


Chapter 18

Environmental Governance for Promoting Dental Public Health

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ABSTRACT

Environmental change has a profound effect on the physical environment as well as all elements of natural and human systems. This includes social and economic conditions, as well as the functioning of health systems. Climate change poses an additional risk to the environment, since it leads to more frequent and severe storms, floods, high temperatures, droughts, and wildfires. This chapter examines the importance and role of environmental governance in promoting oral public health. The discussion will centre around the multiple determinants that affect dental public health, encompassing the importance of fluoridation, the consequences of air and water pollution, the accessibility of uncontaminated water, sustainable approaches in dentistry, minimising sugar intake and advocating for nutritious diets, the availability of dental care (including healthcare facilities and workforce training), and the role of education and awareness. It is essential to include sustainability education into the curriculum of both undergraduate and postgraduate students.

DOI: 10.4018/979-8-3693-7001-8.ch018

1. INTRODUCTION

The widespread deterioration of the environment presents a basic peril to human well-being. Environmental change impacts the physical environment and all aspects of natural and human systems, encompassing social and economic situations and the operation of health systems. The state of the environment is further threatened by climate change, with more frequent and intensifying storms, floods, extreme temperatures, droughts, and wildfires. From 2030 to 2050, it is projected that climate change-induced environmental deterioration will lead to an estimated annual increase of 250,000 deaths due to under nutrition, malaria, diarrhea, and heat stress alone. The estimated direct health damage costs, excluding costs in areas such as agriculture and water and sanitation, are projected to range between US\$ 2 and 4 billion years by 2030. The Global Burden of Disease (GBD) research has demonstrated that the occurrence of common oral disorders continues to be a substantial global health concern (Bernabe et al., 2020), impacting around 3.5 billion individuals globally (WHO, 2022).

Dental public health is an essential aspect of general public health, with a primary emphasis on preventing and managing dental problems and advocating for oral health. The primary objective of oral health professionals is to advance universal oral health by addressing preventable and/or treatable diseases, as outlined in the FDI Vision 2030 statement, which emphasises the need for immediate action in this area. The delivery of oral health care, whether through preventive measures, therapeutic interventions, or ongoing maintenance, generates pollution and contributes to a substantial carbon footprint. For instance, the National Health Service (NHS) in England generates 22.8 million tonnes of carbon equivalent emissions, which accounts for 3% of the total carbon footprint of the entire country (846 million tonnes). In comparison, the similar health care services in the United States and Australia contribute 10% (Booth, 2022) and 7% (Malik, et al., 2021) to their respective countries' carbon footprints. The health of individuals is being impacted by air pollution, with 10% of air pollution emissions being attributed to the health care sector and the utilisation of substances such as nitrogen oxide and sulphur dioxide (Duane and Fennell, 2023). Furthermore, it should be noted that there is a substantial amount of energy released as a result of patients travelling to get dental services. In the field of dentistry, it was discovered that staff travel for work and commuting to work accounted for the highest amount of carbon emissions (33.4%) in dental services throughout England in the period from 2013 to 2014 (Duane and Fennell, 2023). This was followed by patient travel to dental practices (31.1%), procurement (19.0%), electricity and gas consumption (15.3%), release of nitrous oxide (0.9%), waste management (0.2%), and water usage (0.1%) (Duane and Fennell, 2023) (Steinbach et al., 2018).

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