Dentistry for the Underprivileged

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Abstract

The purpose of an oral health care system is to influence the population's way of life so that oral health is promoted and maintained, and oral diseases prevented; and to provide adequate treatment to those members of the population affected by oral diseases so that disease is arrested at an early stage and loss of function prevented. Those two functions in the Primary Health Care (PHC) apply, no matter whether the service is in developing or developed countries. Using these functions as a basis, principles have been established to guide the development of oral health services or programmes and provide a framework for rational consideration of the role of governments, reducing inequalities, underdevelopment, partnerships, oral health promotion, preventive strategies, ethics, personnel preparation, rights of health workers and the scientific basis of oral health strategies.

Dental caries and periodontal disease determine the level of oral health status of a person. Unfortunately, both diseases are so common that essentially every adult has one or the other or both. Therefore, these two diseases can be considered as a real public health problem. In general every country has and should have its own system to prevent and cure its nation from disease according to its resources and culture. Dental health personnel should direct all efforts to invent and encourage the use of effective tools to prevent and control these two diseases effectively. The profession has fallen in an endless, exhausting and costly routine of restorative treatment which consumes too much time, resources, effort and money.

All preventive avenues need to be explored, in particular those that can be sustained within the society and culture of the country, for whichever route is taken in organizing oral health care it is clear that even where the state accepts responsibility for funding (and also in some cases providing) oral health services there will only be a commitment of funds if the procedures and programmes are effective and efficiently run. The problem is that any funds available for the health sector are likely to be small and for oral health care infinitesimal. We have to move away from the idea that oral health is something to be delivered. It is not, it is something to be achieved.

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Dentistry vs Oral Health

Dentistry is a profession. Its growth can be traced directly to the developing technology for the management of dental caries. A large part of the training provided for dentists has been concerned with the mechanical repair of the destruction caused to the hard tissues by dental caries. The approach to the treatment of dental caries has changed considerably. Extension for prevention and other principles of cavity preparation, proposed at the early part of the 20th century, is now giving way to the minimal tissue removal approach (1). Developments in prevention of dental caries and also new knowledge of how dental caries lesions develop and progress have meant that in many educational establishments the minimum intervention approach is being promoted.

Oral health is integral to general health and essential for well being. It implies being free from chronic oro-facial pain, oral and pharyngeal (throat) cancer, oral tissue lesions, birth defects such as cleft lip and palate and other diseases and disorders that affect oral health. Good oral health allows us to speak, smile, kiss, touch, smell, taste, chew, and swallow and to cry out in pain. Oral diseases restrict activities in school, at work and at home causing a lot of schoolwork hours to be lost each year. The psychosocial impact of these diseases often diminishes quality of life (2).

Burden of Oral Diseases in Tanzania

Dental caries (tooth decay) and periodontal disease (gum diseases) have been the most important global oral health burdens. In Tanzania 80% of the population is affected by periodontal

(gum) diseases. There are also important links between oral health and general health. For example, gum disease is associated with general health conditions such as heart diseases and diabetes. Dental caries affects between 25-55% of the older population, while 30% of school children are affected. Of particular concern in Tanzania is that 90% of the caries in Tanzania remains untreated. There is also very high prevalence (90-95%) of endemic dental fluorosis (brown teeth) in regions with high fluoride levels in water (3).

Unlike caries and periodontal disease, reliable data on the frequency and severity of dental trauma are lacking in most countries. On the existing data on dental trauma it appears that the prevalence of traumatic dental injuries at the age of six years range 16-40%, where the prevalence in 12 years centre around 4-33%, (4). In Tanzania it ranges 21-25%, (5, 6). In contrast to dental caries where a significant decrease in caries activity has been found, the opposite is found in regard to dental trauma (7). Besides dental caries and periodontal diseases, oral cancer is the 11th most common cancer with a 5-year survival rate of less than 50%. Maxillo-facial trauma has increased as a result of inter-personal violence and motor accidents. Oral lesions are the first signs of life threatening diseases such as HIV/AIDS.

Harmful practices such as removal of tooth germs (Nylon Teeth Myth), extraction of upper and lower anterior teeth and trimming and sharpening of upper anterior teeth continue to occur. Congenital abnormalities, and total tooth loss (edentulism) are also important oral public health problems in Tanzania (3).

Oral Health Care for the Underpriviled

In many African countries, access to oral health services is limited and carious teeth are often left untreated or extracted to relive pain or discomfort. Losing teeth is still seen by many as a natural consequences of aging. As disease levels have improved, those most vulnerable in society are carrying the burden of disease and the gap between the oral health of the rich and poor is widened. In Tanzania oral health services are part of the overall services being offered by the government in public institutions and also at private for profit and non profit institutions. What should be done in relation to the underprivilaged?

