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Climate change as a social determinant of the quality of public health

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Η κλιματική αλλαγή ως κοινωνικός προσδιοριστής της δημόσιας υγείας

Περίληψη στο τέλος του άρθρου

In recent years, it has become recognized worldwide that the threats and consequences of climate change for public health and, thus, for the quality of human life, are very serious. The need to protect the planet from climate change is high on the international agenda of social problems. Climate change is currently the most serious environmental hazard, with negative effects on the entire ecosystem. The British Meteorological Office defines climate change as a large-scale, long-term shift in the planet's weather patterns and average temperatures. Climate change can impact the essentials for human survival and health, such as air quality, water quality, and housing, and is often responsible for food insecurity and civil war. The incidence of communicable diseases and non-communicable diseases (NCDs), including mental illness, cardiovascular disease, chronic respiratory disease, cancer and diabetes mellitus, are on the rise. Ángel Guría, the Secretary General of the Organization for Economic Co-operation and Development (OECD) underlined "the need for swift global action on climate change", adding that *"climate change is a public health issue that is disproportionately affecting the most vulnerable, as well as those least responsible for climate change anthropogenic warming"*. According to the World Health Organization (WHO), climate change is expected to cause around 250,000 additional deaths annually between 2030 and 2050; 38,000 of these will be due to exposure of the elderly to extremely high temperatures, 48,000 will be caused by diarrhea and 60,000 by malaria, while 95,000 children will die of malnutrition. Unfortunately, the Paris Agreement on Climate Change, which came into force on November 4, 2016, has hardly been activated. Conversely, in November 2019, US President Donald Trump announced that the US will denounce and withdraw completely from the Paris Agreement in November 2020.

Key words

Climate change
Public health
Quality of life
Social determinants

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"For public health, climate change is the defining issue for the 21st century."

Margaret Chan,
World Health Organization

1. THE CONCEPT OF PUBLIC HEALTH

Making a theoretical or practical distinction between global and public health is a challenging task in our times. Health is considered to be a social good that entails mental and social well-being rather than the mere absence of sickness. Public health is approached through health policies at both the population and the individual level; however, health issues are generally managed through the implementation of scientific/technocratic strategies, taking into consideration socio-economic parameters.[1] According to the seminal definition given in 1915 by Winslow, the founder of the School of Public Health at the University of Yale, *"Public health is the science and art of preventing disease, prolonging life, and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals"*.[2] The aim of public health is to improve the health of as many people as possible, hoping that this can be achieved in the shortest possible time period. The main factors that have driven positive developments in public health have been the recognition of the need to control diseases and health in general, and the progress of knowledge in the life sciences, along with numerous socio-economic changes. One of these changes has been the establishment of public and private organizations aimed at addressing the risks that

undermine health, and, consequently at improving public health. Historically, as well as practically, four chronological socio-economic periods can be distinguished in the development of public health, as follows:[3] (a) The period of the Late Middle Ages, up to and including the 18th century; (b) the period of the 19th century; (c) the period of the 20th century, and (d) public health today, in the 21st century.

1.1. The period of the Late Middle Ages, up to and including the 18th century

In the period before the Enlightenment, health was connected to metaphysics and superstition: diseases were considered retribution for human sin, punishment for disrespect to the divine, and the fight against disease therefore followed the path of repentance, prayer and the battle against witchery. In the late Middle Ages, humanity suffered epidemics of plague, cholera, and smallpox. During the "black plague" or "black death" pandemic, as it became known, more than 100 million people died in Europe, Asia, and North Africa. As of the end of the 17th century, systematic efforts started to limit and fight epidemics through isolating patients and enforcing a "quarantine" system on migrating populations, mainly those travelling by sea. During the 18th century, when the approach to diseases started moving away from metaphysics, a spirit of positivism was adopted, which supported the concept that disease could be controlled through human intervention. Finally, a turning point in 18th century public health was marked by the establishment of voluntary hospitals for the first time, specifically for mentally ill patients. With regard to the first mental institutions, the post-modernist philosopher Michel Foucault conducted significant analysis, as early as 1964, recognising these first establishments not only as confinement premises, but also as places of enforced labor, with elements of a *sui generis* serfdom.[4]

