ISSN: 2581-5989
PubMed - National Library of Medicine - ID: 101738774

International Journal of Dental Science and Innovative Research (IJDSIR)

IJDSIR : Dental Publication Service

Available Online at: www.ijdsir.com

Volume – 7, Issue – 2, April – 2024, Page No. : 64 - 71

Redefining Oral Health: A call for global action, Governance and equity – A Narrative Review

[1]Dhwani Rameshbhai Bhandari, B.D.S, Rajarshi Dental Care & Implant Center.

[2]Kavan Minesh Shah, BDS, Government Dental College and Hospital, Ahmedabad.

[3]Amar Kumar Shaw, MDS Public Health Dentistry, Goregaon Dental Centre.

[4]Naval Ghule, BDS, Goregaon Dental Centre.

Corresponding Author: Dhwani Rameshbhai Bhandari, B.D.S, Rajarshi Dental Care & Implant Center.

Citation of this Article: Dhwani Rameshbhai Bhandari, Kavan Minesh Shah, Amar Kumar Shaw, Naval Ghule, "Redefining Oral Health: A call for global action, Governance and equity – A Narrative Review, IJDSIR- April – 2024, Volume –7, Issue - 2, P. No. 64 – 71.

Type of Publication: Review Article

Conflicts of Interest: Nil

Abstract

Despite some improvements in the oral health of populations globally, major problems remain all over the planet, most notably among underprivileged communities of low- and middle-income countries but also in high-income countries. Furthermore, essential oral health care has been a privilege, instead of a right, for most individuals. Using the framework proposed by Shiffman, we argue that a global health network for oral health must be harnessed to influence global health policy and drive health system reform. We have identified challenges around 4 key areas (problem definition, positioning, coalition building, and governance) from our experience working in the global health arena and with collaborators in multidisciplinary teams.These challenges are outlined here to validate them externally but also to call the attention of interested players inside and outside dentistry. How well our profession addresses these challenges will shape our performance during the Sustainable Development Goals era and beyond. This analysis is followed by a discussion of fundamental gaps in knowledge, particularly in 3 areas of oral health action: 1) epidemiology and health information systems; 2) collection, harmonization, and rigorous assessment of evidence for prevention, equity, and treatment; and 3) optimal strategies for delivering essential quality care to all who need it without financial hardship.

Keywords: Global burden of disease, social determinants of health, healthcare disparities, universal health care, public health dentistry, dental care

Introduction

Oral diseases represent a major public health problem due to their high prevalence regionally and globally. According to a recent study on global burden of diseases, untreated dental caries was the most prevalent

condition among the 313 diseases assessed globally [1-3]. Oral diseases impose heavy financial burden not only in low-income countries, but also in high- and middle-income countries. According to World Health Organization, oral diseases are the fourth most expensive condition to treat, often surpassing the expenses for cancer, heart disease, stroke and dementia treatments, and causing negative impact on individual's quality of life [4]. Fortunately, ample sound scientific evidence is available on effective preventive methods and promoting programs to prevent major oral diseases and maintaining good oral health at the individual and community levels.

Given that most oral diseases like other non-communicable diseases (NCDs) are behavioural related conditions, individuals are expected to play an active role for their own health improvement. To support a good oral health behaviour, in addition to providing sufficient oral self-care knowledge, proper access to enabling environment as well as preventive health system should be made available where people grow up, live and work. Unfortunately, in many countries the opportunities for community-based activities in oral health promotion are either limited or underutilized.

Recent scientific findings have brought better understanding on the important role of good oral health in overall health and even treatment of major NCDs. Chronic oral infection has close relation with diseaseslike atherosclerosis, heart diseases, respiratory diseases, malignancies and pregnancy complications such as premature births and low birth-weight [5-9]. It has also been well documented that diabetes and chronic kidney disease (CKD) have two-way relationship with untreated gum disease [10-12]. Without prevention and proper treatment (eradication of oral infections) both systemic conditions will further intensify the burden of oral diseases.

On the other hand, oral diseases share the same risk factors with major NCDs as described in Common Risk Factor Approach. Conditions such as cardiovascular diseases, chronic respiratory diseases, cancers and diabetes as well as obesity are like oral diseases: all affected by tobacco use, harmful use of alcohol, and unhealthy diet which are mostly preventable [13]. Successful prevention of oral diseases can reduce the burden of NCDs at the national, regional and global levels. Inter-professional collaboration can perfectly pave the way for controlling NCD's common risk factors and improving not only the oral health but promoting the overall health and well-being.

Oral health professionals including dentists, dental therapists, hygienists, and dental academics, together with other health professionals can play more effective role in controlling the burden of NCDs at the community level, as emphasized in UN Sustainable Development Goals (SDG17) [13]. Delegating prevention and essential primary oral health care to oral health auxiliaries and in some extend to community (or primary) health workers can successfully control oral diseases in dental facilities, schools and communities to improve and promote oral health effectively.

