EDITORIAL

'ONE HEALTH' AND HEALTH PROFESSIONS EDUCATION: THE UPHILL PATH

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The whole cosmos is interconnected maintaining an intricate balance of creative – destruction. Similarly, here on the 'Pale Blue Dot', as Sagan called our planet Earth, every living and non-living thing is woven together. They all function according to the laws of nature including, cells and organs within our bodies.[1,2] The laws of nature demand respect. Disrespect has a price, at times very high.

The human trait to think, leads to curiosity. Its ability to seek, find, create and innovate is unstoppable. At times the brilliance of mind transgresses the laws of nature, inviting its wrath.

The burgeoning scientific progress, especially in the 20th century has led to extensive industrialization, massively increasing consumption of biofuels, disrupting the atmosphere due to greenhouse gas emissions, leading to global warming and ozone depletion, resulting in the climate change. Rise of temperature of more than 2^0 c would be detrimental.[3] The climate change has been further compounded by release of methane gas from extensive meat consumption, population growth and globalization. This has negatively affected the soil, threatening food security and food safety. Poor air quality adds to the plight.[3-5] Climate change is a human created self-destructive mode, now labelled as 'Anthropocene', a 'wicked problem' and a 'threat multiplier'.[3]

The changing climate has led to tremendous rise in the 'Emerging Infections Diseases (EIDs), since the middle of the 20th century. Many of the infections are due to 'Zoonosis' like, severe acute respiratory syndrome (SARS), Ebola, HIV, Avian influenza etc. [6]

The problem is a complex one. It is multifactorial, multifaceted, diabolic and gigantic which cannot be addressed by medical science alone. The way forward is connectedness, collaboration and coordination of the multiple disciplines. Apart from medical science, veterinary medicine, public health and ecology plays essential roles[6] alongside proficient governance policy making and advocacy.[4] This interdisciplinary and cross-sectoral way forward is labeled as 'One Health' approach.[3]

The 'One Health' approach is defined as, “An integrated, multidisciplinary approach that recognizes the interconnectedness between people, animals, plants and the shared environment at various levels, including local, regional, national and global”. Its goal is to ensure healthy humans, animals and ecosystems.[7]

Health professionals, doctors, nurses and pharmacists have a major role to play. They can educate the upcoming generations of health professionals, community and stakeholders, influence higher authorities on the significance of 'One Health', and decarbonize their facilities[8] which add around 5% to greenhouse gases emissions.[5]

The health professionals can play an active role in the 'one health' if they are educated and integrated in to cross-sectoral framework. The question is, what to teach and how much to teach specially, at the undergraduate and postgraduate level. Maxwell and Blashki suggest that apart from in-depth knowledge of zoonosis and climate change effects on the health, the curriculum content should focus on the breadth of education, that is, public health and eco health literacy with the skill to apply the knowledge.[4] Deciding how much to teach is challenging, given the high cognitive load and time constraints.[7]

How to teach is another area to ponder 'One Health' is collaborative approach, this requires collaborative learning of the multiple disciplines.

Several methods have been suggested to achieve this goal. One is the development of a common coursework with technology enhanced learning making it attainable. Other approaches include, “One Health Institute”

offering workshops as summer electives. It has been instituted by certain universities. The creation of "Centers of One Health Excellence (COHE)" is another method mentioned in the literature to create domestic and international network for interdisciplinary learning. The interaction to be enabled by communication through technology. The biennial conference of International Association of Ecology and Health (IAEH) is a useful platform for 'One Health' knowledge exchange.[6]

To further enhance the cross-sector collaboration, four global organizations including the World Health Organization (WHO) developed 'One Health' High-Level Expert Panel (OHHLEP) in May 2021. Moreover, important international events are happening to bolster climate change control since 1992 from Rio De Janero to the Paris agreement of 2015.[7]

Efforts towards 'One Health' approach have achieved some success stories. For e.g, rabies mitigation in Sri Lanka, Bhutan and Bangladesh and cost saving by Canadian Science Centre in Winnipeg through integrating laboratory facilities for human and animal contagious disease. However, these successes are sporadic and must be translated into worldwide action.[7]

The concept of 'One Health' is not new. It was highlighted by Virchow and Osler in the 19th century.[6] The deleterious efforts of the climate change demand effective application of 'One Health' approach to combat the rising number of emerging infectious diseases. In a 2006 article, WHO attributed 23% of global deaths to the environmental factors. While the 'One Health' approach is imperative, evidence of its effectiveness remains scarce.[5] Despite understanding the problem, there are multiple barriers impeding success including inadequate education, limited time, lack of funding and advocacy with inefficient governance.[8]

In my view, in any project where multiple stakeholders from diverse disciplines exist, integration of curriculum and collaborative quality learning is a very uphill task. Also, the success of 'One Health' depends on its standardized implementation, both at the local and global level - a Mount Everest to conquer. This challenge is compounded by resource constraints and varied governance at the global level which is not in sync.

Another critical issue, often overlooked due to economic interests, is the need to reduce greenhouse gases emissions to maintain the planetary health. While the 'one Health' approach is vital, breaking the link between the economic output and greenhouse emissions is even more crucial- But who is going to bell the cat? Money makes the mare go.[3]

The one health strategy is logical and appropriate to combat the rising menace of EIDs due to environmental change. But, its application is complex and arduous. Whatever the challenges may be the march to victory must go on. Definitely the path is uphill and long.

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