SUSTAINABILITY IN DENTISTRY: A NECESSARY PATH

Sustainability is no longer merely a global trend but a pressing necessity in all sectors, including dentistry. Since 2015, when the United Nations (UN) established the 17 Sustainable Development Goals (SDGs), healthcare professionals have been encouraged to rethink their practices, pursuing not only clinical excellence but also environmental and social responsibility.

In Dentistry, the pursuit of high-quality care is traditionally guided by Evidence-Based Dentistry (EBD), which values research, training and the active participation of patients in the treatment decision-making process. However, it is increasingly recognized that the efficiency and effectiveness of services can no longer be assessed without considering the environmental impact of our actions and the rational use of natural resources.

Every year, dental offices and clinics generate large amounts of waste, including gloves, masks, suction tips, sterilization packaging, needles, impression materials, as well as chemicals and heavy metals resulting from radiographic processing. Improper disposal of these materials poses risks to soil, water, and public health. In addition, is the high consumption of water and energy, driven by the operation of autoclaves, the need for air-conditioning systems, and high-technology equipment and the use of some high-tech equipment. These factors underscore the urgency of adopting a sustainable approach to Dentistry.

Fortunately, the debate surrounding sustainability in Dentistry has gained momentum. Digital technologies, such as electronic dental records and digital radiography, already contribute to reducing physical waste. Contemporary restorative protocols that prioritize composite resins over amalgam help prevent mercury contamination. Selective waste collection, proper segregation of infectious materials, the use of biodegradable products, and educational programs for professionals and patients are initiatives that should be further expanded and strengthened.

The experience of the Brazilian Navy, particularly that of the Central Navy Dental Clinic (Odontoclínica Central da Marinha, OCM), serves as an inspiring example. The institution has promoted cultural change and the implementation of sustainable practices, aligning dentists and patients with the principles of *Green Dentistry*. Actions such as selective waste collection, encouraging conscious energy use, and reducing disposable materials demonstrate that it is possible to transform dental routines while improving the quality of care provided.

As a Science and Technology Institution (STI), OCM develops research and innovation projects aimed at promoting oral health and preventing diseases among military personnel and other patients. These initiatives seek to improve self-care practices without losing sight of the importance of environmental responsibility. The projects also incorporate the perspective of economic sustainability, focusing on low-cost, reproducible, and accessible solutions that can be adopted on a large scale in public and military services.

The projects developed by the OCM are aligned with the targets established in the United Nations (UN) Sustainable Development Goals (SDGs) for 2030, which involve health, well-being, innovation and responsible consumption. Thus, the institution reaffirms its role in integrating innovative and sustainable practices into Dentistry. This integration contributes not only to the reduction of direct environmental impact, but also to the fostering an institutional culture committed to environmental preservation and efficiency in the use of public resources.

Among the results of these projects are products and devices aimed at oral hygiene and personal protection, designed with biodegradable materials and reuse potential. They are simplified and low-cost versions of devices already proven by use, expanding access and promoting conscious consumption, without compromising the effectiveness and safety of dental care. These actions reinforce the principle of the triple bottom line of sustainability (environmental, social, and economic), demonstrating that innovation and environmental responsibility can progress synergistically.

The OCM also develops AI-based projects focused on diagnostic support and oral health monitoring, with the objective of expanding access in remote areas and optimizing the use of resources. In addition to contributing to the reduction of the burden on the Navy Health System (SSM), the initiative enables the generation of georeferenced and real-time clinical data, facilitating health management more agile, accurate and evidence-based.

The challenge is clear: sustainability must be incorporated as an essential criterion in the evaluation of dental services. More than an ethical obligation, it is a commitment to the future of health and the planet. It is up to each professional, manager and patient to assume their role in this transformation. Only integrated actions—involving innovation, environmental education, responsible resource management and collective engagement—will ensure a truly sustainable Dentistry committed to the future generations.

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