1.2. The period of the 19th century

The 19th century was a landmark for launching mass vaccination against smallpox and reforms in the sector of everyday hygiene. The vaccine against smallpox, a disease that had caused millions of deaths, was developed in 1796 by Edward Jenner; the last case of smallpox was recorded in Somalia in 1977.[5] In addition to the effective fight against the devastation of smallpox, the reforms, and exceptional developments in the sector of everyday hygiene were responsible for characterizing the 19th century as "The great sanitary awakening".[6] At the social level, this century was characterized by the industrial revolution and by steadily increasing urbanization, which was a factor that favoured the spread of infectious disease. The consequences of urbanization, poverty, poor living conditions and lack of hygiene were perceived as the main cause of infectious diseases and their dissemination. The emerging concept now was that "Poverty and disease could no longer be treated simply as individual failings."[7] The sector of public health emphasized the need to try and improve the hygiene conditions in the community, promoting healthy housing, better sewage systems and personal hygiene measures.

1.3. The period of the 20th century

In the 20th century, health care was already organized and technologically advanced, but also expensive. The main cost was due, on the one hand, to the high technology services offered, and on the other, to increased life expectancy around the world. The main causes of mortality and disability were no longer infectious diseases, but various chronic conditions, heart and cerebral problems, cancer, and diabetes mellitus; the last two are now characterized as chronic conditions. According to the Johns Hopkins Bloomberg School of Public Health and the US Centers for Disease Control and Prevention (CDC), ten factors have substantially contributed towards improving human health and prosperity in the 20th century:[8] (a) Immunizations, (b) motor vehicle safety, (c) workplace safety, (d) control of infectious diseases (which includes immunizations), (e) decline in deaths from heart disease and stroke, (f) safer and healthier foods, (g) healthier mothers and babies, (h) family planning, (i) fluoridation of drinking water to prevent dental caries (cavities), and (j) reduction of tobacco use.

1.4. Public health today, in the 21st century

The first two decades of the 21st century were marked by developments connecting health with the environment and respect for the environment, climate change and viable/sustainable development in general. Against this backdrop, in September 2015, at the headquarters of the United Nations (UN) Organization in New York, the UN 2030 Agenda for Sustainable Development of the planet was adopted by the 193 members of the Organization.[9] The "UN 2030 Agenda for Sustainable Development" stresses the interdependent character of social, economic and environmental development, and outlines a plan to improve life on the planet, aspiring to provide the opportunity to ensure that by 2030 all human beings can live in health, dignity and equality, while conserving and respecting their home planet.[10] All efforts in the broader public health sector to emphasise sustainable development and respect for the environment were forced to a marginal

position, at least temporarily, in the beginning of 2020. On 31 December 2019 the authorities of China officially announced the appearance of the "new coronavirus 2019" in Wuhan, China (2019 novel coronavirus, COVID-19). On 11 March 2020, the WHO declared COVID-19 a pandemic; the world community is facing a dramatic health crisis with incalculable repercussions, not only affecting health but also having a socio-economic and psychological impact on public health.[11–13] The current pandemic also marks another exceptionally significant change in the public health sector: a definitive paradigm shift away from the reductionist-causal model. According to this model, for every disease there is a corresponding specific factor that causes it. The adoption of this bipolarity was extraordinarily functional during the 19th and the beginning of the 20th century regarding infectious diseases, such as typhoid fever, plague, and syphilis, and contributed to interrupting their transmission chain. Today's "paradigms" no longer focus exclusively on biological factors, but opt for analysing and synthesizing complex interaction between biological, socio-economic and environmental factors.[14] Public health consistently continues to analyse biological factors, but it now combines them with socio-economic determinants, the social determinants of public health.

