement it requires efficient communication.^{8,10,13} An innovative practice that could be applied is the development of an online platform, which will be characterized by user-centric design, high usability and a high degree of interactivity.¹⁴ Under these circumstances, it can act as an educational tool and as a broader citizen health advisor. The local authorities in collaboration with the State and the scientific community (universities) can create the appropriate software, adaptable to a mobile telephone environment, which will validly and authoritatively inform its users on issues related to the pandemic (such as current restrictive measures, epidemiological data, transmission modes, symptoms and signs of the new coronavirus, diagnostic tests, hygiene rules and contact tracking), and for other common health issues and preventive measures (such as vaccinations, screening tests) and for a healthy lifestyle (e.g. smoking cessation, balanced diet and physical activity), with emphasis on their challenging adaptation to the newly formed context of the pandemic.^{8,9,13,15} It would also be useful to provide information on access to health services during the pandemic (vaccination centers, molecular PCR testing sites for SARS-COV-2, PHC structures), with an emphasis to ensure universal health coverage and not to neglect the provision of chronic care.

Such an innovative action presupposes digital health literacy, access to the Internet and new technologies and therefore the participation of vulnerable groups is not guaranteed. In order to overcome these barriers, it would be useful, for example, a mobile telephone and free internet access, along with a short training in their proper use to be provided in these marginalized groups of people, who would be willing to participate in this project. With the prospect that digital communication technologies can serve as a tool to improve health literacy and to reduce health inequalities by providing equal, comprehensive and universally accessible health services for all at all times,^{5,13} many countries, in the steps taken by Singapore with "HealthHub", can play a leading role in order to more fully and effectively address the pandemic crisis.

As the virus continues to spread, the risk of misinformation is growing alarmingly (which is described by the World Health Organization (WHO) as an "infodemic").¹⁶ When there is a lot of fake or inaccurate information about the virus, its origin, its effects, as well as the actions of health authorities to deal with it, it is difficult for many people to find reliable sources of information and guidance. It is, therefore, important to protect the general public from focusing on constant information, which is often accompanied by misinformation.^{8-10,17,18} In the context of effective communication and information of the citizens, the appropriate and comprehensible dissemination in efficient, interactive and attractive ways of the instructions and recommendations issued by the organizations (WHO, CDC, ECDC, scientific societies) and the governments is more than necessary. Indicative examples include educational videos, print or television comics, short and enjoyable TV spots, webinars and the launch of awareness-raising activities tailored to the social, economic and cultural specificities of the different social groups.¹⁹ A particularly important role for mass and equal access to good, simple and understandable information can be played by ensuring that relevant messages reach the recipients (and especially the vulnerable groups, who are not so familiar with new technologies) with small, stylish forms together with utility bills (e.g. electricity bills).

Universal and equal access to quality education and lifelong learning are the foundations of health literacy. Health awareness and literacy should be an integral part of the skills and abilities that are developed over a

lifetime, primarily through school curricula.^{4,5} In this context, and especially under the unprecedented conditions of the COVID-19 pandemic, it is of outmost importance for health promotion actions to be harmoniously integrated in the curriculum of the schools, with the support of the competent bodies (Ministry of Health, Directorates of Education, Universities, non-government institutions, local authorities). A health-promoting school focuses on preventing non-communicable diseases, promoting students' knowledge on health and well-being issues (including the new coronavirus), and improving good health decision-making.^{20,21} This can be achieved through the launch of awareness-raising activities (e.g. on road safety, environmental education, diet and exercise, vaccination, sex education, mental resilience and crisis management), through the systematic encouragement of alternative and multidisciplinary forms of learning, through the active participation of students in compulsory course of physical education and through the reduction of the availability of unhealthy products in school canteens.²⁰⁻²³

Even when schools are closed due to strict restrictive measures, some of the previous actions may take digital form (e.g. audiovisual educational material and augmented reality applications).^{21,24} In order to achieve equality in digital access to distance learning for all children regardless of the socio-economic level, it might be useful for local authorities in conjunction with the State to ensure universal coverage of new technologies and Internet and to be engaged in actions to enhance digital literacy.¹³ The prospects opened up by an organized and socially integrated network of Health Promotion Schools during the COVID-19 pandemic are huge, as the school environment (physical or temporary online) is a place, where children spend a lot of their time and the habits adopted at this age often accompany them in their adult life.²⁵⁻²⁷

Creating a Supportive Environment-Healthy Cities

In the modern multidisciplinary society, health cannot be separated from other important goals of sustainable development.⁴ The socio-ecological approach to health argues that there are important and integral links between humans and the natural environment. According to the WHO, in the context of "Global Health", the triptych of human health, environmental sustainability and climate change must be addressed in a single light.