Challenges in Global Oral Health

We assert that a global health network for oral health must be harnessed to influence global health policy and drive health system reform. Global health networks do matter, especially to shape the way that challenges and solutions are understood and to advocate for governmentsand international agencies to address them [11].

The first challenge is to reach consensus on what the problem is and how it should be addressed [12]. Although the dental community agrees that oral health is integral to general health and essential for general well-

being and quality of life [8], it has not been able to articulate key definitions of the causes of and the solutions to those problems. There is a need to recognize the importance of the social and commercial determinants of health that act globally to generate oral health inequalities. There is a disjoint in terms of solutions too. While a few push for upstream action (taxation and fiscal policies) to address oral health inequalities [9], much research work and practice remain downstream, particularly focused on dental health education and complex biomedical interventions of questionable cost-effectiveness [9]. What is more, most dental care services around the world are delivered privately; thus, they are business oriented, with a wide disparity in available oral health resources between high- and low-/ middle-income countries.

The second challenge is to portray the issue in ways that inspire external audiences to act (positioning). This is a problem of external framing [7]. We must convey oral health issues in ways that resonate with external players whose resources are needed to address health problems. Traditional population dental metrics are not obvious beyond dentistry. Indices such as the DMFT are known for their limitations but continue to be used. By using comparable metrics such as years lived with disability, the GBD study provided evidence that the burden of dental diseases is comparable to the burden of all maternal conditions combined, hypertensive heart disease, anxiety disorders, and schizophrenia and greater than 25 of the 28 categories of cancer, cardiovascular and cerebrovascular diseases, and mental health other than depression [7]. However, not everybody in the dental field is familiar with these metrics or knows how to use them to advocate for the relevance of oral health.

The third challenge is to forge alliances with these external actors (coalition building), especially those outside the health sector [11]. Most dental organizations—such as the International Association for Dental Research, World Dental Federation, and World Health Organization (WHO) global oral health unit—work in isolation with little alignment in terms of policy direction. Important steps toward coalition building include the inclusion of oral health into the Political Declarations of the High-Level Meetings on the prevention and control of noncommunicable diseases and universal health coverage (UHC; i.e., access to essential quality health services without financial hardship) as well as the statement of the World Federation of Public Health Associations (2016) supporting the integration of oral health into primary health care and public health systems.

The fourth challenge is to establish institutions to facilitate collective action (governance). Depending on the kind of leadership agreed among members, global health networks could be shared (equal rights to all members), led (a single coordinator), and network administrative organizations (members represented by a board that makes the decisions). There are not generally accepted individual leaders in dentistry, and this fragmentation is a barrier to collective action. It is worth reiterating that such a global network should consist of dental and nondental members with good representation from all parts of society, including those influencing health priorities and resource allocation. A major challenge for wider engagement is inclusion. The main actors do not want to get out of the silos in which they are comfortable.

The presentations and discussions in oral health panel at the World Health Summit, Regional Meeting of 2019, deemed the followings items important enough for improving and maintaining good oral health. Therefore,

requesting kind attention of all health care providers and policy makers to the following points:

1. Oral diseases as a neglected NCD is currently considered a “silent epidemic”, putting heavy burden on general health, deserving special attention by all relevant constituents.
2. Oral health is a fundamental human right and it should be an integral part of Universal Health Coverage (UHC) within the global health agenda.
3. Oral health strategies should be included in all health policies.
4. To address essential oral health needs of a population through UHC, adequately trained oral health personnel with appropriate educational backgrounds should be available.
5. In order to address Sustainable Development Goals (SDGs), a proper oral health (SDG 3) for all social strata (SDG 10) [7], through well-organized oral health services including primary health care (PHC) is essential.
6. In line with Common Risk Factor Approach, preventing the consumption of high sugar intake of foods and drinks, tobacco use, and harmful use of alcohol are particularly recommended.
7. The health care professionals should encourage good oral health knowledge and practice for prevention of oral diseases. Therefore, oral health should be included in the training of all medical professional.
8. Considering the high prevalence of oral diseases in the Eastern-Mediterranean Region, the NCD departments should include and support oral health strategies with high priority.
9. The 21 countries in the Eastern-Mediterranean Region would highly benefit, if a regional oral health advisor is appointed at the regional office (EMRO).
10. Innovative oral public health research should be supported equally if not more than clinical research, with more priority and sufficient resources by the Ministries of Health, dental schools and research institutions.

