SCHOOL DENTAL HEALTH PROGRAMME: A POTENTIAL UNTAPPED YET?

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ABSTRACT

School based dental health programmes have great potential of influencing oral behaviour of children during their developing and formative years. Gujarat is amongst the most prosperous provinces in the country, but deplorably, there is a shocking lack of awareness and understanding about the oral health of children. This lack of awareness, combined with the prevalence of myths and superstitions, have led to alarmingly high rates of dental decay, gum diseases, malaligned teeth and other such dental problems, which ultimately impact the general health of children. 'PARIVARTAN' is one such programme, which aims to improve the oral health of children, especially those from deprived socio-economic backgrounds.

Key words: School Dental Health Programme, Comprehensive treatment, Government initiative, Awareness, Myths and Superstitions

INTRODUCTION

Developing the human capital of nations especially the intellectual, social, mental, and physical abilities of children and adolescents is the fundamental indicator of the quality of life of a nation. Developing human capital is also critical for nations to enjoy political stability and economic growth.

Furthermore, education and health are inseparable. Children's health affects not only their cognitive performance in school, but also their ability to attend and stay in school over the years. Those young people who attend primary schools have better chances of survival. To ensure attendance of our children and to enhance their ability to learn, their general health and also dental health issues need to be addressed continuously.

Since children are often most important victims of dental diseases, programmes aimed at dental health of school children are of great importance in promoting oral health of a community. It should be cost effective in manpower, money and material and should produce observable results.

Although general health of children has over the years attain some amount of attention and concern from government as well as other nongovernmental organisations, but dental health has always been much neglected aspect.

AIMS AND OBJECTIVES

Keeping the above mentioned scenario in mind a study was designed:

1. To evaluate the prevalence of common dental problems in school children in Gandhinagar district.
2. To evaluate the awareness about dental problems & their treatment options.
3. To establish & evaluate the effectiveness of School Based Dental Health Programme for Children of low-socioeconomic status in and around Gandhinagar district.

MATERIALS AND METHODS

Department of Pedodontics and Preventive Dentistry Ahmedabad Dental College, Ranchhodpura (Taluka Santej) initiated a comprehensive school based dental health programme named 'PARIVARTAN' to bring about a change, aims to improve the oral health of children, especially those from deprived socio-economic backgrounds.

The project was essentially undertaken in the following steps:

1. Approaching the schools for participation
2. Conducting oral health education lectures
3. Conducting dental health inspection (screening for existing dental problems)

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4. Providing definitive comprehensive dental treatment free of cost
5. Follow-ups

**Approaching the schools for participation**
One of the first steps, it was initiated through five government funded schools around the college. Staff members and Post Graduate students from the Department contacted the school authorities and described the purpose & methodology of the programme clearly in detail. Local government authorities (district level officer) were approached to get proper permission to conduct such programme through various schools. By seeing the enthusiastic initial response of school further 8-9 schools are included in programme in similar manner.

**Conducting dental health education lectures**
Prior appointments for the presentation were obtained. Students were allocated into groups, not exceeding 40 - 50 children in a group. 30 min lectures were prepared on a range of topics, that is, brief introduction to dental anatomy, common oral diseases & their available treatment, oral hygiene instructions, dietary instructions, and importance of regular visits to the dentist. The local language should be used for the presentation because it is frequently spoken at home and understood by most children. Several visual aids (e.g., charts and models) were prepared and demonstrated during the presentations to keep the children interested.

**Conducting dental inspection (screening for existing dental problems)**
After completion of lecture screening was conducted for various existing problems like dental caries, gum diseases, malalignment of teeth, oral habits etc. All children were distributed pamphlets to create awareness & understanding at parental level. A system of dental inspection provides a base-line information upon which the treatment programme can be built.

**Benefits:**
a) It serves as a basis for school dental health instruction.
b) It builds a positive attitude in the child towards the dentist and dental care.
c) The child is motivated to seek adequate professional care.
d) Teachers, students, and dentists concerned with dental health may use the dental inspection as a fact finding experience.
e) Baseline and cumulative data for evaluation of the school dental health programme are made available.

f) Provides information as to the status of dental needs to plan a sound dental health programme.