2. INTRODUCTORY ELEMENTS FOR SOCIAL DETERMINANTS

A person's health status is largely determined by birth, upbringing, education, and general lifestyle within a particular social environment.[15] Life expectancy has increased over the past century, mainly due to the improvement in human living and social environmental conditions and the support of the public health sector through basic health interventions, against a background of continual advances in medical treatment.[16] The major goal for citizens and communities, in general, is to increase their health care level by controlling health determining factors.[17] Social justice and financial support, which empower citizens, as recognized by the Alma Ata Declaration[18] and the Ottawa Charter,[19] are some of the context-related means for achieving this goal. Health of individuals is affected by numerous factors, which may be generally classified into five broad categories, known as health determinants: genetics, behavior, environmental and physical influences, medical care and social factors. These five categories are interconnected. The fifth category, namely, social factors, includes economic and social conditions that influence the health and well-being of the people and communities.[17] Factors such as income, education, conditions of employment, power and social support may strengthen or undermine the health of individuals and communities. Because of their potent and underlying effects, these health-determining factors are known as the "social determinants of health" (SDH).[20,21] According to the WHO definition, *"social determinants of health are the conditions, in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life"*.[22] These include the complex, integrated, and overlapping social structures and economic systems responsible for most health inequities in the social environment, the physical environment, health services, and structural and societal factors.[17] As factors that affect health, SDH can be seen as "causes of the causes", that is, as the fundamental determinants which influence other health determinants, including patterns of health behavior and biomedical factors that are part of a person's individual lifestyle and genetic make-up.[17]

Since 2018, a renewed WHO organization-wide commitment to acting on determinants of health and the broader social determinants and health equity, has emerged, as reflected in WHO's 13th General Programme of Work 2019–2023. A strategic meeting on SDH took place on 12–13 September 2019 at WHO Headquarters in Geneva, Switzerland,[23] aimed at: (a) Celebrating the achievements in the field of SDH since the global WHO Commission on the Social Determinants of Health (CSDH), (b) reviewing the challenges and exploring new opportunities for addressing the SDH agenda, and (c) identifying key areas of work and activities for the new WHO Department of Social Determinants of Health.

2.1. Social determinants of health

The main categories of SDH are material circumstances, social-environmental or psychosocial circumstances, behavioral and or biological factors, and the health system itself.[24] Today, climate change is recognized as another SDH.[25] Moreover, the socio-economic-political context and structural determinants are factors that significantly affect other SDH. An analysis of each category is presented below.

2.1.1. Material circumstances. This category includes determinants linked to the physical environment, including housing (both the dwelling itself and its location), consumption potential (i.e., the financial means to buy healthy food, warm clothing, etc.), and the physical work and neighbourhood environments.[24] Depending on their quality, these circumstances provide resources for health, on the one hand, and entail health risks, on the other. The material standard of living is usually of direct significance for the health status of marginalized groups, particularly those in the lower socioeconomic strata (SEP), and even more so if environmental factors are included.

2.1.2. Social-environmental or psychosocial circumstances. These include psychosocial stressors (for example, negative life events and job strain), stressful living circumstances (e.g., high debt), and (lack of) social support, coping styles, etc.[24] Different social groups are exposed to a different degree to experiences and life situations perceived as threatening and difficult to cope with in everyday life. This partly explains the long-term pattern of social inequalities in the health sector. The associated stress may be a causal factor and a trigger for various illnesses.

2.1.3. Behavioral and or biological factors. These include smoking, diet, alcohol consumption and physical exercise, which, once again, can be either health protecting and enhancing (physical exercise) or health damaging (cigarette smoking and obesity); biological factors also entail genetic factors, age and gender, as seen from the SDH perspective. Furthermore, social inequalities in health are associated with social differences in lifestyle or behavioral patterns. Such differences are apparent in nutrition, physical activity, and tobacco and alcohol consumption. High risk health behavior, such as cigarette smoking, physical inactivity, a poor diet, and substance abuse, are closely related to both SEP and health outcomes.[25–28]

2.1.4. The health system. The role of the health system becomes particularly relevant in terms of accessibility, which entails differences in exposure and vulnerability; in other words, the health system itself should be perceived as a SDH. This is closely related to models for the organization of personal and non-personal health service delivery. The health system can directly address differences in exposure and vulnerability, not only by improving equitable access to care, but also by promoting intersectoral action to improve the health status of users. The health system can ensure that health problems do not lead to further deterioration of a person's social status, and that they facilitate the social reintegration of sick people.[24]

