

The Impact of Dentistry on Global Health: Challenges and Research Priorities

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Abstract

Even though oral health has improved worldwide, there are still many obstacles to overcome, especially in high-income and low-income countries' underprivileged groups. For many people, having access to basic dental healthcare is still an asset rather than a right. The July 2019 release of the oral health issue in *The Lancet* sparked a buzz and raised awareness of dental services and oral health issues. To close the gap connecting dental studies and health worldwide and to make oral health a top concern in public health discourse globally, there is still more work to be done.

Based on Shiffman's approach, we propose the creation of an international oral health network to promote systemic improvements and impact health policy. Four major areas of challenge—problem means, position, alliance building, and governance—have emerged from our experience in the field of global health. We provide these challenges to include stakeholders, in addition to seeking external validation.

How well our profession handles these issues will influence our success concerning the Sustainable Development Goals and beyond.

Keywords: *Dentistry, global health, challenges, priorities, research.*

INTRODUCTION

The global health systems face mounting challenges due to the proliferation of non-communicable illnesses, a growing elderly population, and rising healthcare expenses linked to technological progress. One of the main goals of the Sustainable Development Goals, also known as the SDGs, is to address common risk factors. Results from the worldwide Prevalence of Disease (GBD) research show that there are differences in the burden of neglected cavities, severe periodontal disease, and complete tooth loss depending on the economic setting, highlighting untreated oral disorders as a major worldwide health concern [1-6].

The GBD study offers vital information that helps decision-makers see oral health problems as significant public health issues with significant economic ramifications, highlighting the necessity of including oral health in global health agendas [7, 8].

In light of this, dental research and the profession of dentistry are essential to world health. To eradicate health disparities and create medical care staff members and systems that can meet these global issues, global health requires overcoming barriers associated with fields, borders, and norms of culture. To address the high incidence of oral health issues and the discrepancies in the availability of dental treatment the dentistry sector plays a critical role. Furthermore, it is critical to integrate with the broad objectives of global health

programs and train workers and healthcare systems to respond to possible future global health hazards in the most efficient way possible [9-14].

Challenges in Global Oral Health

Providing that oral wellness is acknowledged as a crucial public health concern globally would need significant efforts to close the gap between dental studies and global health. To impact health policy and promote systemic change, we propose the creation of a worldwide oral health network. These networks are crucial for influencing the perception of problems and potential solutions as well as for lobbying authorities and international organizations [15-18].

Strategic obstacles identified by Shiffman (2017, 2018) for global health networks, particularly in the context of oral health [19-22] (**Table 1**).

In light of the goals of the Sustainable Development Goals addressing these four issues is essential to the success of our profession (SDGs). The SDG 3 objectives do not specifically address oral health; however, it is linked to several noncommunicable disease-related health effects and risk factors. To successfully achieve these objectives, dental specialists are crucial, especially when it comes to treating typical risk factors [23-26].

Furthermore, programs like water fluoridation can improve dental health and help achieve targets for clean water and inequality reduction. It takes intersectoral coordination to deal with the varied root causes of health disparities in society, like access to care and economic considerations, in order to make advancements in oral health. Together, we may significantly influence public

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Table 1: Strategic obstacles identified by Shiffman (2017, 2018).

Obstacle	Description
1. Understanding the Problem's Nature and Solutions	The dentistry community struggles to clearly articulate the significance of oral health and its solutions. Recognizing the social and economic factors influencing oral health disparities is crucial.
2. Framing the Problem to Motivate Action	Traditional dental measurements (e.g. DMFT) are often inadequate for engaging broader public health discourse. The financial burden of oral diseases is comparable to major medical conditions, according to the GBD study.
3. Creating Coalitions with Diverse Stakeholders	Many dental organizations operate in isolation, lacking collaboration with non-health sectors. Effective coalition-building can integrate oral health into significant global health initiatives.
4. Establishing Structures for Collective Action	A leadership framework is needed that ensures equal involvement from all stakeholders. The absence of recognized leaders in collaborative dental campaigns hinders comprehensive participation.

health campaigns and improve dental wellness on a worldwide basis [25-31].

Research Priorities to Strengthen Global Health Action for Oral Health Gaps in Knowledge and Research Priorities

Epidemiology and Health Information Systems for Surveillance of Oral Conditions

Consolidate Data Collection Methods

Pay more attention to person-level statistics than teeth or superficial measures (e.g. incidence, frequency, several decades lived with disability, disability-adjusted life years).

Conduct Population-Based Surveys

Gather and publish data on oral epidemiology for any age group, with a focus on countries with low or middle incomes that lack this kind of research.

Monitor Social Inequalities in Oral Health

Examine both the relative *versus* absolute social gaps in oral health, especially in situations involving income levels that are low or moderate.

Develop Robust Burden Estimation Methods

For more accurate burden estimation, develop techniques to translate established oral epidemiological indices into person-level estimates of untreated illnesses.

Evidence Collection, Harmonization, and Assessment for Equity in the Prevention and Treatment of Oral Conditions

Evaluate Risk Factors

Establish the appropriate contribution of risk parameters for the environment, economy, commerce, and behaviour on the prevalence of dental problems.

Identify Policies to Reduce Inequalities

Evaluate the health initiatives and approaches that can parallel address discrepancies in oral and health in general.