Dental caries continues to be a major public health problem, it is the source of considerable pain and suffering for many, especially amongst the poor and the deprived and its management represents proportion of the health budgets wordwide. Efforts to prevent caries must continue. The decline in caries in developed contries has been steady and sustained. This has occured in countries both with and without wide spread fluoridation of public water supplies and it has affected all social groups.

The obvious question that arises for somebody trained for provision of oral health care is how important has clinical dental intervention been in achieving this decline. The answer is probably very little. The most likely causes of the decline are related to self care, diet, education, improved standards of living, social and political stability and a regular, consistent and sustained period of economic growth.

The current concept of risk for periodontal destruction acknowledges the cause and effect relationship between the microbial plaque and the inflamatory reaction of the gingiva. However, the disease is considered to progress in relatively short episodes of rapid tissue destruction, sometimes followed by repair and mostly by prolonged periods of quiescence. Wennstrom et al. (8) have proposed that the goal of periodontal care in society should be defined as the control of the development of destructive periodontal disease inorder to prevent loss of function of the tooth/dentition throught life, rather than the prevention and/or elimination of all clinical signs of periodontal inflamation. Prevention campains in periodontology should be concetrated on the younger age groups; the prevention component of lifestyle should be induced and accepted at a young age (9).

Awereness on risk factors and prevention of periodontal disease is very important for promotion and maintenance of oral health status. Without knowledge and understanding of these factors there can be no informed desitions and actions to promote oral health. An individual must be aware of the factors like poor oral hygiene, cigarate smoking and nutritional deficiencies, which are the predisposing factors to periodontal disease. Also an individual has to be awere that abiding to proper oral hygiene

practices like regular tooth brushing, dental flosing and rinsing with water and paying regular dental visits are helpful in prevention of periodontal disease and some other oral diseases (10).

Professional removal of calculus supports oral hygiene through self care in the individuals. However one should be reluctant to propose professional cleaning at regular intervals for everybody, because then everybody is made a patient for life, which is not in periodontology. And for many populations it is totally unrealistic economically to propose regular scaling on a population basis. Scarse resources would be far better applied to stimulate reduction of plaque levels through self care.
In endemicfluorosis areas, apart from aesthetic intolerance (social stigma) from the disfiguring nature and discoloration of the teeth due to dental fluorosis, fluorosed teeth in severe cases may become britle and thus prone to fractures. Fluorosis also affects the bones causing stinging pain in the back and joints, followed by progressive restriction of movements. Endemic fluorosis is recognized as a health problem as evidenced by the Tanzania Food and Nutrition Centre categorizing it as the fifth most common nutritional disorder. Primary prevention of dental fluorosis is desirable as fluorotic changes are irreversible vs needs of deflouridating potable water (11).

The population groups at highest risk to oral cancer are those who are the most refractory in accepting and acting on preventive advice and also the least likely to respond to an invitation to be screened in doctors' or dentists' surgery. This applies particularly to the erderly in lower socioeconomic groups, full denture wearers, heavy smokers and drinkers. Oral cancer is one of the few lethal diseases that dentists may encounter professionally and as well as having cognizance of its clinical features, all should be aware of its epidemiology, aetiology and natural history, its impact as a public health problem and the possibilities for its control.

There are several ethical, natural and practical reasons why oral health professionals should strengthen programmes especially concerned with the adverse effects in the oropharyngel area of the body that are caused by tobacco practices by providing opportunities to influence individuals to avoid all together, postpone initiation or quit using tobacco before they become strongly dependent. Tobacco prevention activities can be translated through existing oral health services or new community programmes targeted at different population groups (12).

Oral manifestation of HIV infection is a growing disease burden in several regions of the world. HIV/AIDS are significant public health problems in developed and developing countries and affects particularly countries in Africa and Asia. Oral health care of HIV infected people should be based on access to health facilities and provision of oral health care and health promotion for the improvement of quality of life of such people, emphasizing the inter-relationship between oral health and general health and development of positive attitudes towards oral health care of HIV/AIDS patients by health workers (13).

Dental trauma is seen by many dentists who deal with children. In the permanent dentition the most prone age group is reported to be between 8 and 12 years. Dental injuries usually affect one or two teeth, and the maxillary central incisors that are important both functionally and aesthetically are the most frequently involved. The management of traumatic dental injuries is categorized into the following treatment modalities, extraction, repositioning and immobilization, restorative procedures and prescribing antibiotics. The proposed preventive measures of dental traumatic injuries include, use of mouth protectors/guards, supervision of children during play, use of helmets and car seat belts. Other measures include careful monitoring of occlusal development, timely orthodontic treatment of proclined incisors, and most importantly educating the community on the prevention and immediate treatment of dental injuries (5).