2.2. Climate change, a new social determinant of health

Climate change is indeed a new threat to public health, and it is closely related to SDH. This change is a natural phenomenon that significantly affects SDH and has critical implications for human health and well-being, and is therefore now considered to be an additional SDH.[29] Climate change should be considered a priority area when addressing health inequalities.[29] This is the main contribution of the CSDH to the "climate change agenda", since it can potentially bridge the gap between the economic and environmental pillars; it also provides the evidence necessary for the social pillar to be integrated into any "climate change intervention".[30]

2.3 Socio-economic-political context and structural determinants

According to CSDH, the socio-economic-political context refers to the spectrum of factors in a society that cannot be directly measured at the individual level, and the mechanisms (i.e., political, economic system) that hierarchically distribute power and authority to states, groups and individuals.[24] These factors, however, exert a powerful formative influence on patterns of social stratification and, thus, on people's health opportunities. These mechanisms configure the health opportunities of social groups depending on their position within hierarchies of power, prestige, and access to resources (economic status).

3. CLIMATE CHANGE AS A SOCIAL DETERMINANT OF HEALTH

Climate is fundamental for human survival and a critical factor and basic prerequisite for viable economic and social development. The progress of humanity is characterized by incessant interaction between human society and nature. Following the industrial revolution in the 18th century and the significant increase in human activities, a consequence of the industrialization of human society, the already changing climate of the earth was dramatically impacted. The rising temperature of the planet has accelerated, which has a significant impact on natural ecosystems, with profound socio-economic implications globally. In recent years, climate security has become a high priority issue for the world community.[31] Climate change is caused by fluctuations in solar radiation, the orbit of the earth, ocean traffic and human activities, such as deforestation and increased greenhouse gas emissions due to mineral fuel use.[32] Direct effects include, on the one hand, long-term fluctuation expressed in climate variables, such as temperature rise, and, on the other, short-term fluctuation through the differentiation of certain meteorological variables and the frequency of acute weather phenomena, such as floods, draughts, heat-waves, storms, which result in ice melting and the rise of sea and ocean levels. Consequently, climate change refers, in effect, to long-term changes of climate variables, including average/mean climate conditions and the distribution of extreme weather events. In 2001, the UN Intergovernmental Panel on Climate Change (IPCC) forecast that, by 2100, the mean temperature of the globe will have increased by 1.4–5.8 °C. Furthermore, while from 1901 to 2010, mean sea level increased by a mere 0.7–0.21

m around the globe, the rate of this rise in level from the mid-19th century onwards, compared to the previous two millennia, is of great concern.[33] In this light, climate change has become a significant developmental challenge around the globe, particularly for developing economies, the socio-economic growth of which is heavily dependent on irrigated agriculture. Climate change and its associated stress factors impact human life due to the destabilization of means of survival, particularly for poor households; achieving viable food production and food security is questionable, since the yield of most staple food crops is either stagnant or following a declining trend.[34] Concerning health, climate change has already affected, and will continue to affect, the health of the world's population, as it leads to malnutrition, diarrhea, malaria, dengue fever, injuries, deaths due to floods and heat-related diseases, placing a significant burden on health systems. According to the UN IPCC, if climate change continues at the current rate, food and water insecurity, human conflicts and epidemics of novel or reoccurring infectious diseases will become exceptionally high-risk phenomena for public health.[35] According to the figures from the EM-DAT international database on natural disasters for the 1998–2017 period, climate change and geophysical events in general have caused the death of about 1.3 million people, while another 4.4 billion people have needed emergency aid following a natural disaster.[36] The WHO estimates that between 2030 and 2050, climate change is expected to cause about 250,000 additional deaths a year, due to malnutrition, malaria, diarrhea and thermal stress, while the projected annual cost directly incurred by health problems is estimated to be 2–4 billion USD by 2030.[37] Climate change is also expected to increase the number of those suffering from food insecurity, while those at risk of hunger is expected to be to 170 million individuals by 2080.[38] Based on the data presented above and despite the fact that the 2008 World Health Assembly of the WHO ratified a resolution inviting member states to take decisive measures to tackle the impact of climate change on health, efforts to this effect have attracted extremely low interest on the world agenda.[39]

