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REVIEW

Public Health in the Framework of the International Security. A Constructive Approach

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The article highlights the fact that public health is an element of the security dimension that must be included on the priority agenda of specialists in the fields of international relations and security studies. There are arguments in favor of this theory. The costs of materializing threats to human security in general and public health in particular are particularly high, with serious long-term consequences. Global trends and prospects for the implications that can be generated are likely to change the world's security landscape, and increasing global connectivity increases the degree of uncertainty about public health implications. Non-traditional issues arising from technological change can induce risks, whose management may go beyond institutional capacities. On the other hand, the new types of wars, increasingly interconnected with various forms of risk materialization, make this mission more difficult. The final conclusion is that these risks need to be assessed to ensure national, regional or even global security, and international cooperation for prevention and counseling.

Keywords: human security, public health, international security, globalization

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Introduction

The current dynamics of the international environment entail certain dilemmas for international relations, imposing new approaches in the realm of security, from the perspective of the *human security* paradigm. This allows for the emergence of new actors in the concept framework, such as the health status, a field of the utmost importance for human beings, and the threats it might be subject to. As a matter of fact, human security, a concept which has been consecrated in the 1994 Report on Human Development of the United Nations Development Program [1], is identified based on its six components: health security, food security, environmental security, personal security, economic security and political security.

Despite the traditionalist view in security studies, which aims to limit the issue to the military and political sectors, the importance of public health and of the challenges it represents in the framework of international security has been well proven on the occasion of the Special Session on the HIV Epidemic organized by the United Nations Security Council in 2000, for the first time in the agenda of the foremost international body. [2]

The impact of globalization on public health is manifest in the series of uncertainties regarding its consequences on the health of the population. Generally speaking, globalization entails a blurring of state borders in the face of such new threats as terrorism, cybercrime, trans-border organized crime, human trafficking, drug crime or trafficking of strategic materiel. It is even more obvious that, in the case of threats to public health, the etiologic agents responsible for the spread of disease would not stop at any state's frontier. Therefore, public health should be approached as a component of international security, taking into account the fact that globalization has caused the threats to evolve, entering a transnational dimension.

Human security

Promoting the paradigm of human security can be justified discursively on the basis of the idea that all human lives are equally valuable, as we all belong to the human species. This can be contrasted with the national security paradigm, which is based on the principle of privileged security of nationals. [3] Human security is concerned with the security of individuals and communities, rather than with that of nation states, and builds upon both human rights and human development; it is the supremacy of human rights which differentiates it from the traditional, state-centric approach. [4] A substantial body of literature on human security uses the notion of threat in order to describe a long (and growing) list of challenges to human security. So as to allow the classification of these issues – from pandemics to human-induced environmental disasters, nuclear weapons and small-arms proliferation – all these threats are included in the list, with no prioritization and with no estimate on their respective probabilities to occur; furthermore, an estimate of the costs associated with such distinct sectors is required. The rate of AIDS mortality or that of HIV infection illustrates the direct human costs of such diseases, with no indication of the consequences or the costs of public policies or preventive strategies, especially in such instances where the social and economic costs are significant in the long term. [5]

Human life is subject to various conflicts. The rate of civilian casualties was 10% during the First World War, 50% in the Second World War, and 80-85% in more re-

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cent wars. Many of these victims were children, women, sick or elderly.

Such „new wars" are increasingly interwoven with other global risks – the spread of diseases, an increased vulnerability to natural disasters, poverty and homelessness. A significant percentage of casualties in times of war is indirectly caused by the lack of access to sanitation and by the prevalence of disease, hunger and the destruction of residences. [4] (Table I)

Although some threats are associated with very large costs in human lives, such as the potential use of a nuclear weapon by a terrorist organization against a major population center, the actual probability of such an occurrence may be quite low, at least relative to the human insecurity situations which impact certain people on a day-to-day basis. A series of human security indicators made available by the United Nations in 2002 [6] show that the main threat sources are structural:

– Every day, more than 30,000 children throughout the world succumb to preventable diseases, for a total of over 11 million each year;
– 5% of the world's richest people earn 114 times more than the income of the world's poorest 5%. One percent of the richest have as much as 57% of the poorest;
– 2.8 billion people live on less than US$ 2/day, and of those, 1.2 billion must survive on less than US$ 1/day; Between 1997 and 1999, approximately 815 million people suffered from malnutrition;
– In the 1990s, the absolute number of people in Sub-Saharan Africa living in extreme poverty increased from 242 million to 300 million;
– Towards the end of year 2000, nearly 22 million people (and currently, according to the United Nations Development Programme, 24.8 million) died of AIDS, 13 million children were orphaned of their mothers or both parents, more than 40 million people were infected with HIV, with 90% of them living in the developing world, and 75% in Sub-Saharan Africa;
– 100 million baby girls would have been born alive but for the practice of selective abortions (due to gender preferences), or died because of infanticide or neglect;
– Each year, there are 300 million cases of malaria infection, 90% of them in Sub-Saharan Africa;
– More than 500,000 women die each year during pregnancy, while giving birth or in the immediate term. [7]