Any health promotion strategy must therefore focus on protecting the environment and conserving natural resources.⁴

The development of urban green spaces, during the COVID-19 pandemic, can make a decisive contribution to the promotion of health. This is because, in addition to the given environmental benefits, the regeneration of such ecological structures (parks, squares, thickets) within the urban fabric have a direct positive impact on human health,²⁸ as they promote safe and enjoyable physical exercise,²⁹ promote social interaction especially between the elderly^{30,31} and allow psychological rehabilitation from stressful daily conditions, especially during the period of strict restrictive measures, when psychological distress significantly increases.³²⁻³⁴ In order to reap the maximum benefits, urban "green lungs" must be available, safe, attractive, accessible and easy to use by all age and social groups, socially integrated and should meet health and safety standards.²⁸ In this direction, and in order to save resources and valuable time, it would be useful to make proper use of unused areas, while in order to achieve such an effort, the cross-sectoral cooperation of all stakeholders is necessary.

The health benefits of curbing climate change and environmental pollution and adopting a low-carbon economy are multiple.³⁵ In this context, and under the unprecedented period of the COVID-19 pandemic, the transport and urban planning sectors, for example, can make a significant contribution to health promotion through the promotion and support of active transport systems (walking, cycling) and rapid transit within cities.^{5,36} This opens up a wide range of potential health benefits, including regular physical activity (walking and cycling), lower levels of urban air pollution, reduced risk of traffic injuries (road accidents) and limited noise pollution. Urban transport systems that prioritize active transport systems, in addition to protecting the environment, can also help to improve access for vulnerable groups such as children, elderly, people with disabilities and lower wages (who have been disproportionately affected by the current pandemic)³⁷ by strengthening equality in health. Actually, the current pandemic could be the starting point for change towards this direction in modern cities.^{5,36}

In the wake of the SARS-CoV-2 outbreak, and in the light of global health, new opportunities for promoting citizens' health and well-being are being offered through the regeneration of a sustainable network of bicycle

paths within the urban fabric, combined with the implementation of a bicycle sharing program, fully integrated into the existing public transport. Following the experience of many European countries, modern cities by providing bicycles at many connection stations around the city can achieve in addition to combating

traffic congestion, a significant reduction of CO₂ emissions and the assurance that its citizens can safely integrate physical exercise (cycling) into their daily routine instead of the systematic use of motor vehicles,³⁸ even in the difficult and stressful conditions of this unprecedented health crisis.

Table 1. Summary of Health Promotion Actions during the COVID-19 Pandemic based on the Ottawa Principles

Health Promotion Actions During the COVID-19 Pandemic		
Community Empowerment and Health Literacy	Creating a Supportive Environment - Healthy Cities	Sustainable Public Health Policy - Health Governance (National Level)
Efficient, interactive and attractive way of communicating and disseminating medical information: ✓ Educational video ✓ Webinars ✓ Health awareness actions ✓ Brochures within utility bills	Development of urban green spaces (green lungs) - Regeneration of available structures and creation of new ones: ✓ Parks ✓ Squares ✓ Thickets ✓ Coasts	Reorientation of health systems from diagnostic and treatment to promotion and prevention services. PHC in focus: ✓ Universal health coverage ✓ Equal access ✓ Patient-centeredness ✓ Continuity and comprehensiveness
Health education and health promotion schools: ✓ SARS-COV-2 & restrictive measures ✓ Nutrition and physical exercise ✓ Road safety and sex education ✓ NCDs prevention ✓ Mental resilience	Promotion of active transport systems (walking, cycling) and replacement of motorization ✓ Sustainable network of bicycle paths ✓ Bicycle sharing program	Addressing health inequalities ✓ Social protection measures ✓ Access (equal and universal) to health services for molecular testing, contact tracking
Development of digital skills and digital health literacy	Increase of public transportation schedules in order to reduce congestion	Health as a priority for policy makers in all sectors
Design and development of an online platform as an educational tool and as a broader health consultant	Promotion of electromobility and provision of chargers for electric cars under the responsibility of the local authorities	Legislation ✓ No smoking in public places ✓ Introduction of financial disincentives for unhealthy consumption products (tobacco, alcohol, sugar, fats). ✓ Mandatory use of seat belts and helmets
Community empowerment to participate in health decision making		Cross-sectoral cooperation of all stakeholders

Sustainable Public Health Policies-Health Governance

In addition to the previously mentioned local community empowerment and supportive environment actions, there is a need of sustainable public health policy and effective health governance strategies to be designed and implemented during the COVID-19 pandemic. Indeed, health promotion goes beyond healthcare and places health at the top of the agenda of stakeholders in all sectors and at all levels.³⁹ It essentially combines different but complementary approaches, including legislation, fiscal and organizational measures, with the common goal of the healthiest option to become the easiest option for policymakers.⁴

