Oral Health

Good teeth without dentists
Kerstin M. Björnheden & W. Dandato Sithole

A pilot programme of preventive dental care is reported from Zimbabwe. The target groups were schoolchildren, who were approached through the school health system, and preschool children who were reached via community-based health workers. Educational materials and methods were worked out in close collaboration with local staff. It was considered essential to anchor the programme in established administrative structures.

Oral health seems to be deteriorating in developing countries, where the provision of comprehensive care by university-trained dentists is impossible for economic reasons. Programmes of preventive dental care are clearly necessary.

In Zimbabwe's Mashonaland East Province, which has a million inhabitants, a pilot programme of this kind was initiated in two areas during 1989, with the objective of promoting good oral health behaviour among children. Two main target groups were selected: schoolchildren, and preschool children with their parents. Among schoolchildren, attention was concentrated on pupils in grades one and six, corresponding to the ages of about 6 and 11–12 years respectively. Pupils in grade one, which was the earliest opportunity to reach children in the school system, were keen to learn. Those in grade six were selected since they were considered old enough to understand, use and teach messages on oral health, and it was obviously desirable to emphasize the importance of good habits before the pupils left primary school.

Established structures in the health care and educational systems were used so as to reduce the risk of verticality and increase the likelihood of creating a sustainable programme. In Zimbabwe every school is expected to have a teacher with special responsibility for promoting good health. It was possible to reach children through these and other teachers. Access to mothers and preschool children was gained through regular health education sessions during maternal and child health activities at health centres and through outreach activities; community-based health promoters were also of value in this connection.

The messages had to be appropriate, and sound methods of conveying them were essential.

Correspondence should be addressed to Kerstin Björnheden at Ingareas Gård 3895, 441 65 Alingsås, Sweden. Mr Sithole is Chief Government Dental Officer, Dental Centre, P. O. Box 8559, Causeway, Harare, Zimbabwe.
Schoolchildren

Initially, the heads and teachers in six schools were interviewed about educational activities relating to oral health. It emerged that very little was being done in this area, apparently because of a lack of knowledge and an absence of educational material.

Two pilot surveys were carried out on 123 schoolchildren, 63 of them in grade one and 60 in grade six. The first involved an oral examination by a person using probe and mirror in daylight; decayed, missing and filled teeth were recorded, and oral hygiene and gingivitis were noted as good, bad or intermediate. The second survey was based on a questionnaire dealing with knowledge, attitudes and practice on oral health; the children were interviewed in the local language, Shona.

The figures for decayed, missing and filled teeth were 1.2 for grade one and 0.9 for grade six (see box). In grade one over half the pupils and in grade six about a third had good oral hygiene without gingivitis. Half of the children in grade six had bad oral hygiene with gingivitis.

In general the interviewed children seemed to have rather good dietary habits. Their knowledge, however, was very poor: 70% of those in grade one and 54% of those in grade six thought soft drinks were good for the teeth, while a third of those in grade one thought sweets were good for the teeth and that fruit was bad for them. In answering the question “What causes tooth problems?” only 14% of children in grade one and 51% of those in grade six mentioned sugar and sweets. When asked “How could you avoid tooth problems” only 4% of the former group and 23% of the latter said that it was necessary to eat healthy food and avoid sugar. A substantial number of children were using chewing-sticks. Very few children used toothbrushes and toothpaste. The value of tooth-cleaning as a preventive method was known to a majority in grade six, but to only a few children in grade one. Many children had heard of toothache and almost half had experienced it.

Educational materials were designed with the help of teachers at the pilot schools (Fig. 1). Because the teachers lacked knowledge on oral health, a pamphlet with basic information on the subject was produced. A second pamphlet covered teaching methodology and was accompanied by posters for a flipchart, three for grades one to three and five for grades four to seven. Activities were suggested with a view to encouraging the children to participate (Fig. 2).

![DMFT index]

The mean DMFT index is used to measure the average level of dental caries in a community. It is obtained by counting the number of decayed (D), missing (M) due to caries, and filled (F) teeth in the mouth.
Teachers were given manila paper and paint so that their pupils could make their own posters. Bottles of soft drinks, packets of biscuits, and extracted teeth were issued for demonstration purposes. T-shirts bearing messages about good food and oral hygiene were given to all the teachers and to children who excelled during a campaign week. These children were told they had a special responsibility to disseminate the messages.

The experience gained during the pilot period led to the drawing up of the following programme.