3.1. Climate change and health

The question of the relationship between climate change and health is included in the 4th assessment report of the 2007 IPCC; according to this report, climate change is already contributing to the global burden of diseases and early death, and this burden is likely to increase in all countries. The extent and nature of the future impact on health will depend on the specific features and scale of climate change,[40] which are expected to affect human health in various direct and indirect ways and through complex mechanisms. It is estimated that, by 2030, the annual number of people who will lose their lives due to climatic factors will reach 300,000. It should be noted that the health effects of climate change vary depending on the geographical region, the socio-economic levels of development and the capacity to adapt and resist.[41] Regarding direct health effects, these are related to, *inter alia*, overall climate instability; for example, heat waves, drought, and increased frequency and severity of extreme precipitation levels. The secondary impact includes effects related to the negative aspects of climate change on agriculture, access to clean water, geographical distribution shifts of infectious diseases, migration, increased competition for limited resources often leading to armed conflict,[42] as well as the degradation of atmospheric air.[43] The rise in temperature caused by climate change leads to aggravation of chronic cardiac and pulmonary diseases, with significant reduction in workers' productivity, with negative economic consequences. The heat-related impact on health mainly appears during warm periods, with morbidity and mortality being particularly severe during heat waves. Risk factors for morbidity and mortality during heat waves include poor housing, advanced age, solitary living, absence of air-conditioning facilities and outdoor labor.[44–45] Low temperatures are also associated with increased mortality, many deaths being due to cardiovascular and respiratory diseases, which are exacerbated by the cold. On the other hand, milder winters are expected to reduce winter mortality and morbidity by 9% by 2020 and by 26% by 2050, despite population increase and the demographic changes that will increase the size of vulnerable population groups. Energy poverty and poor housing increase exposure to cold-related death, with the elderly often suffering from both conditions and being more frequently exposed than other population groups. Sensitivity to cold is increased by pre-existing health problems, such as cardiovascular or respiratory diseases, which are more frequent among individuals of advanced age. Finally, limited financial and information resources are, in their turn, likely to weaken the adaptive capacity of the elderly population.[45] Climate-related desertification and drought are also significant public health issues, particularly regarding the capacity of low income countries, which find it difficult to maintain sufficient food production and to safeguard safe drinking water and sewage systems. According to the WHO, malnutrition is the most significant climate-related health issue at the global level; it is responsible for a large share of deaths due to pneumonia among children under the age of five years. The countries expected to be hurt most by the food crisis caused by climate change include those in Sub-Sahara Africa and South-East Asia, where

the food reserves are already limited.[43] Climate change is also the most important factor for the spread of infectious diseases, as higher temperatures can accelerate the growth rates of pathogens, and of insect vectors. Climate change may result in human migration, which will expose previously isolated and particularly vulnerable populations to new pathogens. In addition, extreme precipitation causes flooding phenomena, disrupting water supply and sewage systems, thus increasing the risk of water-borne epidemics. Apart from these direct effects on the spread of infectious diseases, climatic factors change human behavior, with indirect effects on the transmission of infectious diseases. For example, higher temperatures result in higher numbers of people using public swimming waters, thus increasing the probability of water-linked epidemics.[46] Climate change is also likely to contribute to the appearance/emergence of problems related to air quality, and respiratory disorders may be exacerbated due to increased emissions and atmospheric pollution. The cumulative impact of exposure to multiple pollutants that might act in synergy, and the latent period until symptoms develop, may make it difficult to recognize correlations between atmospheric pollution and health.[47] Concerning air pollutants, climate change has been associated with high ozone concentration, which is one of the most harmful atmospheric pollutants for health; exposure to ozone has been associated with numerous health indicators, such as increased numbers of visits to emergency departments and longer hospitalization periods, exacerbation of asthma, cardiovascular stress, reduced pulmonary function and early death.[48]