Impact Evaluation of Health Policies

To assess the effect of present or future health legislation on oral health outcomes, use a type of quasi methodologies.

Strategies to Deliver Essential Quality Oral Health Care Without Financial Hardship

Revise Dental Curricula

Incorporate viewpoints on the social and economic variables that contribute to discrepancies in oral health into educational efforts.

Evaluate Oral Care Packages

Examine the effectiveness, commercial viability, and affordability of several dental care plans that promote disease prevention, low interventions in dentistry, and promoting optimal health.

Comprehensive Health Economic Approaches

Emphasize decisions about medical equipment and human resources by putting health and economic concepts into practice.

Plan for Human Resources and Health Care Services

Establish models of planning that match the distribution of healthcare funds and human resources to the present and projected needs for oral health care.

Research Priorities

Resolving a number of major understanding gaps, especially in three crucial areas of oral wellness activity, is necessary for the formation of a global health share for oral wellness.

Gaps in Global Oral Epidemiology and Health Information Systems

The following steps have significance to guarantee that timely, pertinent, and recent data is made accessible for analysis and policymaking:

Enhance Community Oral Health Studies

Citizen research and observation, both continual and enhanced, are essential.

Reporting on data and establishing storage facilities strengthen data reporting procedures and establish a centralized information system to make it easier to find and distribute results from studies on dental hygiene. Access to pertinent data is impeded by the fact that many scientific publications do not provide study reports.

Framework for Interconnectedness

To improve the quality of the data accessible to the burden estimate, design an organizing structure that highlights the interconnection of oral health issues.

Strengthen WHO Oral Health Profiles

A methodical approach to data collection, assessment, and reporting should be used by the WHO Oral Health Country/Region Assessment Project.

Utilize Comprehensive Metrics

Determine the most advantageous and alternate tracking parameters so that everyone, not only those working in dentistry, may access and learn about them.

Collection, Harmonization, and Rigorous Assessment of Evidence

The following actions are required to tackle equality in both the avoidance and management of oral conditions:

Quantitative Analysis of Disease Drivers

It is essential to have quantitative knowledge of the social, economic, environmental, and behavioural elements that influence oral illness at the population level.

Diverse Research Designs

Even though the Global Burden of Disease (GBD) study has yielded instructive data, more research employing an assortment of study designs-such as application research and randomized controlled trials-is necessary to truly understand the efficacy of therapies to choose from.

Impact Evaluation of Policies

Appropriate approaches should be used in a formal evaluation of the effects of current government measures on oral health, such as sugar imposes and prohibitions on tobacco use.

Strategies for Delivering Essential Quality Oral Health Care

The following tactics have to be implemented to ensure that every person has access to necessary, excellent oral healthcare without undergoing financial hardship:

Revise Dental Education

Economic and social variables of health deserve to be included in dentistry curricula and teaching approaches.

Interprofessional Collaboration

To assist policymakers, address socioeconomic aspects of health, and form intersectoral and multidisciplinary teams.

Integration of Social Policies

Determine the best ways to incorporate societal guidelines into the healthcare system in order to raise the state of oral health.

Focus on Preventive Care

Stress how dental therapy should be integrated with primary healthcare, giving minimally invasive dentistry that focuses on prevention and detection early a priority.

Universal Health Coverage (UHC) Principles

Coordinate dental care services with UHC's two guiding principles, that serve to protect patients' budgets and offer necessary, high-quality healthcare.

Evaluate Basic Oral Care Packages

Make sure that the adoption of the WHO Essential Oral Health Packages is both profitable and lasting by using it as a basic model.

Sharing Best Practices

Exchange successful and negative research results from other nations to expand on past experiences. Model nations for nations are those that have included dental care in their basic health systems, such as Brazil and Thailand.

By tackling this lack of understanding and applying these techniques, we can increase global oral wellness and get rid of inequities in obtaining care.

CONCLUDING REMARKS

According to the Global Burden of Disease (GBD) report, oral health is still a major global public health concern and has not improved noticeably in the past decade. To improve oral health globally, more concentrated efforts and even alternative approaches are expected. The high expense of traditional dental care may account for the 3.5 billion cases of oral health issues needing to be treated globally, the omission of oral health from health conversations, and the shortage of dental care integration into universal healthcare coverage (UHC).

We propose to establish a worldwide health network focused on oral health to promote systemic change. Working together is required to solve the complexity

of developing a framework for oral health that is cost-effective, eliminating inequities, and integrating oral health into bigger health initiatives. To ensure inclusion from all societal segments, the World Health Organization (WHO) should take the lead in forging partnerships with appropriate groups and establishing an extensive worldwide network for oral health that includes both dental and non-dental specialists.

The successful completion of this project depends on involving effective external participants and multi-institutional dental groups like the World Dental Alliance and the International Association for Dental Research. The relationship has the potential to support and enhance the suggested research techniques. A decrease in the variety of dental cases that remained untreated should be a primary sign of the GBD's autonomous progress monitoring.

The evidence gathered must serve as the foundation for dental treatment and oral health proposals. To guarantee that timely and pertinent data is available for policy-making and analysis the health services should consistently improve the quality of oral health surveys and monitoring. Researchers investigating oral health must also conduct detailed reviews of data relevant to equity in the diagnosis, management, and treatment of oral disorders. Finally, to provide care for everybody, more ecologically friendly ways must be implemented.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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