**Providing definitive treatment**
Next step was to provide comprehensive & definitive dental treatment for the needy children. Transportation was arranged through the institution and children were brought. The participating schools were allotted individual days of the week for their turn to get the treatment. The children brought to the department are treated for various dental procedures like preventive dental care (scaling, fluoride and sealant application), Restorative dental care, interceptive orthodontics, habit breaking appliances, full mouth rehabilitation etc. For complicated procedures like extractions, Root Canal Treatment etc, prior consents were obtained from parents.

**Follow-ups**
Follow-up examinations are essential from the school side as well as from dentist. The children who completed the treatment are followed up at regular time interval and required procedures were conducted subsequently.
Since the participating children were from government funded schools, from low-socioeconomical status background, the programme is being essentially conducted completely free of cost. Thanks to the highly supportive management of the self financed institution which has been continuously providing essential infrastructure & logistical backing. Also the participating children are being distributed oral hygiene kit for their support and involvement.

**REVIEW OF LITERATURE**

**Historical Background**
Towards the end of the nineteenth century, William Fischer, a dentist of England was so concerned by the high caries experience and lack of treatment in the child population that he devoted much time campaigning for compulsory inspection and treatment of children in schools.

Rajab et al in Jorden, Hartono SW et al & Wierzbicka M et al 2002 had demonstrated that school-based OHE programme had a moderate positive effect on oral health knowledge and on habitual plaque levels and on the effectiveness of tooth brushing. The effects on caries levels and on self-reported behaviour were inconclusive.

Petersen PE et al & Vanobbergen J et al 2004 had applied the WHO Health Promoting Schools Project to primary school had positive effects on gingival
bleeding score and oral health behaviour of children, and on oral health knowledge and attitudes of mothers and teachers.

Tai BJ et al in China & Garbin et al in Brazil 2009 had demonstrated that oral health promotion in schoolchildren was an effective way to reduce new caries incidence, improve oral hygiene and establish positive oral health behavioural practices in the targeted schoolchildren.

School based dental Health Programmes in India

The beginning of school health service in India dates back to 1909, when for the first time medical examination of school children was carried out in Baroda city.

In 1946 the Bhore Committee reported that School Health Services were practically not existent in India and where they existed they were in an underdeveloped stage.

In 1953, the secondary Education committee emphasized the need for medical examination of students and school feeding programme.

In 1984-85 and in beginning of 21st century Government of Punjab has initiated school based dental health programme for the city of Chandigarh through PGI (Post Graduate Institute, Chandigarh).

Initiatives Possible to Achieve the Goals

Government Initiative: National government is the most effective source among all available sources. As it can provide sufficient funds, government based dental clinics in rural area and health care practitioners on contract basis. As mentioned by Peterson PE12 in Denmark oral health care for children and adolescents is provided by the Municipal Dental Service, the system provides health promotion, systematic prevention and curative care free of charge. The programme is essentially school-based and as a result of outreach activities, the participation rate is nearly 100%. Unfortunately in India there is no such initiative from government till now.

Govt of India initiative

In 1984-85 Government of Punjab through Central Government funding has initiated school based dental health programme for the city of Chandigarh through PGI (Post Graduate Institute, Chandigarh). Though it was a promising beginning but soon the efforts ran out of its initial stream.

The Govt. of India launched the 'Special School Health Check-up Programme' in the year 1996 in coordination of Department of Health & Family Welfare and Department of Education for school going children of Primary Schools with the following objectives:

• Detection of health related problems that are commonly occurring amongst primary school children.
• Screening of children for appropriate referral.
• Building of health awareness in the community through primary school children.
• Follow-up arrangements for detailed check-up and treatment of referral cases at Govt. Health Facilities.

It was a 6-days programme throughout the country and the Multi-Purpose Health Workers undertook primary screening. Referral services were provided at the Primary Health Centres. The programme was however discontinued after sometime.

Govt of Gujarat initiative

Govt. of Gujarat, Department of Health in collaboration with Education Department started innovative School Health Programme since 1997, wherein primary examination was done by medical officers of primary health care system.

According to data in 2006-07 total children were around 8832343 out of which 8434997 children were examined. Among them 5602 children were referred to the dental surgeon for various treatment modalities.