3.2. Climate change and mental health

Climate change is a significant threat for mental health. Extreme weather phenomena may have a negative effect on the mental health of people directly or indirectly exposed; this leads to increased mental distress and increased rates of mental disorders among high-risk individuals and populations who are either under chronic exposure or experience repeated occurrences of extreme weather phenomena. Mental discomfort may appear in an individual following progressive observation of environmental change and the experience of a related sense of loss. This loss is particularly significant for individuals or communities with previous strong identification with and attachment to their environment. In the cases that these changes are accompanied by extreme weather phenomena, apart from the direct impact, there may also be mid-term and long-term social, economic and cultural changes that trigger mental distress. Such changes, in combination with pressing social conditions, such as increased competition for resources, fragmentation of communities and marginalization, may undermine mental health. Finally, media-disseminated messages concerning the anticipated future impact of climate change or impact elsewhere in the world may also affect the mental health of individuals.[49] Mental health impact varies depending on the type, suddenness and scale of catastrophe, and on the socio-economic and cultural context within which it occurs. Exacerbating factors are the vulnerability of individuals and communities, the absence of state emergency reaction measures and insufficient or restricted resources available for the provision of support/aid and rehabilitation. Regardless of the socio-economic and cultural differences between countries and people, there seem to be certain common patterns of psycho-social response to disasters.[50] Extreme weather phenomena, such as floods, which are the commonest disasters at the global level, forest fires, heat waves and cyclones/tornadoes appear to be strongly associated with post-traumatic stress disorder (PTSD). In particular, long-term anxiety, depression, PSTD, increased aggression among children, or even suicidal tendencies, have been found to be correlated with floods.[51] Studies concerning the impact of climate change on mental health among populations from totally different geographical regions, from rural Australia to the frozen North Canada, have shown a wide range of mental disorders related to both acute and long-term climate and environmental change. Such disorders include, *inter alia*, increased anxiety levels and mood disorders, acute stress reaction and PSTD, a higher frequency of violence and conflict incidents, increased drug and alcohol abuse, intense affective reactions, such as despair, fear, helplessness and suicidal ideation, reduced sense of self and identity due to the loss of location, and grief reactions.[52]

3.3. The effect of climate and climate change policies on health

Health authorities are responsible, not only for promoting the physical and mental health of citizens, prevention, treatment of and recovery from illnesses, injuries and disabilities, as well as improvement of health care systems, but also for developing and implementing adaptive strategies to reduce health risks related to climate change.[53] Policies and strategies concerning the climate and introduction of technologies to reduce greenhouse gas emissions may have multiple beneficial effects on health, due to the reduction of exposure to atmospheric pollutants, increased physical activity and reduction of the incidence of diet/nutrition-related diseases. For example, changing behavior and returning from private cars to the use of public transport may contribute towards reducing CO_2 emissions, local

atmospheric pollution, traffic congestion and motor accidents, while the combined adoption of policies promoting walking and cycling may offer additional benefits for the physical condition of the population, thus reducing the impact of numerous chronic conditions. Given that the dietary habits of the Western world, mainly, are responsible for producing about 25% of greenhouse gas emissions globally, with farming being the main source of methane and nitrogen oxide emissions, and food processing, transport and storage contributing to the emissions of CO_2 and fluorocarbons, the adoption of an emission duty system that encourages the consumption of foods responsible for relatively low levels of greenhouse gas emissions could be beneficial for both climate change and health (i.e., by shifting from a meat-based diet to one that promotes plant-origin food, particularly in high-income countries of the developed world).[54]

4. CONCLUSIONS

Today, climate change has been recognized as one of the major threats to human health on the planet, since it can have significant direct and indirect effects on the physical and psycho-social health of individuals and populations.[55] Specifically, climate change and the consequent disruption of social, economic and environmental health factors may bring about large scale socio-psychological changes,[56] increase the incidence of mental health problems, change the incidence and distribution of food-originating, water-originating and transmitted disease carriers, and result in increased mortality and morbidity from the occurrence of extreme weather phenomena,[57] food and water shortage, mass migration and displacement of populations.[58] Taking into account the present and anticipated impact, it is imperative that policies, measures, strategies and actions be taken to reduce the vulnerability of populations to climate change and to enhance resistance/resilience, not only at the individual level, but also at the community level and the level of public health.[55] Health professionals should recognize the importance of expertise and know-how to further comprehend the impact of climate change on health. Considering the possible range and geographical spread within which health impact is to be expected, the methodological challenges regarding the study of emerging pertinent issues are of utmost importance. Finally, interdisciplinary cooperation of health professionals is vital, for example, with climate experts, geography experts, environmental epidemiologists, city-planners, computer programmers and experts in the development, planning and implementation of substantial research into related issues.[58]