Institutionally-determined mortality is separate from the casualties of military conflicts. The high rate of mortality in children younger than 5 years of age is a consequence of conscious policies: it is a consequence of socially-constructed bio-poverty and is the product of those national and international public policies which prevent the population's access to such prerequisites of life as water, sanitation and otherwise cheap vaccines. [8]

An analysis by the Office of the Director of National Intelligence points to certain global tendencies and their key implications until 2035, capable of drastically changing the picture on a global scale, such as the following:

Climate change, environmental and health issues which require extraordinary attention. Extreme weather phenomena, inadequate water and soil management and food insecurity will impact societies.

Sea level rises, ocean acidification, icecap melting and pollution will change life patterns. Climate change induced tensions will increase. Advances in global population mobility and precarious healthcare infrastructure will make it increasingly difficult to manage infectious diseases.

The silent and chronic threats of air pollution, water deficits and climate change will become more visible, leading to more frequent conflicts, as the study and prevention of these issues remain partial and individual endeavors, instead of a global effort.

Demographic changes will impact employment, social welfare and social stability. The population of developed countries is aging, whereas in many of the poorest countries, the number of males is on the rise and migration increases: people follow their hopes of finding a better life, or escape the horrors of conflicts.

World population will continue to grow, to turn increasingly older and more urban, even if the rate of increase will slow down. The effects on individual countries will vary substantially however, because the world's major economies will grow older, while the developing countries will remain comparatively younger. From the current 7.3 billion, the world population is expected to reach 8.8 billion before 2035. The population of Africa – with a fertility rate double that of the rest of the world – and that in certain parts of Asia will increase. This might lead to economic advances or to disasters, depending on how much those respective governments and societies invest in education, infrastructure, infrastructure and other key sectors.

The number of displaced or mobile persons will stay high or may even further increase, as environmental issues become more stringent.

Table I. Statistical data on the number of deaths resulting from structural causes, respectively as a result of acts of direct violence

	Military and civilian casualties of violent conflict – deaths due to direct violence	Deaths due to smallpox	Deaths due to malaria	Deaths due to cholera	Deaths due to parasite-borne diseases and to respiratory infections
2002	21,405	611,000	1,272,000	1,798,000	14,866,870
2003	47,351	530,000	1,000,000	1,788,500	-
2004	41,586	454,000	1,000,000	1,820,007	-
2005	31,013	345,000	1,000,000	-	14,018,871

(Source: World health report 2004)

Changing weather, the increasing pressure on natural and environmental resources, and the deepening interdependence of human and animal health reflect complex systemic risks, capable of overrunning current management approaches.

Extreme weather may lead to crop failures, wildfires, energy depletion, infrastructure and supply chain breakdown, migrations and epidemics.

In the long term, global climatic stress will change the known habitation patterns, but also the types of diseases currently threatening humans. Such factors include sea level rises, ocean acidification, melting icecaps, degraded air quality, cloud capacity changes, and sustained modifications of global temperature and rainfall patterns.

Nearly all Earth systems suffer natural or anthropogenic crises which overcome the national and international environmental protection efforts. Institutions will have to fight harder and harder to manage the complex interdependencies between water, food, energy, land, health, infrastructure and workforce.

Before 2035, it is estimated that air pollution will become the main environmentally-related cause of death on a global scale, due to non-implementation of recent air quality measures. More than 80% of urban residents are already exposed to air pollution levels which surpass safety limits, according to the World Health Organization. [9]

Public Health – between challenges and moral/ethical responsibilities

Public health – a multidisciplinary concept, situated at the crossroads of life sciences and social science – is aiming towards prevention of disease, lifespan extension and health promotion, via an organized, conjugated effort of all society. It utilizes means inherent to the field of medicine, but it also borrows from elsewhere: sociology, psychology, statistics, communication science, anthropology, economics, marketing, political science. In a globalized world, the increasing connectivity and changing environment will bear a significant toll on the geographic distribution of both pathogens and hosts, which will, in its own turn, impact the emergence, transmission and spread of many infectious diseases, affecting both the human and the animal population. The health of both populations will be increasingly interconnected. The deficiencies of national and global healthcare systems will make it increasingly difficult to identify and manage the hotspots of infectious diseases, increasing the risk for epidemics to potentially spread beyond their original areas. Nevertheless, non-transmissible diseases, such as heart disease, cerebral vascular incidents, diabetes and mental disorders, will greatly surpass infectious diseases in the coming decades, due to certain demographic and cultural factors, such as population aging, poor nutrition and hygiene, urbanization and increasing inequalities. [10] In the Report on Human Security, Amartya Sen conceptualizes human security by referring to the exposure to disease or pandemics uncertainties, or to persons vulnerable to sudden poverty. [4]

Recently, threats considered hypothetical have become historical fact. The bioterrorism phenomenon represents a real, present threat to the future of humanity, due to its consequences.