Efforts from Existing Dental Professionals: Well Established Dental professionals can provide dental health care service either on individual basis or through various central & state level organisations like IDA (Indian Dental Association), DPS (Dental Practitioners' Society) etc but these efforts have been small scale and none seem to have greatly contributed. In rural part of India especially in Gujarat there is lack of established dental health care person for children, and previous dental care programmes conducted were not well established or well planned.

Efforts from the parents: Nobody else can understand the requirement of children more than the parents. Parents can provide best dental health care for children if they are well aware of dental diseases. Unfortunately in developing countries like India people in urban & rural area are not well aware of the dental problems in children, moreover there is
prevalence of various myths and also lack sufficient money to provide the treatment.

**Efforts from Institutions:** Institutions like various NGOs, charitable trusts, and self-financed institutions can also provide sufficient funds, established dental set-ups, well trained dental health care professionals. But in Gujarat the only problem is lack of organisation and well planned treatment programmes. This seems to be the need for our and various states. Certain institutions on individual basis are carrying out preventive & curative dental programme for children with fair amount of success. In Gujarat lack of such organizations and thus no well planned treatment programmes.

**Present Scenario in Gujarat**
- Total population in Gujarat around 5,00,00,000
- Total child population 70,00,000
- Children in rural area 80%
- Children from low socioeconomical status 75%
- Children suffering from dental problems 85%
- Dental health institutions (Govt + Self finance) around 10
- Quality pediatric dental treatment available very few

From the above mentioned data it can be concluded that children in Gujarat are suffering from alarmingly high rates of dental decay, gum diseases, malaligned teeth and other such dental problems, which ultimately impact the general health of children. The reasons for these are mainly:
1. There is a shocking lack of awareness and understanding about the oral health of children combined with the prevalence of myths and superstitions.
2. There is a lack of sufficient number of pediatric dental health care person, hence quality pediatric dental treatment was not available.
3. Major part of the population comes from low socioeconomical status, so they cannot afford the dental treatment provided by established professionals.
4. Though efforts were started but lack of well planned school dental health programme which is the most effective way to reach the underprivileged child population have not served any purpose so far.

Thus it can be said that requirement of well established school dental health programme is a must in state of Gujarat which would be the best option to provide dental health education in children at mass level & simultaneously can provide treatment to these children who cannot afford the cost of quality dental treatment.

**What is a School Based Dental Health programme?**
A comprehensive school based dental health programme should,
- Be administratively sound
- Be available to all children
- Provide the facts about dentistry and dental care, especially about self care preventive procedures
- Aid in the development of favourable attitude toward dental health
- Provide screening methods for the early identification and referral pathology
- Ensure that all discerne pathology is expeditiously treated.

**Aim of the programme**
The aim of the dental health programme is, to develop oral health habits in the population so that teeth, mouth and jaws can be maintained and function for life (Peterson et al 1999)11. The objectives, therefore, include aspects of behaviour, systems of care and health. The means used to reach the goals are health promotion, prevention, regular recalls and dental treatment of oral disease. Great importance is also attached to individual needs and contact with key persons associated with the care of children.

**Important Elements of School Based Dental Health Programme:**
1. Improving school community relations
2. Conducting dental inspections
3. Conducting health education
4. Referral for dental care
5. Follow-up of dental inspection

**RESULTS AND DISCUSSION**
Gujarat is amongst the most prosperous provinces in the country, but deplorably, there is a shocking lack of awareness and understanding about the oral health of children. This lack of awareness, combined with the prevalence of myths and superstitions, have led to alarmingly high rates of dental decay, gum diseases, malaligned teeth and other such dental problems, which ultimately impact the general health of children.

The Department of Pedodontics and Preventive dentistry (concerned with dental health of children) of Ahmedabad Dental College, Ranchhodpura (Taluka Santej) sought to bring about a change in this sorry state of affairs through its path breaking 'PARIVARTAN' programme, which aims to improve the oral health of children, especially those from deprived socio-economic backgrounds.