ΠΕΡΙΛΗΨΗ

Η κλιματική αλλαγή ως κοινωνικός προσδιοριστής της δημόσιας υγείας

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Τα τελευταία έτη έχει αναγνωριστεί παγκοσμίως ότι οι απειλές και οι συνέπειες της κλιματικής αλλαγής για τη δημόσια υγεία και, συνεπώς, για την ποιότητα της ανθρώπινης ζωής είναι πολύ σοβαρές. Η ανάγκη προστασίας του πλανήτη από την κλιματική αλλαγή βρίσκεται πολύ υψηλά στη διεθνή ατζέντα των κοινωνικών προβλημάτων. Η κλιματική αλλαγή είναι σήμερα ο πλέον σοβαρός περιβαλλοντικός κίνδυνος με αρνητικές επιπτώσεις σε ολόκληρο το οικοσύστημα. Η βρετανική μετεωρολογική υπηρεσία ορίζει την κλιματική αλλαγή ως *«μια μεγάλης κλίμακας, μακροπρόθεσμη μετατόπιση των καιρικών συνθηκών του πλανήτη και των μέσων θερμοκρασιών»*. Η κλιματική αλλαγή μπορεί να επηρεάσει βασικά αγαθά για την επιβίωση και την υγεία του ανθρώπου, όπως η ποιότητα του αέρα, του νερού και η στέγαση, ενώ συχνά ευθύνεται για ζητήματα επισιτιστικής επισφάλειας και για εμφύλιους πολέμους. Τα ποσοστά εμφάνισης μεταδοτικών αλλά και μη μεταδοτικών ασθενειών, όπως οι ψυχικές ασθένειες, οι καρδιαγγειακές παθήσεις, οι χρόνιες αναπνευστικές παθήσεις, ο καρκίνος και ο διαβήτης, αυξάνονται. Ο Ángel Guría, Γενικός Γραμματέας του Οργανισμού Οικονομικής Συνεργασίας και Ανάπτυξης (ΟΟΣΑ) έχει υπογραμμίσει «την ανάγκη για άμεση παγκόσμια δράση για την κλιματική αλλαγή», προσθέτοντας ότι *«η κλιματική αλλαγή αποτελεί ένα ζήτημα δημόσιας υγείας που επηρεάζει δυσανάλογα τους πλέον ευάλωτους πληθυσμούς, καθώς και εκείνους που είναι λιγότερο υπεύθυνοι για την υπερθέρμανση του πλανήτη ως συνέπεια της ανθρώπινης δραστηριότητας»*. Σύμφωνα με τους ερευνητές του Παγκόσμιου Οργανισμού Υγείας, η κλιματική αλλαγή αναμένεται να προκαλέσει περίπου 250.000 επί πλέον θανάτους ετησίως μεταξύ 2030 και

2050. Από αυτούς, 38.000 θα οφείλονται στην έκθεση των ηλικιωμένων σε εξαιρετικά υψηλές θερμοκρασίες, 48.000 θα οφείλονται σε διάρροια, 60.000 σε ελονοσία, ενώ 95.000 παιδιά θα χάσουν τη ζωή τους από υποσιτισμό. Δυστυχώς, η Συμφωνία των Παρισίων για την αλλαγή του κλίματος, η οποία θεωρητικά τέθηκε σε ισχύ στις 4 Νοεμβρίου του 2016, δεν έχει ενεργοποιηθεί. Αντίθετα, τον Νοέμβριο του 2019, ο Πρόεδρος των ΗΠΑ Donald Trump ανακοίνωσε ότι οι ΗΠΑ θα καταγγείλουν και θα αποσυρθούν εντελώς από τη Συμφωνία των Παρισίων τον Νοέμβριο του 2020.

Λέξεις ευρετηρίου: Δημόσια υγεία, Κλιματική αλλαγή, Κοινωνικοί προσδιοριστές, Ποιότητα ζωής

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