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Implementation of an Oral Healthcare system in low- and middle-income countries to tackle Oral diseases among the community

Purpose and Background

This report is directed towards the Ministry of Health, Ministry of Education, Dental associations, and all other institutions involved in oral care, I am presenting this report aiming towards suggesting solutions for the oral healthcare challenges that we, as a whole community, are facing whether it is health related or economy related. This report will address the oral health epidemic related topics including, current situation, challenges, and suggestions to tackle this problem in a multi-disciplinary way. Oral health is defined, by latest World Dental Federation FDI definition, as “Oral health is multifaceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow, and convey a range of emotions through facial expressions with confidence and without pain, discomfort, and disease of the craniofacial complex”.(1) So the loss of any of these abilities means the presence of an oral health problem. Although oral diseases are preventable conditions, they are still considered to be of the most common non-communicable diseases in the whole world. According to the Global Burden of Disease 2015, almost half of the world population are affected by oral diseases.(2) Oral diseases such as dental caries and periodontal diseases are considered to be the most common conditions affecting thirty five and ten percentage of the world population, respectively.(2) Oral cancer is also among the top twenty most common cancers in the world.(3) Dental caries, periodontal disease, and cancers of the lips and oral cavity are considered to be the most prevalent oral diseases globally.(4)

“Oral health refers to the health of our mouth and, ultimately, supports and reflects the health of the entire body”(5)

The current situation

It also has serious health issues along with economic burdens and affecting the quality of life greatly.(4) Despite the fact that oral diseases are largely preventable, there is still a very high percentage of the populations that are suffering from this epidemic reflecting social and economic inequalities along with insufficient prevention and treatment especially in low and middle income countries. Oral conditions are chronic and strongly socially patterned.(4)

Children living in poverty, socially marginalized groups, and older people are the most affected by oral diseases and have poor access to dental care.(6) As the case with most non-communicable diseases, oral conditions are chronic and strongly socially patterned so that is why children who live in poverty, socially marginalized and older people are all the most affected by these conditions. (6)This can lead to many health issues including unremitting pain, sepsis, reduced quality of life, lost school days, disruption to family life, and decreased work productivity.(6) It also has economic sequences that includes high treatment costs, and it is particularly affecting low- and middle-income countries much more than others.(6)

Oral diseases are considered among non-communicable diseases and have some shared common risk factors with other NCDs such as cardiovascular, cancer, diabetes, and chronic respiratory diseases.(6) So a common risk factor approach is needed to tackle oral diseases along with the other NCDs since they share major risk factors and commercial, moral and social determinants of health so it is preferred to tackle these shared risk factors among all diseases.(6) Oral health is an integral part of overall wellbeing since it shares risk factors such as tobacco use, alcohol intake, unhealthy diet consumption and physical inactivity as well.(6) Since oral diseases are considered largely preventable, it is essential to remove the cause of these diseases not just treatment and that requires tackling across all platforms including social, environmental, and economic determinants of health. That can be done through a multi-sectoral approach within policies and strategies adopted by the government for sustainable development. (6)

“Recent research has indicated possible associations between chronic oral infections and diabetes, heart and lung disease, stroke, and low birthweight or premature births.”(5)

Pertaining to figure 1 which shows the determinants of oral health and their effect on the status of oral health for the community.(7) We can clearly see how would respect, rights, opportunities, resources availability, social inclusion, and welfare have a positive effect on the macroeconomic, socioeconomic, and casual factors and how upstream intervention that is led by the government and all of the related agencies would result in a better overall oral health for the community.(7) On the other side, it also shows that disabling components such as lack of opportunities, adverse events in childhood, discrimination, social exclusion, low self-esteem, violence would negatively affect the macroeconomic, socioeconomic, and casual factors and hence result in bad oral health for the community. (7)

