



National Oral Health Programme and The Role of a Pedodontist in India

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Abstract: Oral health is a key factor influencing an individual's overall health and quality of life. A specialist pediatric dental surgeon plays a vital role in identifying the most common dental problems during early childhood and charting a comprehensive plan to manage them. Early identification and diagnosis help to minimise the need for extensive treatment procedures, reduce the burden on parents/caregivers, and enhance the Oral Health-Related Quality of Life of children.

Keywords: Dental Caries, Dentist, Malocclusion, Oral Health, Pediatric Dentist

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I. INTRODUCTION:

Oral health is a key factor influencing an individual's overall health and quality of life (QoL). Globally, oral pathologies are a major health burden to individuals throughout their lives. Such pathologies may cause discomfort, pain, disfigurement, and, sometimes, even death. Approximately 3.5 billion people worldwide are affected by oral disease, including 530 million children who have experienced dental caries in their primary teeth. Untreated dental caries in permanent teeth is the most common health condition according to the Global Burden of Disease (GBD) 2017. About 10% of adults suffer from periodontal disease. Oral carcinomas are among the top three common cancers in Asian countries. But surprisingly, only 12.4% of individuals seek dental consultation in their lifetime. [1]

PREVALENCE OF ORAL DISEASES IN INDIA:

Approximately half the population in India is affected by some form of oral disorder (667 million or 49.2%), 181 million (13.3%) suffer from severe periodontitis, 432 million (32%) have untreated dental caries in their permanent teeth, and 112 million (8.3%) children have untreated dental caries in their deciduous teeth. [1]Tables 1 & 2 show data for the other elements of the burden of oral diseases in India, taken from a multicentric study.

BURDEN OF ORAL DISEASES AND DISORDERS IN CHILDREN:

Dental problems affect the QoL of individuals throughout their lives. The consequences of untreated dental caries are multi-fold. Cavities interfere with a child's ability to eat (86%), sleep (50%), and participate in school activities (32%). [2]Dental pain from untreated dental caries may impact growth and cognitive development. Children with severe early childhood caries (S-ECC) demonstrate several physiological signs of malnutrition, including iron deficiency anemia, which may lead to permanent negative effects on their growth and development. [3]Malocclusion is a craniofacial growth and developmental disorder that can cause functional aberrations, influence the upper airway volume, impact oro-facial esthetics, and also affect psychosocial aspects. While all these factors may affect an individual's self-esteem, they can also pose a significant public health issue, warranting timely intervention and prevention. Additionally,

parents/caregivers/adults are impacted directly by the cost of treatment procedures and indirectly due to loss of work hours and missed income opportunities due to the greater treatment needs of children. This time lost in work productivity may seem trivial at an individual level, but it impacts the national exchequer on an aggregate. [4]

Table 1: Burden of Oral Diseases (Multi-centric Survey 2007)

Sl.	Disease	Prevalence
1.	Malocclusion	30% of children
2.	Cleft lip and palate	1.7 per 1000 live births
3.	Oral cancer	12.6 per lakh population
4.	Oral submucous fibrosis	4 per 1000 adults in rural India
5.	Dental fluorosis	Endemic in 230 districts of 19 states
6.	Edentulousness	19-32% of population > 65 yrs
7.	Oral lesions due to HIV/AIDS	72% of HIV/AIDS patients
8.	Birth defects involving oro-facial complex	0.82 to 3.36 per 1000 live births
9.	Others: Traumatic injuries <ul style="list-style-type: none"> • Mucosal lesions associated with radiation and chemotherapy • Morbidity and deformity following oral cancer surgery 	

ORAL HEALTH IN A DEVELOPING DENTITION:

Dental caries, traits of malocclusion, and any deleterious oral habits (tongue thrusting, mouth breathing, digit sucking, etc.) are some of the most common dental conditions that influence the Oral Health-Related Quality of Life (OHRQoL) of an individual. These conditions can be comprehensively detected by a pediatric dental surgeon/pedodontist during the early childhood years of an individual. Early detection and treatment during childhood limit the influence of developmental aberrations, lessen the time required for extensive treatment later, and minimize the harmful impact of the surrounding orofacial musculature on the developing dentition in children.

Children less than fourteen years of age account for thirty-one percent of the total Indian population. While children from countries with improved healthcare facilities have their first dental check-up at a younger age, children in India usually visit a dentist around the age of six years with acute complaints of pain or trauma, and not for preventive reasons. The predicted cost for dental treatment among children who had no dental consultation below the age of one year is 40% more than that of children who had visited a dentist before attaining the age of one year. [5] The current healthcare system in India is not robust enough to address the growing dental caries burden, affecting the primary dentition of every other child. [6]

Table 2: Available data from surveys in India

Condition	2003	2007
Dental caries	51-80%	23-95%
Gingival bleeding	-	23-100%
Periodontal disease	57-80%	15-95%
Malocclusion	23-41%	-
Fluorosis	3-12%	1.2-36%
Edentulousness	32-65%	0.8-18%
- = Not reported		

NATIONAL ORAL HEALTH PROGRAMME:

Vision 2030 by the FDI necessitates empowering oral health-care delivery by a comprehensive and evidence-based approach. [7] In India, some of the programmes addressing dental health education and oral hygiene include 'Bright Smiles, Bright Futures School Dental Health Education' (Young India in collaboration with IDA and Colgate), Trinity Care Foundation (Bangalore), Chacha Nehru Sehat Yojna, and Intensive Dental Health Care Programme (Punjab). [8]