- The teachers with special responsibility for health should receive basic instruction on oral health during a yearly seminar covering both theory and practical activities such as tooth-cleaning with chewing-sticks, role-playing and the checking of oral hygiene.
- The school health teachers should organize a campaign week each year during the second of the three terms, when pupils in grade six should be taught with the help of the pamphlet on teaching methodology.
The school health teachers should select students in grade six with a good understanding of the messages on oral health and should ask them to plan and conduct the teaching of pupils in grade one, under supervision.

On the final day of the campaign week each school should organize activities to which the parents are invited so that the messages can be brought to their notice.

After these activities, teachers should make regular check-ups on the children’s oral hygiene and diet.

After the annual activities the teachers should complete a report form and send it to the nurse in charge of the health centre to which the school is attached. In this way the activities can be monitored and any problems that arise can be tackled. The district or provincial level should give support if necessary.

**Preschool children and parents**

Talks on oral health were given to two groups of community-based health workers, namely village community workers and farm health workers. The knowledge of these people was initially very poor but they were keen to learn. A Shona translation of the pamphlet on basic knowledge was used, its content and suitability were discussed, and a modified version appropriate for preschool children and their parents was produced.

The programme hinged on popular education and close collaboration with professionals in this field.

It was decided that, during the training of community-based health workers, lasting six to eight weeks, lessons should be given on oral health and that the modified version of the pamphlet on basic knowledge should be issued. The training covers both theoretical and practical matters. The messages on oral health were to be passed by the community-based health workers to preschool children and their mothers during regular health promotion activities. At regular refresher courses for these workers, feedback was to be given and the messages on oral health were to be reinforced.

**Evaluation**

The teachers indicated that the pamphlet on basic knowledge was appropriate and easy to understand.

The activities suggested in the pamphlet on teaching methodology were well appreciated by both teachers and children. The teachers said that messages were put across effectively and that the children became actively involved. After the campaign the children were fully able to put into practice what they had learnt.

Initially, certain children did not wish to show their teeth to others, as suggested during the campaign, sometimes because they had bad teeth. After learning that tooth problems could be prevented, however, they lost their reluctance. This illustrated the importance of not blaming children for bad teeth and of encouraging them to take preventive action. Some teachers had difficulty in explaining about gum disease, evidently because the posters dealing with the subject were too small and not in colour.

The teachers noted with approval that the children were encouraged to look after their teeth by using things in their own environment and that they could make discoveries rather than being mere recipients of facts. The teachers also noted a significant increase in the number of children using chewing-sticks after the campaign.
It was suggested by the teachers that oral health should be covered in their training and that knowledge on this subject should be disseminated among the rest of the community.

The fact that children enjoyed themselves, were active and learnt from their experiences was undoubtedly a very important quality of the programme.

It is generally believed that oral health in developing countries is still fairly good, at least in rural areas, and the present study on schoolchildren supported this view. As contacts with the developed world increase, however, deterioration is likely. The survey in Zimbabwe showed that children's knowledge on how to prevent tooth problems was poor. Development tends to be accompanied by the abandonment of the traditional use of chewing-sticks, the introduction of inappropriate tooth-cleaning methods, and the consumption of sweets and other harmful foods. The preventive programme outlined above is a means of protecting children against these tendencies.

The programme hinged on popular education and close collaboration with professionals in this field. The messages had to be appropriate, and sound methods of conveying them were essential. Theory and practice, role-playing and competitions, incentives and positive reinforcement were necessary. The child-to-child method of teaching gave good results.

It was important to anchor the programme in existing structures from the outset. Sustainability was likely only if the programme was adopted as an integral part of the health care system. For this reason, while the programme was developed in close cooperation with the people to whom it was directed, it was also discussed continually with the dental author-

ities at the national level and with the Ministry of Health at the provincial and district levels.

The programme has been adopted by the Ministry of Health and pilot projects are being introduced in three districts of Mashonaland East Province. Implementation at this level will involve the following:

- The programme will be discussed and adopted by the district health executive.
- The district health team will introduce the programme to health workers, ensure that their knowledge of oral health improves, and provide each health centre with teaching material.
- Seminars will be used to introduce the programme to school health teachers, improve their knowledge of oral health, and provide them with teaching materials and methodology.
- At regular training sessions and refresher courses for farm health workers and village community workers their knowledge of oral health will be strengthened and they will be given the pamphlet on basic knowledge. Training will be provided by dental personnel.

There will be an expanded baseline survey on oral health and on knowledge, attitudes and practice relating to oral health.

At present the programme requires expatriate staff but it is intended that dental therapists will eventually replace them, supervised by the chief government dental officer and the provincial dental officers.

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