REVIEW ARTICLE

School dental health: Review and outlook

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ABSTRACT
Schools are great places to allow strong links between health and education. Therefore, supporting all schools to become "Oral Health Promoting Schools" can be very effective model for improving the overall health outcomes of students in developing countries. Thus, health education, including oral health, is in the curriculum for many primary schools as a "Health Promoting Schools" network that exists in few countries which provides a structure for an integrated approach to oral health[1,2].School health is an important branch of community health. Children are often the most important victims of dental diseases
Key words: school dental health, fluoride, oral health programs

DEFINITION
Program is an organized group of procedures designed to solve a defined problem.
Health Education is any combination of planned learning experiences designed to facilitate voluntary actions conducive to health.

HISTORY
19th century, William Fisher Campaigned for compulsory inspection and treatment of children in schools . In 1885 he published a paper entitled "Compulsory Attention to the Teeth of School Children".
Following this, British Dental Association appointed a committee to investigate child dental health. On July 23rd 1898, School Dentists Society was formed in London.
1909; The first time medical examination of school children was carried out in Baroda city
1946 Bhore Committee reported that School Health Services were practically nonexistent in India
1960, the Government of India constituted a School health Committee and it submitted its report in 1961.
1982, the Task Force constituted by the Government of India to accomplish the School Health Survey Project, submitted its report. Only 14 states had done some progress with their own health department budget .
Tokyo Declaration July 2001 in the I Asian Conference on Oral Health promotion for school children.;

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Ayutthaya Declaration 2003 at the II Asian Conference on Oral Health PROMOTION for school children .Banglore declaration 2005 in a WHO organised workshop to promote oral health through school based oral health programmes.[3]

ASPECTS OF A SCHOOL HEALTH SERVICE ARE

1. **Health Appraisal**
   Defined as the process of determining the total health status of the child through the means of health histories, observations ,screening tests and medical and dental examinations.
2. **Remedial measures and health counselling;** defined as “ the procedure by which nurse, teachers, physicians, guidance personnel, and others interpret to pupils and parents, the nature and significance of the health problem and aid them in formulating a plan of action which will lead to solution of the problem.”
3. **Healthful school environment.**
4. **Nutritional Services**
   The school should at least provide 1/3rd of the daily caloric requirement and about ½ of the total protein requirements of the child.
5. **Emergency care and first-aid**
6. **Mental health**
7. **Maintenance of school health records**
8. **School Health Education : Should cover the aspects of;**

PERSONAL HYGIENE, ENVIRONMENTAL HEALTH AND FAMILY LIFE

ADVANTAGES OF SCHOOL DENTAL HEALTH PROGRAMME

Children are available for treatment or preventive procedures. School clinics are less threatening than private clinics. A school dental program facilitates central education on dental subjects.

IMPORTANCE OF SCHOOL DENTAL HEALTH PROGRAMS

- An economical & powerful means of raising community health and health patterns can be more modified and altered at this age
- Environment is more conducive to learn and therefore dental health education and motivation shall be more effective[4].

GUIDELINES FOR A SUCCESSFUL PROGRAM

- **C-** CONSISTENT with the needs of the population served
- ADMINISTRATIVEL**Y** sound, requiring political, professional, educational and community planning and evaluation to ensure a source of oral health and teaching personnel, money, materials, and facilities necessary to support the objectives of the program**.**
- **P-** Effectively disease PREVENTIVE procedures or regimens in school and classroom activities as part of the oral health curriculum
- Oral examinations to IDENTIFY impending or actual pathology
- **T-** TREATMENT or referral services
- **E-** EDUCATION that enables individuals to make appropriate decisions and to practice optimal self-care
- **R-** RESEARCH AND EVALUATION to determine how successful a program has been and what changes are needed

OBJECTIVES OF SDHP

To help every school child appreciate the importance of a healthy mouth and appreciate the relationship of dental health to general health and appearance.

- To stimulate the development of resources to make dental care available to all children and youths and to stimulate dentists to perform adequate health services to children.

ELEMENTS OF SDHP

1. **Improving school-community relations**
   formation of a community dental health council or advisory committee.
   It should include broad representation.
2. **Conducting dental inspections**
   Dental inspection is an opportunity for individual health education
   Provides a base-line information upon which the treatment programme can be built.
3. **Conducting health education**
   There are 3 phases in the dental health education programme:
   Dental health instruction, Dental health services and dental treatment including preventive procedures
   Each phase of the programme can be carried to completion only when there is an interdependence with the other two phases.
4. **Performing specific programmes**

Tooth brushing programmes

Classroom-based fluoride programmes.Effective fluoride programmes;

Fluoride 'mouth-rinse' programme, Fluoride tablet programme and School Water Fluoridation

Nutrition as part of school preventive dentistry program

SUGAR DISCIPLINE CAN BE DONE

- In 1977 the ADA formed a Task Force for the Prohibition of Sales of Confections in Schools.
- In 1976, West Virginia was the first state to ban the sales of high sugar, low-nutrition items in school.

