

**Affordable and Accessible Oral Health Care: A Systematic Approach**

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**Type of Publication:** Review Paper

**Conflicts of Interest:** Nil

**Abstract**

**Background:** India is one of the vast countries with extraordinary characteristics and diversity in terms of its geographical ,linguistic, religious ,taboo ,socio-cultural features etc.The fact that there is inequitable accessibility to oral health care services in India across its rural and urban areas cannot be overstated.

**Objective:** For such a Diverse country with minimum resources "*Affordable And Accessible Oral Health Care* " is the only answer to derive positive results and equitable resource allocation.

**Method:** The databases were searched from Pubmed and MEDLINE ,articles published in peer-reviewed journals and from sites of government agencies such as Dental Council of India, World Health Organisation and of Minsitry of Health and Family Welfare.

**Conclusion :** This artice reviews about oral health policy, national oral health programme along with the approaches to provide affordable and accessible oral health care.

**Keywords:** Oral Health, Affordable, Accessible, Oral Health Policy

**Introduction**

India is one of the vast countries with extraordinary characteristics and diversity in terms of its geographical ,linguistic, religious ,taboo ,socio-cultural features etc. The literacy rate of India is 73% whereas for males it is 80.9% and for females it is 64.6%. Rural literacy rate is 67.8% and Urban literacy rate is 84.1% in which health literacy was assessed by National Assessment of Adult Literacy. According to National Assessment of Adult Literacy 12% adults have proficient health literacy and 14% have below basic health literacy<sup>[1]</sup>.

Oral health is indispensable for the wellbeing and good quality of life. Poor oral health affects growth negatively in all aspects of human development. Dental caries and periodontal disease remain the two most prevalent dental diseases of the Indian population<sup>[2]</sup>.

As per the statistics , Total number of villages in India are 5,97,464. Total number of dental colleges in India are 313 and Total number of dentists registered in DCI till 2018 are 251270<sup>[3]</sup>. The fact that there is inequitable accessibility to oral health care services in India across its rural and urban areas cannot be overstated. For such a

Diverse country with minimum resources "AFFORDABLE AND ACCESSIBLE ORAL HEALTH CARE " is the only answer to derive positive results and equitable resource allocation.

**Methodology - Search Methods**

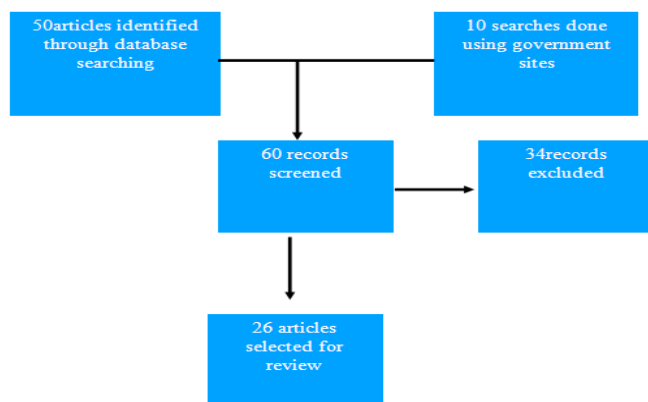
Data search for the present review was done electronically. Electronic search was conducted using Databases such as Pubmed and MEDLINE ,articles published in peer-reviewed journals and from sites OF government agencies such as Dental Council of India, World Health Organisation and of Minsitry of Health and Family Welfare. The collected documents include original articles, reviews , short reports, letter to editor and editorials that focusses on affordable and accessible oral health care.

**Selection Criteria**

Studies On Oral Health Policy, National Oral Health Programme, Oral Health Education , Teledentistry, Portable Dentistry, Green Dentistry, Private-Public Partnership , Affordable Oral Health Care And Accessible Oral Health Care.

**Data Collection and Analysis**

All the articles collected were anlyased according to the inclusion criteria which includes,affordable oral health care, accessible oral health care and oral health policy. Studies not meeting the inclusion criteria are excluded [Figure 1]



**Importance of Oral Health**

According to the World Health Organisation (WHO), Oral health is a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity<sup>[2]</sup>.

Oral diseases affect both the young and the old. Some of the common diseases are dental caries, periodontal diseases, malocclusion, sub-mucosal fibrosis, oral cancer etc. Cleft lip and cleft palate also continue to affect the population. Oral lesions are also common with patients with HIV/AIDS and other debilitating systemic conditions.