The threat of biological attacks is considered a public health issue, as the damage it poses is considerable even in such a scenario where the number of infected persons is small. Military force is lacking effectiveness in countering this threat, therefore it is becoming crucial that defensive measures be deployed within the healthcare system.

Scientists have issued warnings that the current measures against biological attacks are insufficient and, probably, ineffective. To support such views, we only need to consider the rapid spread of some viral infections, confirmed by the statistics of the World Health Organization. An attack using biological weapons might have catastrophic consequences for the future of humanity. [11] Considering that biological weapons ("the poor man's nuke") do not require sophisticated technologies or significant quantities of offensive material, we are facing a somber picture of the risks generated by the exposure to such an attack.

The risk of chemical, biological or nuclear terrorism is on the rise, in a world where there is increasing interethnic and religious violence and human rights abuse. International treaties governing such weaponry are lacking in control measures. Therefore, the fight against terrorism imposes the involvement of non-governmental organizations, as well. [12]

The proliferation of advanced technologies, especially biotechnologies, will further lower the threshold for new actors to obtain weapons of mass destruction. Biotechnologies such as genome sequencing will revolutionize medicine and other fields as well, yet the moral aspects involved will become ever more acute. The recent discoveries in gene reproduction and manipulation such as Clustered Regularly Interspaced Short Palindromic Repeats open huge new possibilities in biotechnology. [9]

Technology will continue to strengthen the position of individuals, small groups, corporations and state entities, and to accelerate the rate of change, introducing new complex challenges, discontinuities and tensions. The development and deployment of advanced technologies, especially Artificial Intelligence, innovative materials and manufacturing capabilities, robotics and automation, will modify the current paradigms governing the pharmaceutical and medical systems. They will also pose fundamental questions about what is the meaning of being human. Such evolutions will increase the divide between various society values, hindering a progress of international regulation of such sectors. The existential risks associated with some of these applications, especially synthetic biology, genome manipulation and Artificial Intelligence, are already real. [9]

A few years ago, the Clustered Regularly Interspaced Short Palindromic Repeats technology was revealed to be

applicable in connection to a set of enzymes which accelerate or catalyze the chemical reactions involved in modifying specific Deoxyribonucleic Acid sequences. Such a capacity revolutionizes biology, and it accelerates the rate in which applications of biotechnology are developed for responding to medical, healthcare, industrial, environmental or agricultural problems, but at the same time, it raises significant ethical and security issues.

Biotechnologies have reached a turning point where progress in gene testing and editing, catalyzed by new manipulation technologies, turn science fiction into reality. The time and costs required to sequence the human genome have been greatly reduced. Such possibilities open the door to new approaches in human adaptation, treatment of diseases, lifespan extension or food production. [9]

It is highly likely that extant institutions will face non-traditional issues, such as genome reproduction, AI and human enhancement, because technological advances will have significantly surpassed the capacity of the states, agencies and international bodies to regulate and standardize in these matters. And, as if all this would not suffice, world epidemics, sanitation disasters, food crises and economy crashes, Genetically Modified Organisms, junk food, dangerous drugs, pollution of all types, nothing will prevent the 21st century Homo erect to be the most subject to malnutrition and the most in danger of poisoning, of all human beings since the dawn of time. [13, 14]

Conclusions

In the context of globalization and alarming evolutions of risks generated by climate change, transmission and spread of infectious diseases, proliferation of chemical, biological or nuclear weapons, and uncertainties regarding emergent technologies, there is a clear need to assess these risks in the benefit of national, regional and global security.

The manifestation of such threats in a globalized world imposes international cooperation and common programs for their prevention and countering, by initiating action independently of the territory.

The dynamics of the international security environment, together with the application and the acceptance of the constructivist theory/perspective on security, imposes adaptive approaches of the concept.

Social rules, norms, principles, institutions and organizations capable of clarifying and providing resolution to the "dilemmas of security deeply engrained in human condition, multiplying and in increasing complexity, due to the emergence of a world society in the evolution of an armed species which for the first time has both the knowledge and the means required for self-annihilation".

Conflict of interest

None to declare

Author's contribution

Sergiu Viorel Borsa (Conceptualization; Formal analysis; Writing – original draft; Writing – review & editing)

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