

Re-imagining healthcare – in partnership with nature

Nature, broadly, refers to the physical world around us and encompasses everything within it¹. It directly affects human life by influencing the availability of material and nutritional resources as well as the biodiversity of animals and plants². Civilisation is dependent on nature to survive and as our health needs change in response to the environment, so must our healthcare.

Healthcare provision across the world is subject to political and economic factors, particularly in developing countries, however the natural environment also has a large impact. This essay will first discuss how global environmental changes can influence healthcare and how services may adapt to these variations in the natural world. I will then move on to consider how nature affects healthcare on a smaller scale, with reference to its medicinal benefits and its presence within hospital settings. Lastly, I will discuss how altering the world around us using can prevent disease.

Adapting Healthcare to Climate Change

Climate change indicates a long-term shift in weather patterns across the world due to global warming³. The temperature of the Earth has increased by one degree Celsius since the 1800-1899 average⁴ leading to rising sea levels, frequent droughts and extreme weather events. This has affected the distribution of animal and plant species, and ultimately the epidemiology of several diseases. For example, higher temperatures have allowed an expansion of suitable habitats for the *Anopheles* mosquito, leading to a subsequent increase of Malaria in some parts of the world⁵.

Furthermore, flooding and high levels of rainfall may contribute to waterborne disease outbreaks as well as increased transmission of rodent-borne diseases⁶. Consequently, the World Health Organisation (WHO) has identified climate change as an important problem to address and as these changes to the global environment are likely to worsen, healthcare systems must be able to adapt and respond quickly⁷.

Healthcare infrastructure needs to be supported in order to cope with sudden changes to the environment, particularly in low-resource settings. Researchers in Canada⁸ have developed a “toolkit” which may enable countries to be more prepared for the health impacts of climate change and similarly, the WHO has developed an “Operational framework for building climate resilient health systems” to encourage stronger healthcare responses⁹. Both frameworks support the creation of emergency contingency plans, improved education about climate change as well as ensuring capacity for emergency surges of patients during outbreaks. This shows how the natural world is influencing health policy worldwide and should be included as a factor when making decisions about national and international healthcare. Unfortunately, there may be little scope to implement these procedures in developing countries as their health infrastructure is already weak and economic or political factors often govern health systems. Nonetheless, the Ebola outbreak of 2014 showed that emergency plans are needed in all countries and the world must work together for the benefit of all human health¹⁰.

Nature’s Remedy

Nature has played a key role in medical treatment for hundreds of years. Historical evidence shows that ancient civilisations turned to nature for remedies and medicines against diseases, of which many are still in use today¹¹. It must be to the benefit of all to continue using our natural remedy sources as many are cost-effective and are easy to deliver to patients¹². As the NHS continues to struggle financially it may be necessary, if not essential, to utilise the natural remedies used by our ancestors as a solution to modern day economic problems as well as the evolving reliance on expensive, manufactured drugs.

Herbal remedies and alternative medicines are important to many patients across the world. Although some do not hold scientific evidence behind their curative claims, many are useful in situations where other treatments have failed and they also play a significant role within cultural health beliefs. As globalisation and the movement of people increases, it is important that the NHS becomes more sensitive and more flexible to the natural remedies used by patients around the world. However, a major disadvantage of this more relaxed approach is that patients may start to choose natural remedies over evidence-based medicine and health professionals must remain vigilant in monitoring patients’ health

outcomes. A great illustration of this can be found in “The Spirit Catches You and You Fall Down” by Anne Fadiman¹³, which describes the collision of alternative remedies and modern-day healthcare. In this case, the inability of the doctors to respect the natural treatments preferred by the family results in extreme disharmony in the doctor-patient relationship and ultimately, fatal consequences.

Furthermore, the novel development of genetically modified organisms has changed the concept of ‘natural’ products. Several pharmaceutical products, such as insulin and human growth hormone, have already been developed using genetic engineering and the technology could therefore be used to develop new medicines or to alter the side effect profile of existing drugs¹⁴. Additionally, the genetic engineering of plants and food sources could be an effective solution to the malnutrition issues faced in low-resource settings¹⁵. These are good illustrations of how we can modify or adapt the natural world in order to improve human health. There are, however, many ethical issues surrounding the use of genetically modified organisms and the long term effects are still under investigation, but nevertheless it is an interesting prospect and may provide solutions to current health problems.

The introduction of the natural world into hospital and healthcare settings may also have therapeutic benefits of a different sort. A report by the British Medical Association showed that the wellbeing of inpatients is influenced by their physical environment and hospital gardens can be used to reduce stress and improve health outcomes¹⁶. This could be especially helpful in settings such as mental health hospitals, where a calming environment could increase cooperation with staff and adherence to treatment. Alternatively, they may be beneficial in children’s wards, allowing those who are very unwell to have contact with nature without leaving the hospital. However, building gardens and outdoor spaces within hospital grounds can be very expensive and they require regular maintenance from gardening staff. Thus far, little research has been done to determine the cost-effectiveness of these environmental changes on patient outcomes, compared to drug or activity-based therapies.

Using Nature to Prevent Disease

The natural environment can also aid the prevention of disease. A good example of this idea is the built environment concept proposed by Rundle et al¹⁷ whereby towns and cities can be designed in a specific way to increase physical activity, promote the consumption of healthy foods and prevent disease. The Faculty of Public Health in the UK reports that the built environment can improve health in all socio-economic classes and improving the aesthetics and safety of the natural environment can also bring economic, social and environmental benefits to a community¹⁸.

On the other hand, a paper by the Glasgow Centre for Population Health¹⁹ reviewed the possible impact of the built environment theory in Scotland. The authors note that while there are many environmental determinants of health and wellbeing, the evidence base for such interventions is lacking and what may work in one community, may be ineffective in another. Moreover, there are many overlapping factors that contribute to disease progression within a population so measuring the specific impact of environmental changes may be difficult.

Conclusion

The natural world has a significant role in healthcare on a global scale, with respect to climate change and global warming, but also on an individual level with the use of herbal remedies and natural treatments. This essay has explored the positive and negative influences of nature on human health and how the natural world could be used alongside current methods to improve healthcare in the future. In order for some of the examples in this essay to be developed and implemented, there needs to be a more flexible relationship between nature and healthcare, both for the benefit of patients and also national health systems. I hope that in a world dominated by technology, politics and economics, we do not lose touch with nature nor forget the benefits it provides to our health.

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