An important intervention that contributes to the sustainability of health promotion actions is the strengthening of health systems.⁵ It is necessary to reorient the hospital-centered national health systems from focusing on diagnostic and treatment services, to

prevention and health promotion services. To achieve the above mentioned, it is very important to strengthen PHC and its role in the care of citizens not only in matters related to the pandemic (molecular tests, vaccinations, contact tracking), but also in matters of chronic disease management, carrying out preventive checks and health promotion interventions in the community.⁴⁰ Only in this way, public health systems will be able to achieve the goals of universal coverage, equal access, continuity, patient-centeredness and to meet the modern health needs, which are more topical than ever during the outbreak of the new coronavirus.⁶ Table 1 summarizes the proposed health promotion actions during the COVID-19 pandemic, based on the Ottawa principles.

Conclusion

The world has changed considerably since the adoption

of the Ottawa Charter on Health Promotion, 30 years ago. New threats to health and well-being are constantly emerging, while at the same time exciting opportunities for health promotion are opening up. The COVID-19 pandemic has systematically disrupted people's daily lives and the functioning of health systems and jeopardized the achievement of sustainable development goals. At the same time, this unprecedented health crisis highlighted the urgent need for strong public health systems, the critical role of health literacy and digital health literacy, and the insurmountable need for effective communication, mobilization and community empowerment efforts to enhance positive health and protective self-care attitudes. In this context, and in the light of the uncertainty due to the pandemic, it is necessary to design and implement sustainable health promotion strategies around the globe based on the Ottawa principles and harmonized with the particular social, cultural and geographical features of local populations.

Conflict of Interest

The authors declare no conflicts of interest.