Research Priorities

The development of a global health network for oral health requires addressing some fundamental gaps in knowledge, particularly in 3 areas of oral health action. The first gap in knowledge is in global oral epidemiology and health information systems. Continuation and improvement of community oral health surveys and surveillance are crucial to ensure that timely, relevant, and current data are available for compilation and analyses.

Concurrently, it is crucial to improve reporting of data and develop a database repository to facilitate the identification of oral health survey reports. Most scientific journals do not publish survey reports; thus, it is difficult to find this relevant information. Furthermore, we need to develop an analytic framework that leverages the interconnectedness of oral conditions to improve the degree to which incomplete data can generate actionable estimates of oral health burden worldwide.

The WHO Oral Health Country/Area Profile Project must be improved and follow a systematic approach for selection, appraisal, and reporting of data sources. The GBD study offers a systematic and comprehensive approach to data management, leading the way on oral health burden estimation, but it is not without criticism. The GBD study needs primary data of good quality to calculate health estimates. Addressing this gap should start by developing an appropriate global health information system to serve evidence-based planning and monitoring.

Also, we need to transparently delineate ideal and "alternate" reporting metrics, with reporting methods that everybody—not only dentists and dental researchers—can understand, readily put into practice, and describe to others. The result would be a data repository to provide researchers and policy makers the evidence needed for planning, implementation, and evaluation of oral health policies and dental health care.

The second gap in knowledge relates to the collection, harmonization, and rigorous assessment of evidence for equity in prevention and treatment. A quantitative understanding of the drivers of disease at the population level is needed, including the role of social and commercial determinants of health; environmental, metabolic, and behavioural risk factors; and the effectiveness of interventions for prevention and treatment.

The GBD study has quantified the connection between many risk factors and diseases, but research based on other study designs is also required. Randomized controlled trials (RCTs) have been criticized for evaluation of health promotion and policy. While RCTs or quasi-experimental designs are recommended to ascertain determinants of health and test the effectiveness of policy- or population-level interventions, attention must also be paid to the difficulties of implementing an effective intervention in the real world. Optimal adherence to an intervention is a key determinant of its success. Research designs that permit assessment of health promotion interventions in their natural settings for longer periods provide evidence of effectiveness as important as evidence from RCTs. Implementation research has the potential of identifying barriers and solutions to the successful adoption of an intervention. Finally, many countries have now implementedsugar and tobacco taxes, smoking bans, and food labelling. Formal impact assessments on oral health must be completed through appropriate research methods.

The third gap in knowledge relates to optimal strategies for delivering essential quality oral health care to all who need it (3.5 billion people) without imposing personal and public financial hardship. This includes but is not limited to the following:

1) Revisiting dental curricula and educational methods,

2) Building interprofessional and intersectoral teams to develop competency frameworks that help policy makers tackle the social and commercial determinants of health at all levels,

3) Identifying strategies to incorporate social policies into health systems, and

4) Evaluating the impacts of these changes on population oral health.

To achieve this goal, dental care should be integrated into primary health care with a focus on minimal intervention dentistry, which is a groundbreaking biological medical approach focusing on the prevention and interception of the disease at an early stage and on health promotion. Universal coverage for oral health care based on conventional dental care (surgical) may be too expensive to tackle the current 3.5 billion cases of untreated dental conditions.

The 2 principles of UHC must be resolved if oral health care is to be adopted as part of UHC initiatives. The WHO Basic Package of Oral Care—which includes oral urgent treatment, affordable fluoride toothpaste, and a traumatic restorative treatment—is a good starting point, especially at the level of primary health care However, evidence of its successful implementation, sustainability, and scaling up is lacking.

The role of delegating tasks (optimal skill mix) for the delivery of such packages deserves attention. This

package could be expanded to include a range of cost-effective minimally invasive interventions. This approach is in line with the WHO's best-buys approach wherein population interventions are ranked and recommended per their level of evidence and cost-effectiveness. Solid evidence on economic evaluation and implementation success of oral health care packages addresses the first principle of UHC. The second UHC principle (financial protection) can be measured by using standard indicators such as catastrophic health expenditure and impoverishment, as demonstrated elsewhere.

In addition, the modelling of oral health investment cases, as recently demonstrated in Burkina Faso, can help identify programs that provide good value for money, with the required type, mix, and quantity of dental workforce. Successful and unsuccessful findings should be shared openly so that we can build up on experience. Countries such as Thailand and Brazil have been praised for achieving UHC, including essential dental care within primary care networksand they provide a good model for organization and delivery.

Conclusion

The GBD study showed that oral health has not significantly improved over the last 3 decades throughout the world and remains a major global public health challenge. Clearly, greater efforts and potentially different approaches are needed to promote global oral health. Conventional dental care is characterized by high cost, which may explain why there are 3.5 billion cases of oral conditions worldwide needing attention, why oral health has been neglected, and why dental care has not been included in UHC.