Two large scale Oral Health Surveys have been conducted in the past (i) National Oral Health Survey & Fluoride Mapping by Dental Council of India in 2003 and (ii) Oral Health in India: Report of multi-centric oral health survey by MoHFW in collaboration with Dental Department AIIMS in 2007. These two surveys indicate the prevalence of some oral diseases and conditions in the country [Table -1]

S. No	Diseases	Prevalence
1	Dental Caries	40-45%
2	Periodontal Disease	>90% (Advanced disease in 40%)
3	Malocclusion	30% of children
4	Cleft lip and palate	1.7 per 1000 live births
5	Oral cancer	12.6 per lakh population
6	Oral submucous fibrosis (pre- malignant and crippling condition of mouth)	4 per 1000 adults in rural India

7	Dental Fluorosis	Endemic in 230 districts of 19 States
8	Edentulousness (tooth loss)	19-32% of elderly population >65 years
9	Oral lesions due to HIV/AIDS	72% of HIV/AIDS patients
10	Birth defects involving oro-facial complex	0.82 to 3.36 per 1000 live births
11	Others: Traumatic injuries, <ul style="list-style-type: none"> <li>Mucosal lesions associated with radiation and chemotherapy</li> <li>Morbidity and deformity following oral cancer surgery.</li> </ul>	

Inadequate nutrition	Periodontal disease, tooth loss, poor oral hygiene, oral pain, oral cancer, taste perception
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**Oral Health For Healthy Life**

Oral health policy was drafted by Dental Council of India (DCI) way back in 1986 and National Oral Health Policy was developed by Dental Council of India (DCI) in the year 1994<sup>[5][6][7]</sup>

It is the same time when World Health Organization (WHO) had given importance to dental health by selecting the theme “Oral Health for Healthy life” for global health for the year 1994<sup>[7][8]</sup>

In continuum of this, the core committee appointed by Ministry of Health and Family Welfare, GoI accepted in principle national oral health policy as a component of NHP and moved a 10 point resolution in its fourth conference in the year 1995<sup>[5][8]</sup>

**The 10 Point Resolution**

1. There is an urgent need for an Oral health Policy for the nation as an integral part of the National Oral Health Care Programme Health Policy.
2. Special, well coordinated, National Oral Health Care Programme be launched to provide Oral Health Care, both in the rural as well as urban areas due to deteriorating oral health conditions in the country as revealed by various epidemiological studies. Also, it is important to launch preventive, curative and educational oral health care programmes integrated into the existing system utilizing the existing health and educational infrastructure in the rural, urban and deprived areas.
3. A post of full time Dental Advisor at appropriate level in the Dte. G.H.S. should be created as a first step towards strengthening the technical wing of the Dte.GHS in this regard.

**Oral Health Is An Integrated Part Of General Health**

Oral Health Is An Integral Component Of General Health, A Tenet, No One Can Disagree With. There Is Association Of Oral Health With Various Systemic Conditions Like Diabetes, Cardiovascular Disorders, Pregnancy And Its Impact On Quality Of Life<sup>[4]</sup>. [ Table 2].

General Health	Oral Health
Diabetes Mellitus (Type 1 and Type 2)	Severe Periodontal Disease
Cardiovascular Disease(Coronary Heart Disease, Stroke)	Tooth loss and severe Periodontal Disease(Bone Loss, Deep Pockets)
Respiratory diseases( chronic obstructive pulmonary disease, aspiration pneumonia)	Poor oral hygiene, periodontal disease, difficulty in swallowing

4. Studies have revealed that dental diseases have been increasing both in prevalence and severity over the last few decades. There is an urgent need to prevent the rising dental diseases in India.

5. The Council, therefore, resolves that preventive and promotive Oral Health Services be introduced from the village level onwards and accordingly a pilot project on Oral Health Care may be launched by the Ministry of Health & Family Welfare during 1995-96 in five districts, one in each in five states.

6. The Council further resolves that legislative measures be adopted to ensure a statutory warning on the wrappers and advertisement of sweets, chocolate and other retentive sugar eatables '*Too Much Eating Sweets May Lead To Decay Of Tooth*'. Similar measures are also called for tobacco and Pan Masala related products.