References

1. WHO. Division of health promotion, education, and communication. Health promotion glossary. 1998. Available from <https://apps.who.int/iris/handle/10665/64546> [accessed 14 March 2021].
2. WHO. Health promotion Q&A. 2016. Available from <https://www.who.int/news-room/q-a-detail/health-promotion> [accessed 16 March 2021].
3. World Health Organization. The Ottawa Charter for Health Promotion. Geneva: WHO; 1986.
4. World Health Organization. Milestones in health promotion: statements from global conferences. Geneva: WHO; 2009.
5. World Health Organization. Promoting health: guide to national implementation of the Shanghai declaration. Geneva: WHO; 2017.
6. Healthy systems for universal health coverage – a joint vision for healthy lives. Geneva: World Health Organization and the International Bank for Reconstruction and Development/The World Bank; 2017.
7. Health sector reorientation towards the SDGs and health inequity training, tools and technical assistance. Geneva: WHO; 2016.
8. Simkhada P, Mahato P, Tamang P, van Teijlingen E, Shahi P. The Role of Health Promotion during the COVID-19 Pandemic. *J Health Promot.* 2020;8:1-4. doi:10.3126/jhp.v8i0.32964
9. 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/daaa042
10. 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 from: https://eupha.org/repository/sections/hp/A_Health_Promotion_Focus_on_COVID-19_with_S.pdf [accessed 25 March 2021].
11. WHO. Health promotion: track themes of 7th conference on health promotion. 2009. Available from: <https://www.who.int/healthpromotion/conferences/7gchp/en/> [accessed 25 March 2021].
12. Labonte R, Laverack G. Health promotion in action: from local to global empowerment. New York: Palgrave Macmillan; 2008.
13. Sentell T, Vamos S, Okan O. Interdisciplinary perspectives on health literacy research around the world: more important than ever in a time of COVID-19. *Int J Environ Res Public Health.* 2020;17(9):3010. doi:10.3390/ijerph17093010
14. Stachteas C. Informatics in education. Athens: Tipothito – George Dardanos; 2002.
15. Aung MN, Yuasa M, Koyanagi Y, Aung TN, Moolphate S, Matsumoto H, et al. Sustainable health promotion for the seniors during COVID-19 outbreak: a lesson from Tokyo. *J Infect Dev Ctries.* 2020;14(04):328-31. doi:10.3855/jidc.12684
16. Zarocostas J. How to fight an infodemic. *Lancet.* 2020;395(10225):676. doi:10.1016/S0140-6736(20)30461-X
17. Barmania S, Reiss MJ. Health promotion perspectives on the COVID-19 pandemic: The importance of religion. *Glob Health Promot.* 2021;28(1):15-22. doi:10.1177/1757975920972992
18. Rains SA, Crane TE, Iyengar S, Merchant N, Oxnam M, Sprinkle MM, et al. Community-Level health promotion during a pandemic: key considerations for health communication. *Health Commun.* 2020;35(14):1747-9. doi:10.1080/10410236.2020.1837443
19. Gao Z, Lee JE, McDonough DJ, Albers C. Virtual reality exercise as a coping strategy for health and wellness promotion in older adults during the COVID-19 pandemic. *J Clin Med.* 2020;9(6):1986. doi:10.3390/jcm9061986
20. Institute of Child Health. Guidelines for promoting healthy eating and exercise in schools. HEPS program. Athens; 2009.
21. Wang G, Zhang Y, Zhao J, Zhang J, Jiang F. Mitigate the effects of home confinement on children during the COVID-19 outbreak. *Lancet.* 2020;395(10228):945-7. doi:10.1016/S0140-6736(20)30547-X
22. Kumanyika S, Dietz WH. Solving population-wide obesity-progress and future prospects. *N Engl J Med.* 2020;383(23):2197-200. doi:10.1056/NEJMp2029646
23. Global school health initiatives: achieving health and education outcomes. Report of a meeting, Bangkok, Thailand, 23-25 November 2015. Geneva: WHO; 2017.
24. Gray DJ, Kurscheid J, Mationg ML, Williams GM, Gordon C, Kelly M, et al. Health-education to prevent COVID-19 in schoolchildren: a call to action. *Infect Dis Poverty.* 2020;9(1):81. doi:10.1186/s40249-020-00695-2
25. International Union for Health Promotion and Education. Achieving health promoting schools: Guidelines for promoting health in schools. Version 2 of the document 'Protocols and guidelines for health promoting schools'. 2008.
26. Papatthanassiou B. Education and health promotion in the school environment: Basic principles and methodology. *Educational Issues Inspection.* 2009;15:47-61.
27. World Health Organization. Health Promoting School: an effective approach for early action on NCD risk factors. Available from: <https://apps.who.int/iris/bitstream/handle/10665/255625/WHO-NMH-PND-17.3-eng.pdf;jsessionid=1F015F15CFBAC023AD95BC177D44A7FE?sequence=1>
28. Lee AC, Jordan HC, Horsley J. Value of urban green spaces in promoting healthy living and wellbeing: prospects for planning. *Risk Manag Healthc Policy.* 2015;8:131-7. doi:10.2147/RMHP.S61654
29. Lachowycz K, Jones AP, Page AS, Wheeler BW, Cooper AR. What can global positioning systems tell us about the contribution of different types of urban greenspace to children's physical activity?. *Health Place.* 2012;18(3):586-94. doi:10.1016/j.healthplace.2012.01.006
30. Haq SM. Urban green spaces and an integrative approach to sustainable environment. *J Environ Protect.* 2011;2(5):601-8.
31. Sugiyama T, Thompson CW. Associations between characteristics of neighbourhood open space and older people's walking. *Urban For Urban Green.* 2008;7(1):41-51. doi:10.1016/j.ufug.2007.12.002
32. Hartig T, Berg AE, Hagerhall CM, Tomalak M, Bauer N, Hansmann R, et al. Health benefits of nature experience: Psychological, social and cultural processes. In *Forests, trees and human health.* Springer, Dordrecht; 2011. doi:10.1007/978-90-481-9806-1_5
33. Van den Berg AE, Maas J, Verheij RA, Groenewegen PP. Green

- space as a buffer between stressful life events and health. *Soc Sci Med.* 2010;70(8):1203-10. doi:10.1016/j.socscimed.2010.01.002
34. Stachteas P, Stachteas C. The psychological impact of the COVID-19 pandemic on secondary school teachers. *Psychiatriki.* 2020;31(4):293-301. doi:10.22365/jpsych.2020.314.293
35. Haines A, Dora C. How the low carbon economy can improve health. *BMJ.* 2012;344:e1018. doi:10.1136/bmj.e1018
36. Health co-benefits of climate change mitigation – Transport sector. *Health in the green economy.* Geneva: WHO; 2011.
37. Stachteas P, Stachteas F. COVID-19 pandemic as an aggravating factor of health inequalities. *EKE.* 2020;154:129-148.
38. Commission of the European Communities. Green Paper: Promoting healthy eating and physical exercise, a European dimension in the prevention of overweight, obesity and chronic diseases. Brussels; 2005.
39. Health in all policies. Boston: Boston Public Health Commission [Internet]. Available from: <http://www.bphc.org/whatwedo/healthy-eating-active-living/health-in-all-policies/Pages/default.aspx>.
40. Van Lerberghe W, Evans T, Rasanathan K. The world health report 2008: primary health care: now more than ever. Geneva: WHO; 2008.