We argue that a global health network for oral health must be harnessed to drive health system reform. The complexity of developing a new cost-effective oral health system, reducing oral health inequities, and integrating oral health into the health agenda requires a broader participation.

The WHO may lead the way forward, build coalitions with relevant external actors, and create an inclusive and unifying global oral health network consisting of dental and nondental members with good representation from all parts of society to reach consensus on how to address the problem. The inclusion of multi-institutional dental health organizations, such as the International Association for Dental Research, World Dental Federation, and influential external actors in dentistry, is crucial for this effort to be successful. Such a network can approve and update (if needed) the research strategies proposed here. The GBD should independently monitor progress. The major indicator of success would be a reduction of the number of cases of untreated dental conditions.

Oral health policies and dental care should be solidly based on scientific evidence. Health services must continue carrying out and improving the quality of oral health surveys and surveillance to ensure that timely, relevant, and current data are available for compilation and analyses. Oral health researchers must carry out rigorous assessment of evidence for equity in prevention and management of oral conditions. Finally, oral health care needs to move toward more cost-effective approaches to deliver care to all.

References

1. Kassebaum NJ, Smith AGC, Bernabé E, Fleming TD, Reynolds AE, Vos T, et al. GBD 2015 Oral Health Collaborators. Global, Regional, and National Prevalence, Incidence, and Disability-Adjusted Life Years for Oral Conditions for 195 Countries, 1990-2015: A Systematic Analysis for the

Global Burden of Diseases, Injuries, and Risk Factors. J Dent Res. 2017;96:380-7.

2. Peres MA, Macpherson LMD, Weyant RJ, Daly B, Venturelli R, Mathur MR, et al. Oral diseases: a global public health challenge. Lancet. 2019;394:249-60.
3. GBD 2016 Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet. 2017;390:1211-59.
4. Petersen PE. The World Oral Health report 2003: continuous improvement of oral health in the 21st century—the approach of the WHO Global Oral Health Programme. Community Dent Oral Epidemiol. 2003;31:3-23.
5. Sabharwal A, Gomes-Filho IS, Stellrecht E, Scannapieco FA. Role of periodontal therapy in management of common complex systemic diseases and conditions: An update. Periodontol 2000. 2018;78:212-26.
6. Bains R, Bains VK. Lesions of endodontic origin: An emerging risk factor for coronary heart diseases. Indian Heart J. 2018;70:431-4.
7. Gaur S, Agnihotri R. Alzheimer's disease and chronic periodontitis: is there an association? GeriatrGerontol Int. 2015;15:391- 404.
8. Offenbacher S, Barros SP, Altarawneh S, Beck JD, Loewy ZG. Impact of tooth loss on oral and systemic health. Gen Dent. 2012;60:494-500.
9. Turton M, Africa CWJ. Further evidence for periodontal disease as a risk indicator for adverse pregnancy outcomes. Int Dent J. 2017;67:148-56.
10. Nascimento GG, Leite FRM, Vestergaard P, Scheutz F, López R. Does diabetes increase the risk of periodontitis? A systematic review and meta-regression analysis of longitudinal prospective studies. Acta Diabetol. 2018;55:653-67.
11. Kapellas K, Singh A, Bertotti M, Nascimento GG, Jamieson LM; Perio-CKD collaboration. Periodontal and chronic kidney disease association: A systematic review and meta-analysis. Nephrology (Carlton). 2019;24:202-12.
12. Deschamps-Lenhardt S, Martin-Cabezas R, Hannedouche T, Huck O. Association between periodontitis and chronic kidney disease: Systematic review and meta-analysis. Oral Dis. 2019;25:385-402.
13. World Health Organization. Guideline: Sugars intake for adults and children. Geneva: WHO; 2015.
14. Lempert SM, Froberg K, Christensen LB, Kristensen PL, Heitmann BL. Association between body mass index and caries among children and adolescents. Community Dent Oral Epidemiol. 2014;42:53-60.
15. Chapple IL, Bouchard P, Cagetti MG, Campus B, Carra MC, Cocco F, et al. Interaction of lifestyle, behaviour or systemic diseases with dental caries and periodontal diseases: consensus report of group 2 of the joint EFP/ORCA workshop on the boundaries between caries and periodontal diseases. J Clin Periodontol. 2017;18:39-51.
16. Sheiham A, Watt RG. The common risk factor approach: a rational basis for promoting oral health. Community Dent Oral Epidemiol. 2000;28:399-406.
17. Petersen PE, Ogawa H. Promoting Oral Health and Quality of Life of Older People - The Need for Public Health Action. Oral Health Prev Dent. 2018;16:113-24.

18. United Nations Sustainable Development Goals.
Available: https://sustainabledevelopment.un.org/.
Accessed: 19 January 2020.