7. The Council recommends that a National Oral Health Care Programme Training Centre be established or the existing centres be strengthened for training of various categories of Oral Health Care Personnel.

8. All District Hospitals and Community Health Centres have dental clinics. All Dental Colleges should have courses on Dental Hygienists and Dental Technicians.

9. The Council further resolves that the Pilot Project may be extended to all the States at the rate of one District in every State.

10. The Council resolves that there is an urgent need to have a National Oral Health Care Programme Institute for Dental Research to guide oral health research appropriate to the needs of the country.

### **National Oral Health Programme**

National Oral Health Programme (NOHP) is an initiative of the 12 Plan period launched in the year 2014-15 to strengthen the public health facilities of the country for an

accessible, affordable & quality oral health care delivery.

The objectives of NOHP are as under<sup>[10]</sup>:

1. Improvement in the determinants of oral health e.g. healthy diet, oral hygiene improvement etc and to reduce disparity in oral health accessibility in rural & urban population.
2. Reduce morbidity from oral diseases by strengthening oral health services at Sub district/district hospital to start with.
3. Integrate oral health promotion and preventive services with general health care system and other sectors that influence oral health; namely various National Health Programs.
4. Promotion of Public Private Partnerships (PPP) for achieving public health goals

### **The program has two components as under**

NHM Component: support is provided to States to set up Dental Care Units at District Hospitals or below. Support is provided for the following components:

- Manpower support [Dentist, Dental Hygienist, Dental Assistant]
- Equipments including dental Chair
- Consumables for dental procedures

Tertiary Component: For central level activities such as:

- Designing IEC materials like Posters, TV, Radio Spots, Training Modules
- Organizing national, regional nodal officers training program to enhance the program management skills, review the status of the program Preparing State/District level Trainers by conducting national, regional workshops to train the paramedical health functionaries associated in health care delivery.

Aim is to:

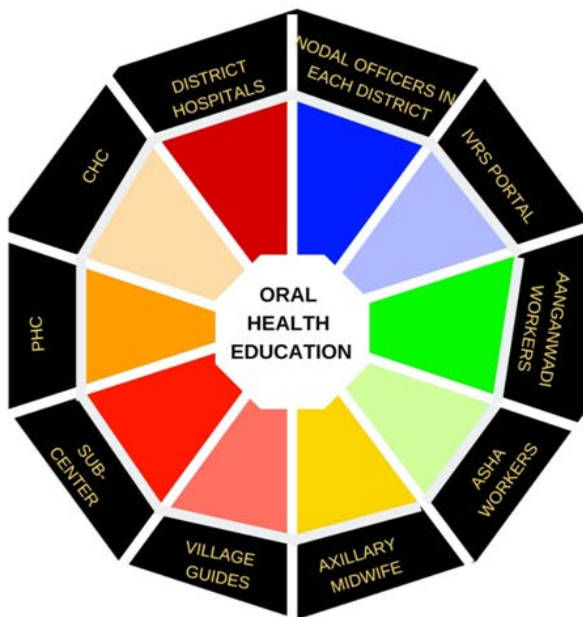
- Provide information regarding common oral health concerns

- Create awareness regarding the importance of oral health
- Dispel common myths regarding oral diseases
- Provide emergency instructions in case of common oral health diseases

### Best Practices for Affordable And Accessible Oral Health Care

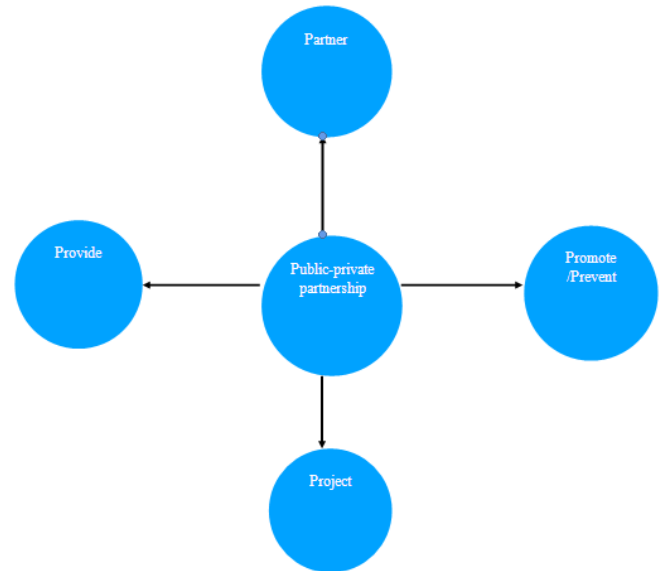
#### To Increase Oral Health Literacy Through Multisectoral Approach