In the programme around eight thousand children are taking part in the programme from which 60% are
Total Boys & Girls Screened

NAME OF THE SCHOOL | Boys | Girls
---|---|---
Bhadaj Primary School | 369 | 231
Nasmed School | 271 | 229
Racharda Primary School | 179 | 121
Vadsar Primary School | 137 | 113
Maharana Pratap High School | 190 | 160
Vastrapur Primary School | 150 | 100
Rannagar Primary School | 173 | 127
Ranchodpura Primary School | 123 | 77
Bhimasan Primary School | 448 | 352
Khatraj Primary School | 250 | 200
Andh Kanya Prakash Gruh (AKPG) | 0 | 170
H.L. Janta Vidyalay (Thor) | 578 | 422
Motibhoyn primary school | 623 | 577
Shilaj Primary School | 160 | 140
Lapkaman Primary School | 237 | 173
Dabhlia (Na) Primary School | 63 | 37
J.C. Dani vidyalay, Anatra Subna | 136 | 114
Santej Primary School | 178 | 122
**Total:** | **4265** | **3465**

Figure 1

Treatment required in students

NAME OF THE SCHOOL | NO OF STUDENTS | Students Require Treatment
---|---|---
Bhadaj Primary School | 600 | 495
Nasmed School | 400 | 345
Racharda Primary School | 300 | 232
Vadsar Primary School | 250 | 165
Maharana Pratap High School | 350 | 286
Vastrapur Primary School | 250 | 173
Rannagar Primary School | 300 | 234
Ranchodpura Primary School | 200 | 138
Bhimasan Primary School | 800 | 705
Khatraj Primary School | 450 | 355
Andh Kanya Prakash Gruh (AKPG) | 170 | 143
H.L. Janta Vidyalay (Thor) | 1100 | 867
Motibhoyn primary school | 1200 | 983
Shilaj Primary School | 300 | 211
Lapkaman Primary School | 400 | 321
Dabhlia (Na) Primary School | 110 | 87
J.C. Dani vidyalay, Anatra Subna | 250 | 182
Santej Primary School | 300 | 204
**Total:** | **7730** | **6126**

Figure 3

Children of various age group treated

Figure 2

Presence of Various Dental Diseases in Children

Figure 4
boys and 40% are girls (Figure 1). Around 14% children are below 5 years of age group, 59% are between 6-10 years and 27% are above 10 years (Figure 2). Among these children around 80% children are suffering from various dental problems (Figure 3). Most prevalent among them are gingival diseases and dental caries. But surprisingly high prevalence (around 55%) of betel nut chewing with or without tobacco was detected in primary school children (Figure 4). Such high prevalence in these particular age group becomes real part to worry. Subsequently certain modifications in the programme was done to incorporate more detailed evaluation in terms of examination and education for the school children regarding hazards of tobacco and betel nut chewing.

Awareness about oral health is around 25% in children below 5 years, 30% in children between 6-10 years, and 45% in children above 10 years. Awareness is 40% in parents & 75% in school teachers (Figure 5). Among these children around 12% were having deciduous dentition, 72% had mixed dentition, and 16% had permanent dentition (Figure 6). Almost all children who got the treated received preventive dental treatment (scaling, fluoride and sealant application), around 60% received restorative treatment, 33% undergone extraction and endodontic procedures. 24% received preventive & interceptive orthodontic treatment, 10% have undergone full mouth rehabilitation (Figure 7). Children having habit of tobacco chewing were counselled to quit their habits. The programme is still on its way still more and more children will be included in future to make them dentally healthy and responsible adults.

SUMMARY & CONCLUSION
'PARIVARTAN' started off with 5 schools to create awareness, the response was so enthusiastic that, to date, 13 schools including 7000 children have been covered. At present, 8 schools are taking part in programme with 5 in waiting with their consent for complete participation. Among school children awareness about oral health is about 37% on an average, 45% in parents & 75% in school teachers.

Primary schools have great potential for influencing oral health behaviour because Children spend considerable time in school and can be educated while their health habits are developing. Active involvement is the key to effective learning and classroom based oral health education, as well as regular group meetings with parents are recommended. The establishment of systematic oral health care programmes for children is urgently needed and school may serve as a platform for promotion of oral health habits in children and parents12.

The programme which began on a very small scale initially is presently showing good results and a lot of promise and potential for the future. “Journey of thousand miles begins with a single step” STILL A LONG WAY TO GO...

REFERENCES
1. School Health Check-up Programme in Gujarat, gujhealth.gov.in/health_programmes/pdf/state_sed/StateCheck.pdf