Sealant programme

1st, 2nd, 6th and 7th grades would be desirable grade levels to selectively intervene to prevent pit-and-fissure lesions.

1. **Referral for dental care**

Blanket Referral" Referral of the children to their family dentists.

In this programme, all children are given referral cards to take home and subsequently to the dentist, who sign the cards upon completion of the examination. The signed cards are then returned to the school dental nurse, or classroom teacher.

2. **Follow up of dental inspection**

The dental hygienist is a logical person to carry out such examinations.

3. **Referral for dental care**
4. **Follow-up of dental inspection**

VARIOUS SCHOOL DENTAL HEALTH PROGRAMMES

"LEARNING ABOUT YOUR ORAL HEALTH" A PREVENTION ORIENTED SCHOOL PROGRAMME

Developed by the ADA and their consultants in coordination with the 1971 ADA House of delegates and is presently available to school systems throughout the US.

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IMPLEMENTATION OF THE PROGRAM

- The programme is divided into 5 levels, each level having its own defined specific content.
- preschool (designed for children too young to read)
- level I (kindergarten through grade 3)
- level II (grades 4 through 6)
- level III (grades 7 through 9)
- level IV (grades 10 through 12)
- The core material for each of the 5 levels is self-contained in a teaching packet that allows the classroom teacher to adapt the presentation to the needs of the students.
- Each teaching packet includes:
  - A teacher's self-contained guide on "dental health facts" with a section on handicapped children.
  - A glossary of dental health terms.
  - A curriculum guide featuring content, goals, behavioural objectives and suggested activities
  - 5 lesson plans for the preschool level and 7 or more lesson plans for each of the other lessons.
  - 4 overhead transparencies
  - Twelve spirit masters
  - Methods and activities for parental involvement

TATTLETOOTH PROGRAM

- The idea for the program began in September 1973 with the organization by
  - the Texas Dental Association of an Interdisciplinary Advisory Council of Dental Health.
  - Brought together representatives of the;

1. Texas Education Agency,
2. Texas Department of Health Resources, and
3. a number of professional dental organization to develop a new dental health curriculum for Texas public school students from kindergarten to grade 12.

The programme was pilot tested in 1975

The field testing of the program in Spring 1976[5].

- Involved of more than 16,000 students from Kindergarten through High School and approximately 540 teachers across Texas.
- Results of single exposure to the programme revealed that;
  - Dental health knowledge was significantly increased at all grade levels
  - Plaque levels were decreased by approximately 15% in a randomly selected sample of 2,142 children
  - Over 80% of the teachers judged the programme to be helpful and effective, but felt the need for additional technical help in brushing and flossing .

The Tattletooth Program was re-evaluated in 1977 and 1978.

Programme philosophy-.

3 major goals:

- To conduct dental screening to obtain an estimate of the prevalence of dental problems and provide other base-rate data.
- To conduct an experimental study of dental awareness involving pre-and post-examination design
- To conduct a evaluation of the services provided by trained dental hygienists to determine whether or not the technical help previously requested by participating teachers was provided.

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The experimental dental evaluation indicated that the Tattletooth programme is effective in improving cleaning effectiveness and the teacher questionnaire responses supported the involvement of dental hygienists as a valuable component of the programme.
In 1989 bureau of dental health developed a new programme Tattle tooth **II**
Separate lessons for each grade
Three video tapes as part of teacher training programme
First – familiarizes teachers with lesson format and content
Second – brushing and flossing used for teacher training and also as an instruction unit to be used by the teacher
Third – provides additional background information
Texas dept of oral health employed 16 hygienists in 8 public health regions to instruct the teachers using video tapes. Teachers were encouraged to invite dental professionals to demonstrate brushing and flossing.
Topics covered in the curriculum-Correct brushing and flossing techniques
Awareness of the importance of safety and factual information relating to dental disease,its cause and preventive techniques.