Orthodontic services are an interesting aspect of community oral health. Malocclusion is not a disease but rather a set of dental variations that have, in the main a limited influence upon oral health. Yet demand for the services exceeds supply and presents difficult choices in the distribution of health resources.

Treatment services vs oral health promotion policies

Several developments have led to changes in dentists' practices relating to dental treatment and maintenance of good oral health. Taken

together, health professionals work for the common good of the nation and as such, have an obligation to comply with the recommendations set by the global strategy for health for all by the year 2000 document and many national targets set by WHO (14). The initiatives clearly implicate a connection between behaviour, lifestyle and health (15). The need to change unhealthy lifestyle behaviours is supported and accepted. Health behaviour change and health education programmes should support the growth of better health habits using a wide variety of strategies delivered in many different settings (individual/group. clinic/community/work).

Treatment services will never successfully tackle the underlying causes of oral diseases. The main reasons for the dramatic decrease in dental caries and periodontal disease in the past 20 years are wide scale use of fluoridated toothpaste, change in diet and infant feeding patterns, a reduction in smoking, an improvement in oral cleanliness and lastly a change in socio-economic factors. There is little doubt that health professionals can infuence health behaviour through promoting lifestyle changes, such as dietary, smoking and oral hygiene behaviour change. Increased allocation of the budget spent on traditional dental care has only marginal effect on the populations oral health status, therefore oral health inequalities will only be reduced through the implementation of effective and appropriate oral health promotion policies.

Population Strategies in Prevention

In his seminal paper on sick individuals and sick populations Rose (16) developed two strategies in the control and prevention of illness. The first strategy is the 'high risk' approach which seeks to identify and protect susceptible individuals. The second is the population approach which seeks to control the occurance of new disease in the population as a whole.

The high risk approach seeks to identify and protect succeptible individuals. One of the philosophical objections to the high risk approach is that apparently healthy people become patients, frequently put on long term medication for prevention. Some of the practical disadvantages of prevention by the high risk strategy relate to problems of screening for disease that have yet to develop or are in the preclinical phase with no signs or symptoms.

The population approch seeks to control the occurance of new disease in the population as a whole. It attempts to control the determinants of incidence, to shift the whole distribution in a favarable direction. In the population strategy we are trying to remove the underlying causes that make the disease common. In the population approach two approches can be distinguished. The first might be described as the restoration of biological normality by removing abnormal exposure. The second approach leaves intact the underlying cause of incidence of disease and seeks to prevent occurance by giving some protective intervention.

Favourable choices to be made to implement an effective and appropriate oral health promotion policy include; a diet low in refined sugars, regular effective oral hygiene, fluoride enhancement, avoidance of tobacco and moderation in alcohol consumption. Making the right choices for the underprivilaged is a challange because of the many other problems they have to deal with!

Which approach should we take as professionals for the underprivilaged?

The core functions of community oral health include assessment, policy development and assurance. Assessment covers, assessing the preveiling status and oral health needs of the community, investigating the adverse events and oral health harzards and analysing the determinants and contributing factors of oral diseases locally and the adequacy of existing oral health resourses. Policy development is similarly defined in three stages; advocacy which requires establishing networks of support and communication with health related organizations, media and general public; prioritizing the needs from the community (needs assessment) and planning in terms of an action plan for the community. Assurance practices describe management plans that is implementation and evaluation of programmes and services and information and educating the public about current health status, health care needs, positive health behaviour and policy health care issues.

Dentistry is not a high priority area in the health care system. Therefore if oral health problems of the underprivilaged are not known it will be difficult to include them in the Comprehensive Council Health Plans. To formulate an effective strategy for improving health and survival we must first re-examine the causes that lead to the

present high levels of disease and death especially among the vulnurable groups. We must follow the chain of causes all the way to the source, even if its link frames a mirror in which we begin to rediscover ourselves (17).

Time, temperament and trust are the ingredients for both initiating and sustaining community involvement in oral health promotion. Time is needed for community emporement. Necessary also is an orientation that one can learn from community people and that power to the people is desirable. Trust in this case is beliving that over time and with support, the people are capable of analysing their own situations and deciding what is best for them (18). If we want to persue equity and promote oral health in our communities a new kind of professional who is committed to oral health promotion is required.

