



The Role of Schools in Promoting Oral Health Among Children

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Abstract

Oral health is a critical component of overall well-being, yet it remains one of the most neglected areas of child health in India. Dental caries, gingivitis, malocclusion, and poor oral hygiene habits are highly prevalent among Indian children, particularly in socio-economically disadvantaged communities. Schools, as structured learning environments and influential social institutions, play an essential role in shaping children's health behaviors. This article explores the role of Indian schools in promoting oral health through education, prevention, early identification, and community engagement. It analyzes existing challenges such as limited awareness, inadequate oral health programs, insufficient teacher training, and disparities between urban and rural institutions. It further presents evidence-based strategies including school-based dental screening, fluoride varnish programs, supervised tooth-brushing sessions, integration of oral health into the school curriculum, and partnerships with local dental colleges and health departments. The article highlights successful models from India and other developing nations, emphasizing the effectiveness of sustained, behavior-focused interventions. The role of teachers, parents, school nurses, and local governments is also examined in creating a supportive ecosystem for oral health promotion. The article concludes that strengthening school-based oral health initiatives is essential for reducing the burden of dental diseases in India and achieving national health goals. A coordinated, multi-level approach involving educational reforms, policy support, and community participation can empower children to adopt lifelong healthy oral hygiene practices, ultimately improving overall health outcomes across generations.

Keywords: Oral health promotion, School-based interventions, Indian children, Dental hygiene, Preventive dentistry

Introduction

Oral health is an integral component of general health, influencing nutrition, speech, learning, self-esteem, and overall quality of life. Despite this, dental problems remain a major public health concern in India. Studies consistently show that dental caries affects more than half of Indian schoolchildren, while conditions like gingivitis, plaque accumulation, and malocclusion are increasingly reported across both rural and urban regions. These oral diseases are largely preventable, yet continue to persist due to a lack of awareness, inadequate access to dental care, and unhealthy lifestyle patterns including poor diet, skipped brushing, and high sugar intake.

Schools are uniquely positioned to address this public health challenge. With millions of children attending government, private, and residential schools daily, the school setting provides an accessible, controlled environment for early oral health education and preventive practices. Because children are developing habits that persist into adulthood, school-based efforts can significantly influence lifelong oral hygiene behaviors. This article thoroughly examines the role of schools in promoting oral health among Indian children, the challenges faced, and evidence-based recommendations for strengthening school-based oral health programs.

Oral Health Issues in Indian Children

Before exploring the school's role, it is important to understand the magnitude and nature of oral health problems among Indian children.

1. Dental Caries

Dental caries is the most common chronic disease among children in India. Research shows a higher prevalence in rural children due to inadequate hygiene practices and limited access to dental services. Urban children, on the other hand, face increased risk due to processed food consumption.

2. Gingivitis and Gum Problems

Poor brushing habits, lack of flossing, food lodgment, and irregular dental visits contribute to high rates of gingivitis. Gingival bleeding and swelling are often ignored until they cause pain.

3. Malocclusion and Orthodontic Problems

Thumb sucking, mouth breathing, and delayed loss of primary teeth can lead to malocclusion. Many parents are unaware of the need for early orthodontic evaluation.

4. Fluorosis

In regions with high fluoride in groundwater (e.g., Rajasthan, Andhra Pradesh), children develop dental fluorosis. This increases the demand for preventive and treatment services within schools.

5. Trauma and Injury

Sports-related and accidental dental injuries are common. Schools often lack protocols for first-aid management of dental trauma.

Understanding these issues underscores the need for proactive school-based oral health programs.

Why Schools Are Ideal Platforms for Oral Health Promotion

1. Reach and Accessibility

Schools bring together large groups of children daily, enabling systematic and continuous oral health education.

2. Behavior Formation Stage

Childhood is the best stage for habit formation. Regular brushing, reduced sugar consumption, and care-seeking behaviors can be instilled early.

3. Influence of Teachers

Teachers serve as role models. When trained, they can reinforce healthy practices effectively.

4. Opportunities for Screening and Early Detection

School-based dental checkups can identify early caries, malocclusion, and gum problems, ensuring timely referral and treatment.

5. Integration into Existing Health Programs

Government initiatives like the School Health Program, Ayushman Bharat, and Rashtriya Bal Swasthya Karyakram (RBSK) support preventive health activities in schools, making oral health promotion feasible.

Current Scenario of School-Based Oral Health Programs in India

While some schools implement oral health activities, the coverage is inconsistent and often limited. Challenges include:

- Lack of trained teachers for oral health education
- Irregular screening camps
- Absence of structured curriculum content related to oral hygiene
- Limited collaboration with dental professionals
- Financial constraints
- Differences in implementation between private and government schools

Despite these challenges, several regions and institutions have piloted successful models demonstrating the potential of school-based initiatives.

Components of Effective School-Based Oral Health Programs

1. Oral Health Education

Education is the foundation of oral health promotion.

a. Curriculum Integration

Oral health topics should be incorporated into subjects like science, physical health, and environmental studies. Key contents include:

- Importance of brushing twice daily
- Role of fluoride toothpaste
- Dangers of sugary snacks and beverages

- Techniques of tooth brushing
- Importance of periodic dental visits

b. Interactive Learning

Schools can use:

- Demonstrations by dental professionals
- Animated videos and digital modules
- Role plays and storytelling
- Activity-based worksheets

Interactive learning creates lasting impact and makes oral hygiene enjoyable for children.