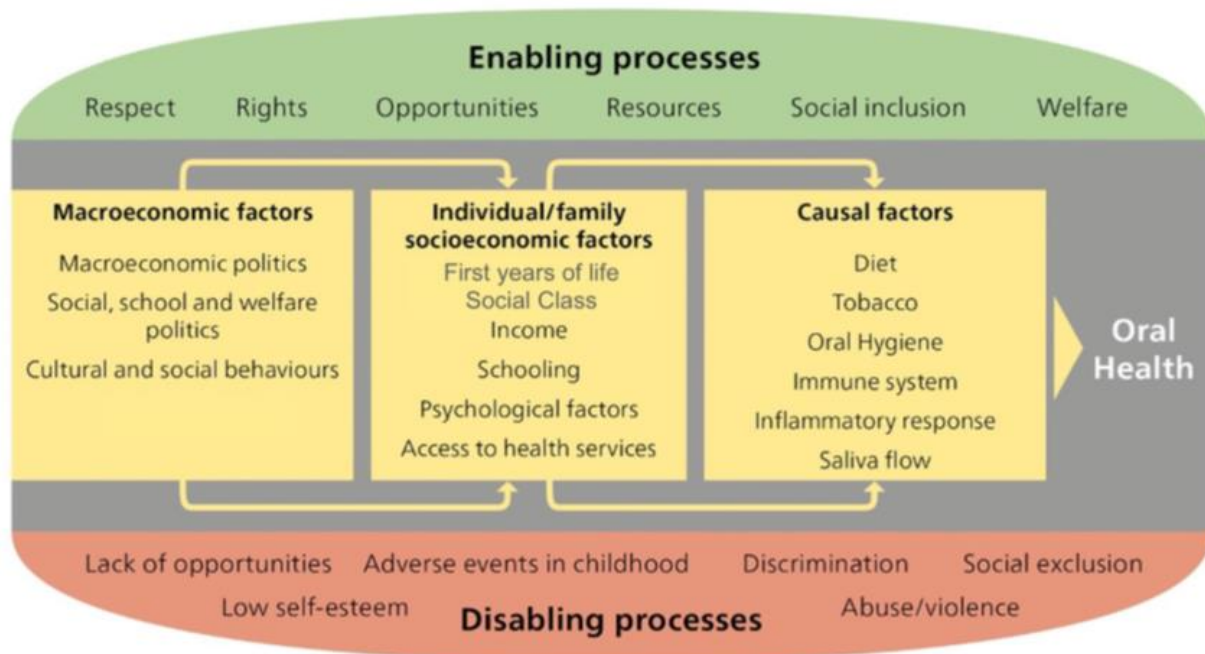


FIGURE 1 | Oral health determinants.(7)

Recommended action

Although there are multiple social determinants governing the status of oral health for the community but the most effective way for improving the oral health level in the communities especially in low- and middle-income countries, is tackling it directly which means tackling the factors that directly affect oral health such as supervised teeth brushing activities, amount and type of dietary intake, and oral health education.(8) Implementation of an intervention that focuses of all these components at once has been found to be the most effective intervention to reduce oral diseases among schoolchildren in particular.(8) Which is the key for improving the overall oral health for the community starting from schoolchildren building up a whole generation that share the same healthy habits and dietary intake. That can be done through working on the multiple levels that are involved; starting from the Ministry of Education through developing an oral health education based curriculum, Ministry of Health through oral diseases prevention programs, Dental associations through providing ,in coordination with the MOH, oral diseases prevention training programs for; dentists to be part of the primary healthcare system in the country, all of the other agencies interested in oral health, along with schools, principals, teachers, parents and children. The governmental, non-governmental agencies involved in oral health will be helping in the adoption of such interventions and spreading it on a national wider level, along with implementing supervised oral health activities coupled with oral health education for healthcare workers, principals, teachers, parents, and children which includes teaching them about dietary intake and how does it affect oral health in addition to the most important component which is teaching them the proper toothbrushing

technique with a fluoridated toothpaste. Adding fluoride to drinking water would also be one of the steps involved in the oral health prevention program. (8) A review of studies based on different interventions done in the period 1996-2014 found that oral health education alone was not effective in reducing oral diseases, while when combined with supervised toothbrushing with fluoridated toothpaste, it proved to be more effective in the reduction of oral diseases. It also found that when both approaches are combined with professional preventive dental care, to be the most effective intervention in reducing oral diseases among the community.(8)

In conclusion, oral diseases are among the most prevalent diseases in the whole world, and it affects all communities with no exception but It has a much greater effect and burden on low and middle income countries. So, prevention remains to be the first option to deal with such highly preventable diseases that would improve the overall health status of individuals and is much more cost effective for the population and the government as well. Tackling all of the social determinants of health would still be the long-term choice to target multiple diseases that are affected by the same factors, but the most effective and short-term choice is tackling the primary reasons behind these conditions so an intervention that includes supervised teeth brushing activities with fluoride toothpaste along with professional preventive dental care would be the quickest way towards lowering oral diseases prevalence among the community.

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