Takling oral health inequalities

Social inequalities lead to inequity in oral health care. What can be done abut that? A political will has to exist to recognize that tackling inequalities in oral health is a fundamental requirement for social justice for all citizens. This is familiar to those who have followed the application of the PHC approach. The approch takes four key areas for intervention; the physical environment (housing); social and economic factors (income, maintenance); barriers to adopting a healthier personal lifestyle (smoking) and access to appropriate and effective health and social services (access to oral health care). A note of caution is made in that only intrventions of established efficacy in reducing the inequities should be persued.

Equity cannot be achieved by dentists and related personnel in isolation. Linkages are needed with sectors that influence oral health determinants like education, nutrition and food security, environment, social welfare, small business and community development. For dental personnel really to pursue Primary Oral Health Care, they need to partner with people and so contribute to the overall development of their communities.

Dental programmes, whether to improve primary care or teaching, need to acknowledge that peoples' oral health cannot be achieved by dental providers; make an explicit philosophical commitment to pursue equity in dental care and work with institutions and groups that have a spirit of social equity, community participation and activism.

Removing inequity in oral health care

Evidence based interventions, like evidence based medical procedures, for example, natural experiments in which favorable changes occur for reasons other than to reduce inequalities in health should be sought. In oral health the classical natural experiment that lead to removing inequity in oral health care is fluorided water supplies. Unfortunately water fluoridation has reached an impasse and increasingly the use of other vehicles for fluoride needs to be explored. The marked decline in dental caries has also been ascribed to the use of fluoride toothpaste. Methods of increasing the use of fluoride tooth paste is seen as one approach to achieving national targets set for improved oral health (19).

In future oral health improvements are most likely to be gained from enhancing healthy lifestyles choices. To formulate an effective strategy for improving oral health and survival, we must first re-examine the causes that lead to the present oral health problems among the vulnerable groups. The challanges for the dental profession for the underprivilaged in Tanzania include improving living and working conditions, elimination of food poverty, increasing breast feeding, programmes of smoking cessation, reducing accidents, access to services for children and older people, dental services for the disadvantaged groups and allocation of resources to areas of greatest need.

Needs assessment and oral health plan

Determining the service needs for an individual patient illustrates many of the possible approaches and issues in the assessment of oral health needs in the community. Needs assessment depends on the optimal benefit from any needs assessment and oral health care plan on which it is based depends on high level of diagnostic accuracy, oral health provider compliance with guidence for managing oral diseases and patients concerns as well as patient's compliance with diet control, oral hygiene and use of fluorides. Unless evidence based oral care is provided, needs may be incorrectly redifined leading to reccuring spiral of more and more complex treatments.

Population wide oral health promotion will reduce inequities and increase the number of underprivileged who will benefit by making healthier choises easier. Efficacy can be achieved if appropriate interventions are provided to those who would benefit from them with optimal use of resources. Tasks should be matched with the

skills of operators. Population wide health promotion will reduce inequities and increase the numbers of people who would benefit by making healthier choices easier.

Oral health promotion

Health promotion offers a new and often complex challenge to improving both general and oral health. It is sometimes proved to be perplexing to health professionals who have been trained in the biomedical approach and find its concepts and principles unfamiliar.

Oral health promotion shifts the responsibility for oral health from the formal health care system to individuals, communities and decision makers at all levels of society. In addition, implementing health promotion requires different set of skills from those usually learned in schools of dentistry, nursing and medicine. This suggests that the training of health professionals needs to be changed to match the broder role required by community health promotion. Training in behavioural sciences and experience working with communities and interest groups are essential if health promotion is to become a major force in the task of improving the populations health.

If oral health care for the deprived is to be achieved, it must be on the agenda of relevant organizations at every level of society. This requires those involved in oral health promotion to work in partneship with other agencies and the public. Changes in legislation and policy, underpinned by educational initiatives, will improve the social and physical environment which will support and encourage health behaviors. The success of such a strategy is built upon the achievement of a range of defined short term goals which together lead to long term sustainable improvements in general and oral health.

Oral health care professionals, should study and understand peoples oral health risk behavious in terms of oral disease patterns, time and cost of care and how those factors should be considered in organizing services. Oral health targets have particular feasibility problems, however, because general dental practitioners are only able to provide care on the basis of expressed need i.e. demand and can have little other impact on normative need. Staffing levels have correlated closely with high levels of demand than high levels of needs. Market approches have been hampered by gatekeepers of the services, the health professionals. The National Health Insurance Fund should provide an efficient mechanism for the treatment of oral diseases and lead to dentists becoming established as small businessmen. Horeover the role of ancillaries to provide services to the underpriviled needs to be established.