oral health education should be provided in grass root level covering all sectors of health delivery system starting from aanganwadi workers –ASHA workers-axillary midwife-village guides-sub centre-primary health centre-community health centre-district hospitals- nodal officers in each district –IVRS portal.[Figure 2].



### 2. Public - Private Partnership

Accessible oral health can be made available to the entire Indian population by fostering public-private partnership. (strategies for improving).It aims to increase the public expenditure on health aspects and reduces regional imbalances in health, pooling resources, optimization of health manpower, community participation, and ownership<sup>[11][12]</sup>. [Figure 3].



### 3. Portable Dentistry

The portable dental services generally less expensive, more accessible and less susceptible to mechanical difficulties<sup>[13][14]</sup> can increase the awareness of the practicing dental community<sup>[13][15]</sup>, the oral health education to the elderly, children and their families may increase the value placed on preventive dental care<sup>[13][16]</sup> and improve the community oral health status<sup>[13][17]</sup>.

### 4. Green Dentistry

Green dentistry is an innovative way of dental practice which is environment friendly and at the same time conserves money and time by reducing waste, conserving energy and decreasing pollution with the use of latest techniques and procedures<sup>[18]</sup>.

Green dentistry is a whole - earth approach to tooth care that reduces the environmental impact of dentistry and creates a caring environment for patients. It is based on the model of four R's – Rethink, Reduce, Re-use and Recycle<sup>[19]</sup>.

Green dentistry reduces supply costs by integrating dental innovations, and increases productivity by efficient use time, reducing wastage and preventing pollution. Ultimately patients get benefitted by quality treatment with reduction in treatment costs<sup>[20]</sup>.

## 5 Evidence Based Dentistry

Evidence based dentistry will help to bridge gap between research and clinical dental practice and to optimize the information available to clinicians and patients<sup>[21]</sup>. The ADA defines the term “evidence-based dentistry (EBD),” as an approach to oral health care that requires the judicious integration of systematic assessments of clinically relevant scientific evidence, relating the patient's oral and medical condition and history, with the dentist's clinical expertise and the patient's treatment needs and preferences<sup>[22]</sup>.

The five steps involved in Evidence Based Dentistry are as follows:

- 1) Ask clinical questions
- 2) Acquire the best evidence
- 3) Appraise the evidence
- 4) Apply evidence to your patient
- 5) Assess effectiveness, efficiency of EBM process

However, to offer the acceptable clinical care and meet the increasing awareness of the patient population, it is in the best interest of the practitioners to adopt EBD sooner rather than later. The importance of providing a balanced mix of science, clinical expertise, and patient needs to optimize patient care in a practice cannot be underestimated<sup>[23]</sup>.

## 6. Teledentistry

Teledentistry is a combination of telecommunication and dentistry involving the exchange of clinical information and images over remote distances for dental consultation and treatment planning. Teledentistry has the ability to improve access to oral health care, improve the delivery of oral healthcare and lower its costs<sup>[24]</sup>. It also has the potential to eliminate the disparities in oral healthcare between rural and urban communities<sup>[25]</sup>. Teledentistry may turn out to be the cheapest, as well as the fastest, way to bridge the rural-urban health divide. Taking into

account the huge strides in the field of information and communication technology, teledentistry can help to bring specialized healthcare to the remotest corners of the world<sup>[26]</sup>.

After the launch of IVRS portal toll free number(1800-11-2032) in AIIMS New Delhi on 20th March 2017, its time to increase its application in each part of India<sup>[10]</sup>.

## Conclusion

The responsibility of oral healthcare of citizens should be equally distributed between government and private sector. Oral health education should be provided in grass root level covering all sectors of health delivery system. Government should introduce policies in the oral health sector to provide affordable dental treatment in unaccessible area.

**Ethical Clearance:** Ethical clearance has been obtained from Institutional Ethical Clearance Committee (IEC).

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