Mini Review

Incorporating Public Awareness into Climate Change Health Planning

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Public Awareness – The Missing Link

Climate change is a global issue and its immediate and long-term health effects are significant and severe. According to the World Health Organization (WHO, 2016), "Between 2030 and 2050, climate change is expected to cause approximately 250,000 additional deaths per year, from malnutrition, malaria, diarrhea and heat stress". Further, "the direct damage costs to health (i.e. excluding costs in health-determining sectors such as agriculture, water and sanitation), is estimated to be between US$ 2-4 billion/year by 2030[a]". Despite the mitigation and adaptation efforts taken by governments, international organizations and local NGOs, the involvement of the public, as an important and central actor in these efforts, is missing. By gaining public's awareness, cooperation and commitment the coping ability can be improved, health risks can be reduced, and lives will be saved. It is fundamental in the public health practice that the public should be informed regarding any risk or threat that might affect its health and wellbeing [1]. Communicating the possible risks to health caused by climate change is one of the basic and immediate missions of governments and the United Nations (UN) (WHO, 2016)[a]. Without the public's awareness, understanding of accessible scientific and technical information, and support for government's regulations and actions, people will not make appropriate decisions [2] that will protect their health and minimize the devastating health risks and damage caused by climate change's phenomena such as floods, droughts, heat waves, and storms. Hence, there is a growing need to evaluate the effectiveness of communication channels by which climate change health consequences will be delivered to the general public and to vulnerable groups (such as minority groups, elderly, disabled etc), in particular.

Therefore, disaster planning must also incorporate the important link between climate change and public health from the perspective of the public awareness and risk perceptions. By studying the public's knowledge, attitudes and risk perceptions towards climate change, governments and international health organizations will be able to better adjust the risk communication efforts, and design appropriate, cost-effective and most important – behavior changing policy and regulation.

Climate Change and Public Health

Climate change has significant implications on public's health and wellbeing. The raising surface temperatures and rising sea levels, among other phenomena, lead to extreme climate events such as heat waves, floods, hurricanes and tornados, which have an immediate and long term impact on population's health, such as death, injury, disability and disease [3,4]. Further, the public is also indirectly exposed to climate change through decrease in air and water quality, and changes in agriculture and ecosystems (affecting, among others, the quality and quantity of food) [5]. Consequently, these threats to public health increase vulnerability and put at risk the population's coping ability.

According to the Intergovernmental Panel on Climate Change (IPCC) [5], a key element in reducing vulnerability to the health threats posed by climate change is adaptation. By taking specific actions, at the local, national and international levels, citizens may tackle the adverse health outcomes and most important, increase the coping ability of individuals and communities. Such actions might include: vaccination, watershed protection policies and warnings for floods and storms [6]. Furthermore, according to the Kovats, et al. in the context of public health, managing the adaptation and prevention processes as well as the assessment of the coping ability, requires cooperation among three main players: the government, international organizations and panels such as the IPCC and WHO and the public. Eventually, the process includes three steps: (a) acknowledgment that a problem exists and understanding of the causes, (b) a political interest to act and mitigate the adverse consequences, and (c) given the former two steps, actual intervention and action, resources allocation and change. While governments and international organizations lead such efforts, the public sphere in this triangle is a critical factor that plays a significant role as both a stakeholder and a "client". This leads to the growing need to fully understand the public's awareness, knowledge and communication paths as gateway for preparedness through attitudes and behavior change.

Climate Change Awareness and Risk Perceptions

In general, as climate change impacts are raising mainly due to human-caused actions, and threats constantly evolve, it becomes clear that substantial disaster planning towards mitigation of these impacts, as well as adaptation efforts to reduce the risks, must include the cooperation of the public. It is of higher importance, therefore, to include in the preparedness process the intersection between scientific knowledge on climate change, public's understanding and consensus that the problem is concrete and immediate, and acceptance that policy, regulations and enforcement is needed [7]. Recent research has focused on several perspectives of this issue, namely gaining public's cooperation with desired behavior and developing required coping ability. Awareness of the problem [8-10], perceived risk [11-13] and support in government's policies [14,15] are the main themes which allow international comparisons [16] and comprehensive understanding of the public's role in the mitigation and adaptation efforts [17].

The threat to health is serious and concrete. Some risks are new (for example, infectious diseases; ICCIC, 2012:69) [18], but others are intensified appearances of existing health problems, caused directly and indirectly by the changes in ecosystems, food and water conditions, air pollution, heat waves, droughts and floods [5,19]. As a consequence, preparedness and prevention actions should take place to mitigate such health problems, mainly through public outreach and education, medical treatment, and infrastructure development [18]. These actions are part of a process, which has substantial benefits for communities and nations, and might improve and protect human lives beyond the immediate threat caused by climate change [20].

The Public as an Active Partner in Health Promotion Activities

It has been long studied that the general population, community and bystanders in particular, play a significant role in life saving efforts and reducing health risks [21-23]. Although not equipped nor have the appropriate training, bystanders participate in search and rescue actions after disasters, such as earthquakes and terror attacks [22] and provide the immediate help and treatment which allow official first responders, who arrive later at the scene, to continue the medical care professionally. This phenomenon emphasizes the active and positive role taken by the public in reducing risks when facing an extreme event. In particular, we use these findings to elaborate on the notion that the public should also be counted as a significant factor in such prevention and adaptation actions as climate change demands. By accounting the social responsibility of climate change adaptation and mitigation to the health systems and large global and local industries, we must not neglect the issue of the personal responsibility of the individual to promote her/his own health, choose prudent lifestyle and avoid risky behaviors [24,25]. For example, individuals and communities, should take an active role by changing their food and goods consumption, reduce energy use, and act to prevent spread of diseases. Increasing the public's knowledge and awareness and enhancing a dialog between citizens and the government and other interest groups, will allow the increasing of public's cooperation as well as support and compliance with government's regulations and policies to avoid and reduce health risk. It will also lead to an informed population who can, by applying common sense and culturally nuanced behaviors, become more resilient to climate change consequences.

Surveys in the US reveal that the public is generally aware of climate change (for example, "heard about it"), but lacks correct knowledge regarding its origins and consequences [26]. In the context of public health, a 2014 national survey found that although people agreed that climate change might have an effect on health, this relationship was not direct and intuitive [2]. Of important concern is the fact that, although there is a scientific consensus regarding climate change, the public misperceive its origins (there is ambivalence if climate change is a political or scientific issue or, rather, an environmental problem), which might lead to improper attitudes towards the outcomes of climate change and as a result, noncompliance behavior and decreased support in mitigation and adaptation policies [27,28].

In Oregon, a survey of the health consequences of climate change distributed among health service personnel revealed that the public health workers were aware and knowledgeable about health outcomes of climate change (80% of them), and 88% noted that climate change will have greater impact in the next 20 years. However, 97% admitted that this subject is not at their five top priorities. Most of them (86%) also agreed that the state's preparedness level will much improve if funds and staff will be allocated. These results emphasize the importance of awareness in preparedness actions.

In summary, by evaluating and gaining more insight on public awareness, knowledge and attitudes towards climate change and its health implications, health policy planners will be able to promote safe health practice by involving the public as a partner in such mitigation efforts. This can be done by communicating the evolving risks to the public, leading to behavior change and contribute to the local national and global efforts of reducing the health threats caused by climate change.

Footnote

ªhttp://www.who.int/mediacentre/factsheets/fs266/en/(retrieved: September, 2016).

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