2. Supervised Tooth-Brushing Programs

School-based supervised brushing programs have proven effective in countries like the Philippines and Thailand. Adopting similar programs in India can significantly reduce plaque accumulation and caries.

Key elements include:

- Daily brushing session in school
- Use of fluoride toothpaste
- Teachers or school nurses supervising
- Instruction on correct brushing technique (Modified Bass method)

These programs especially benefit children from low-income families who may lack resources at home.

3. Dental Screening and Referral Services

Periodic screening helps identify problems early.

Types of school-based screening:

- Annual dental check-up camps
- RBSK dentist visits
- Collaboration with dental colleges for outreach programs

Benefits:

- Early detection of caries
 - Monitoring of teeth eruption
 - Assessment of oral hygiene status
 - Referral for orthodontic issues
- Schools should maintain oral health records for each child.

4. Fluoride and Preventive Treatments

Preventive dental care reduces disease burden.

a. Fluoride Varnish Application

Fluoride varnish applied twice yearly reduces dental caries by 25–45%. Schools can collaborate with public health dentists for such programs.

b. Pit and Fissure Sealants

Children aged 6–12 years benefit from sealants on molars to prevent decay.

5. Nutrition and Dietary Interventions

Diet has a direct impact on oral health.

Schools should:

- Regulate sugary snacks sold in canteens
- Educate children about healthy alternatives
- Encourage consumption of fruits, vegetables, milk
- Involve parents to maintain consistent practices at home

The Mid-Day Meal Scheme can incorporate oral-friendly food planning.

6. Role of Teachers

Teachers significantly influence children's learning.

Teachers' responsibilities include:

- Demonstrating brushing techniques
- Reinforcing daily hygiene habits

- Identifying children with oral problems
- Encouraging participation in oral health activities
- Coordinating with parents and dental professionals

Teachers should receive training through workshops and modules.

7. Role of Parents and Community

School programs are more effective when supported by families.

Parents can be involved through:

- Awareness sessions
- Parent-teacher meetings
- Distribution of educational leaflets

Community support enhances sustainability.

8. Role of School Nurses and Health Workers

Where available, school nurses can:

- Conduct oral health assessments
- Maintain oral hygiene charts
- Provide first aid for dental injuries
- Support supervised brushing
- Coordinate referral services

9. Addressing Urban–Rural Disparities

Rural schools face unique challenges such as:

- Limited dental facilities
- Low awareness levels
- Poor sanitation

Solutions include mobile dental vans, tele-dentistry consultations, and NGO involvement.

Innovative Approaches for Indian Schools

1. Digital Oral Health Education

Using smart boards, videos, and interactive apps can make learning engaging.

2. School Oral Health Clubs

Clubs can organize activities such as quizzes, poster competitions, and community outreach.

3. Dental Health Ambassadors

Selected students can be trained to promote oral hygiene among peers.

4. Mobile Dental Clinics

Mobile units can visit remote schools, providing preventive and restorative care.

5. Integration with National Health Missions

Schools can leverage programs like:

- Ayushman Bharat School Health and Wellness Program
- RBSK
- National Oral Health Program

Case Studies and Best Practices

Case Study 1: Kerala Government Schools

Kerala implemented school-based dental health programs through partnerships with dental colleges. Free screenings and fluoride varnish applications led to a reduction in untreated caries.

Case Study 2: Tamil Nadu School Health Initiative

Integration of oral health in the School Health Program improved awareness among students. Teachers were trained in identifying dental problems.

International Example: Thailand's School Brushing Program

Thailand's national brushing program reduced caries by promoting daily supervised brushing in schools.

These models demonstrate the feasibility of nationwide initiatives.

Challenges in Implementing School-Based Oral Health Programs in India

1. Limited Financial Resources

Many schools, especially government schools, lack funds for dental supplies.

2. Insufficient Human Resources

Teachers are often burdened with academic responsibilities.

3. Low Awareness and Motivation

Parents and children may underestimate the importance of oral health.

4. Infrastructure Limitations

Water supply issues affect hygiene practices in some rural schools.

5. Inconsistent Policy Implementation

Lack of standardized national guidelines affects program uniformity.

Recommendations for Strengthening School-Based Oral Health Promotion

Policy-Level Recommendations

- Include oral health in the National Education Policy curriculum.
- Mandate annual school dental screening.
- Allocate dedicated funding for school oral health programs.

School-Level Recommendations

- Start supervised brushing programs.
- Conduct dental camps every 6 months.
- Restrict sale of sugary snacks in school premises.

Teacher Training

- Provide regular workshops on oral hygiene promotion.
- Supply teachers with educational materials.

Community Engagement

- Collaborate with dental colleges and hospitals.
- Involve parents in awareness activities.

Monitoring and Evaluation

- Maintain oral health records for children.
- Conduct periodic assessments to measure impact.

Conclusion

Schools play a vital role in shaping the oral health behaviors and outcomes of children in India. By integrating oral health education, providing preventive care, engaging parents, and fostering partnerships with dental professionals, schools can significantly reduce the prevalence of dental diseases among children. Strengthening school-based oral health strategies is essential for building a healthier generation and reducing the long-term burden on India's healthcare system. A multi-dimensional approach—combining education, prevention, community involvement, and policy support—can transform oral health outcomes for millions of Indian children.

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