The trend for the future for the underpriviled

The trend for the future for the underpriviled is not ecouraging. Why? The present unequal system of oral health services to minority of the population and based on reparative services seems to continue. Secondly, there is no sign of changes in the model of production of dentists trained mainly for reparative services for facing high prevelance of disease. Thirdly, increased difficulties in finding jobs for new graduants may lead to lower demand for places in the dental schools. Fouthly organized oral health promotion including prevention has had a nominal role to date. Nevertheless, it is expected that there will be a decline in caries incidence due to wider use of fluoridated dentrifrice and other more regular use of other forms of topical fluoride. Therefore population strategies need to be implemented inorder to reverse the negative trends prevailing today.

The way foreward

Reducing inequalities has to become one of the main oral health policy issue and should become a major focus for a government health policy. Oral health inequalities will only be reduced through implementation of an effective and appropriate oral health promotion policy. The preventive approach should be directed to changing risk factors, recognizing the impact of the environment on oral health care and identifying opportunities to make changes conducive to oral health. It should also aim at emporing individuals and communities in the process of setting priorities, making desitions, planning and implementing strategies to achieve better oral health, refocusing attention away from the responsibility to provide curative and clinical services towards the goal of oral health gain. It should focus on inceasing workforce diversity, capacity and flexibility, overcoming barriers to care by replacing effective programmes and proven efforts, and lastly build the science base and accelarate science transfer and collaboration.

References

1. Elderton RJ. The effects of change in caries prevalence on dental education. International Dental Journal. 1994: 44: 445-450.
2. Mosha HJ. Provision of oral health services in Tanzania. Implementation status 2005. Tanzania Dental Journal 2005 :12 :1 :30-34.
3. Mosha HJ, Senkoro A, Masalu JRP, Kahabuka F, Mandari G, Mabelya L and Kalyanyama B. Oral health status and treatment needs among Tanzanians of different age groups. Tanzania Dental Journal 2005:12:1:18-25.
4. Andreasen JO and Andreasen FM. Textbook and Color Atlas of Traumatic Injuries to the Teeth. Munksgaard, Copenhagen 1994.
5. Kahabuka FK, Plasschaert A, van't Hof MA. Prevalence of teeth with untreated dental trauma among nursery and primary school pupils in Dar es salaam, Tanzania. Dental Traumatol, 2001;17: 109-13
6. Moshy J, Mosha HJ, Lema PA. Prevalence of maxillo-mandibular fractures in mainland Tanzania. East Afr Med J 1996;73:172-5.
7. Todd JE and Dodd T. Children's Dental Health in England and Wales. Social Survey Division. Her Majesty's Stationery Office, London.
8. Wennstrom JL, Papapanau PN and Grondahl K. A model for decision making regarding periodontal treatment needs. Journal of Clinical Periodontology 1990:17:217-222.
9. Pilot T and Purdell Lewis DS. Guidelines for Community Periodontal Care. FDI World Dental Press, London 1992.
10. Yokoyana J and Mumghamba EGS. Awareness on causes, risk factors and prevention of periodontal disease among secondary school students in Kinondoni district, Dar es Salaam, Tanzania. Tanz Dent J 2005:12:1:1-8.
11. Awadia AK. Fluorosis in Africa – a health problem. Tanzania Dental Journal 2005:12: Special Issue 37-47.
12. Petersen PE. Global Framework Convention on Tobacco Control – The Implications for Oral Health. Tanz Dent J 2005;11: Special Issue:11-12.
13. Petersen PE. The Phuket Declaration on Oral Health in HIV/AIDS 2004. A Commitment to Action. Tanzania Dental Journal 2005;II:Special Issue:13.
14. WHO World Health Organization. Global Strategy for Health for all by the year 2000. WHO, Geneva 1981.
15. Diekstra RFW and Jensen MA. The importance of psychosocial interventions in primary health care. In Theoretical and Applied Aspects of Health Psychology 1990 pp 87-101. Haward Academic Publishers, London.
16. Rose G. Sick individuals and sick populations. International Journal of Epidemiology. 1985:14: 32-38
17. Werner D. Health for No One by the year 2000. The High Cost of Placing National Security before Social Justice. Hesperian Foundation, Palo Alto, California, USA 1989.
18. McFarlane J and Fehir J. A community primary health care programme based on empowerment. Health Education Quarterly. 1994:21:381-394.
19. Davies RM, Holloway PS and Ellwood RP. The role of fluoride dentifrices in a national strategy for oral health of children. British Dental Journal 1995:179: 84-87

A father was describing coming holiday at a rest to his three children, age two to six. It was at a place where the beds would be made, he told them, the meals would be cooked, and all the cleaning would be done for us. Our oldest looked puzzled. "Then what's Mummy coming for?" he asked.