PROGRAMME EVALUATION

In 1989, a statewide evaluation was done, 94% teachers – training had a + ve effect on childs dental health habits, 88.7%teachers – 45 minutes to 6 hours teaching – an indication that the curriculum was well received.
However results showed that teachers did not provide the students the skills of brushing and flossing. Greater effort needed to provide all classroom teachers with adequate quantity of toothbrush and floss to establish and maintain daily oral care[6]

NORTH CAROLINA STATEWIDE PREVENTIVE DENTAL HEALTH PROGRAMME

- In 1918, the first scientific paper addressing the need for a school dental health education programme was presented to the North Carolina Dental Society.
- In 1970, the North Carolina Dental Society passed resolutions advocating a strong preventive dental disease program embracing school and community fluoridation, fluoride treatments for school children and plaque control education.
- In 1973, Frank E. Law prepared a report for the North Carolina Dental Society that defined the extent of dental disease problem and resulted in the initiation of a 10-year program to reduce dental disease.
- Continuation and expansion of the North Carolina Preventive Dentistry Programme for Children (NCPDOC) was possible through incremental funding from the state legislature.
- PROGRAM OBJECTIVES
- Appropriate use of fluoride
- Health education in schools and communities
- Availability of public health dental staff in all counties

Projects included 19 videotapes for class room teachers in dental health and conducting a statewide oral health survey of North Carolina school children.
Programme evaluation
North Carolina has developed the curriculum “Frame work for dental health education”, class room and teacher videos and teacher guides for kindergarten through grade 6, to help teachers to be more effective in their classrooms.

PROGRAMME EVALUATION

1. 1968 the Happy Valley School in Caldwell County, North Carolina, where the school water supply had been fluoridated for 8 years, indicated a 34% reduction in DMFT.
2. 1976 survey was used to evaluate the long-range goals and objectives; Schoolchildren in Asheville, North Carolina, where the community's water supply had been fluoridated for 10 years, revealed a 53% reduction in DMFT for children who had had 10 years experience drinking fluoridated water.
3. 1984 survey on the use of sealants in public health dental programs demonstrated an 86% reduction rate after 4 years on permanent teeth.

SCHOOL HEALTH ADDITIONAL REFERRAL PROGRAMME (SHARP)

- Motivation through home visits. Instituted in Philadelphia.
- Purpose → motivate parents into initiating action for correction of defects in their children through effective utilization of community resources. The nurses made daytime visits to families in which the mothers were at home. Working parents were contacted by phone[7].

BRIGHT SMILES BRIGHT FUTURES

By Colgate Oral Pharmaceuticals

Oral health educational programme to teach children proper oral hyiene,diet and physical activity.the program enhances the childs self esteem while giving information .

Available materials include books,videos, posters, stickers, charts and guides for teachers and professionals administering the programme.dental professionals provide screening and referral of for additional treatment.

CREST FIRST GRADE ORAL HEALTH EDUCATIONAL PROGRAM

Since 1961 Proctor and Gamble provide curriculum resources to schools across America(crest toothbrushes and toothpastes) along with educational materials in the month of February.

Niederman proposes a simple effective bundle of preventive services defined as follows: screening; silver diamine fluoride treatment of all caries, pits, and fissures; fluoride varnish; oral hygiene instruction; and provision of a toothbrush and fluoride toothpaste. A dental hygienist or nurse could deliver these simple preventive measures[8] . In Denmark, municipal oral health services introduced in 1911, which includes disease prevention, comprehensive clinical care, and overcome activities to schools and families [9,10]Halonen study showed that dental education and individual tooth brushing demonstrations in the presence of parents can benefit the health behavior of younger children[11.]

Healthy behaviors and lifestyles that are established at a young age are more sustainable; thus, school children should be provided with skills that enable them to adopt a healthy lifestyle, make healthy decisions and learn to manage controversies[12] . Because of inadequacies of the existing oral health care services, there is a need to re-orientate the existing oral health care system to one that gives the highest priority to prevention and health promotion; and concentrates on less expensive technology to meet the dental treatment need of the population[13,14,15]. Schools with more frequent exposures to the program scored better than schools with fewer exposures.,[5,6,12,13,15]

DENTAL HEALTH PROGRAMMES IN PUNJAB

1989 - 1990 SURVEY By the state health department showed that 84.4% of the states population suffered from one or the other dental diseases. Lack of awareness among people about prophylactic, interceptive and curative treatment ..

Dental surgeon population ratio in urban area 1: 30000
In rural area 1:1.119 lacs
To provide the people ofthe state, the Punjab govt. Has launched intensive dental health care programme for school children,school teachers and general public which is first of its kind in the country.To reach the far flung areas of each district 1 mobile dental clinic van was provided to give interceptive and curative treatment to the people at their doorstep.
A post of district dental health officer for all the districts of the state was made.

INTENSIVE DENTAL HEALTH PROGRAM

Punjab is the only state in india to launch this program in the year 1989 – 90.
Under this one sub –divison is selected and schools are covered block by block. After covering the whole sub division , next subdivision is taken . three medical officers vist the school as per the detailed program that is circulated.in addition to providing a dental check up and trining to children, freshly prepared 2 % NaF mouth rinse is provided to arrest the progress of dental caries and this program is repeated every 6 months.

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