In 2014-15, the National Oral Health Programme (NOHP) was launched to improve the oral health status and reduce the burden of oral diseases among the Indian population, to reduce risk factors and prevent oral diseases. [1] The Operational Guidelines of NOHP define the healthcare services delivered at the District, State, and National levels. They also outline several activities that integrate oral healthcare with other national programs. Some of the expected outcomes to enhance an individual's QoL include early detection, timely treatment, decreasing exposure to risk factors by making changes in the existing lifestyle, minimizing pain, and reducing the severity of pain and suffering due to oral disease. [1] Even brief sub-maximal physical activities, such as those lasting only six minutes, have a positive impact on salivary defense dynamics and contribute to maintaining good oral health in children. [9]

NOHP aims to improve the QoL of individuals by reducing the oral health disease burden, including malocclusion and untreated dental caries in children below 6 years of age. It plans to disseminate preventive oral healthcare via the primary health centers across the country. It also supports innovations, generating evidence,

and the implementation of oral health care policy. This requires the services of dental hygienists, dental assistants, general as well as specialist dental surgeons.[8]

Brazil designated oral health as one of the four priority issues in its unified health system. In 2019, a law project (PL 2416/2019) by the Brazilian House of Representatives proposed a model where children in their mixed dentition are examined by a specialist to ascertain their dental treatment needs. [10] India has approximately 3.6 lakh registered dental surgeons, with an estimated 0.8% of Paediatric Dentists. Studies report an increased prevalence of dental caries, malocclusion, and treatment needs among children from their deciduous dentition to their mixed dentition. [11] [12]

According to Chandrasekhar 2022, though the health-care system in India has an elaborate referral policy from the village level to the tertiary level, poor utilisation warrants the need for active implementation and follow-up. Additionally, dental surgeons need to be incorporated into the 'Ayushman Bharat' scheme launched in 2018 for effective implementation. [7]

A specialist Pedodontist should be an integral part of NOHP to examine children annually and determine their oral health status. This should be followed by a comprehensive treatment plan where these examined children will be treated, monitored, and followed up till the completion of dentofacial growth at the age of eighteen years [Chart 1]. [1][8]

II. CONCLUSION:

Oral health problems can adversely affect the well-being and have a negative impact on the overall quality of life of an individual. Dental caries and malocclusion, which begin during early childhood, can be prevented and treated with minimal intervention when detected early. Regular check-ups of children's oral health status by a pedodontist is a definitive step towards the global strategy of reducing the combined prevalence of major oral disease by 10% and achieving universal health coverage for oral health by the year 2030.

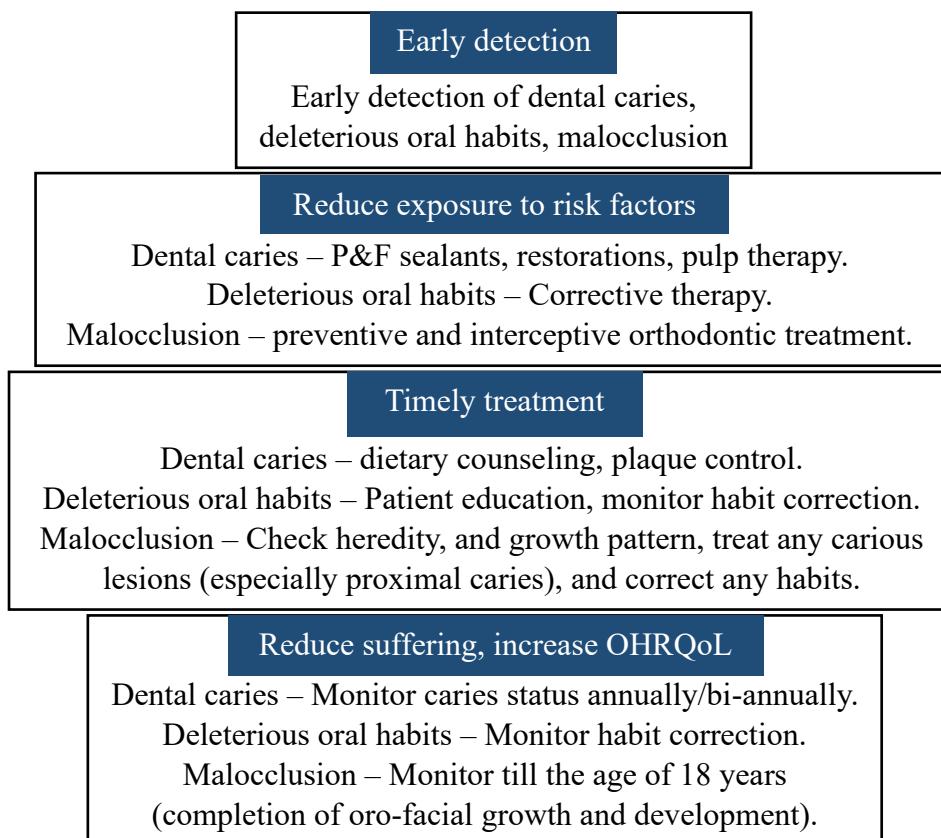


Chart 1 – Key points to early diagnosis and management to enhance OHRQoL

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