

*Original Article***The oral health park: a new experience in delivering preventive services in Iran**Shahrokh Gheisari RDH, DDS, MPH¹, Ali Golkari DDS, MSc, PhD²**Abstract**

BACKGROUND AND AIM: Effective and acceptable preventive dental services are hard to achieve in conjunction with treatment services. The Oral Health Office of Fars Province in Iran established the Oral Health Park in a deprived part of the city of Shiraz to attract families and school children to receive preventive services. No other treatment was provided in the setting. The aim of this study was to compare the number and the cost-efficiency of preventive dental services provided in such settings with those of other dental care settings in which preventive services are provided in conjunction with treatment services.

METHODS: The Oral Health Park and its activities were closely monitored for three years. Data on the number of provided services and their costs were compared with available data on other state settings.

RESULTS: From 2008 to 2011, more than 6000 children from about 3200 families used the Oral Health Park's free services. The number of preventive services provided in the Park was tens of times more than similar clinical settings in which both preventive and treatment services were provided. At the same time, the cost of each process provided in the Park was, in average, a quarter of a similar process in other clinics.

CONCLUSIONS: The oral health policy in developing countries such as Iran should move towards establishment of settings in which only preventive dental services are provided for a more effective and cost efficient approach.

KEY WORDS: Oral Health, Oral Health Services, Preventive Services, Shiraz, Iran

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Health promotion, worldwide, needs to tackle the main causes of diseases and concentrate efforts on preventive measures. Prevention is especially important in improving oral health indices, as most of them cannot be restored after oral diseases are established. Unfortunately, a normative health sector treatment approach is dominant in oral health care services worldwide that has proved unsuccessful in oral health promotion.¹ Therefore, a preventive approach to dental health services seems necessary. However, provision of preventive services in conjunction with treatment services has not been much success; especially when the importance of community involvement has been ignored. It is almost impossible to persuade a considerable proportion of the population in any society to pay for preventive dentistry.

However, providing free or subsidized preventive oral care has not been enough to attract a considerable proportion of the population. Many other measures are necessary to persuade people to look for preventive services.² The factors affecting local people's decision to use the services should be carefully studied and applied to both the health setting and the community.³ On the other hand, a professional preventive care needs to be followed by individuals' effort for effective oral hygiene and good dietary behaviours to show a positive outcome. Individuals, families, communities, schools, and other sectors should work collaboratively alongside the health care providers to make the provision of preventive measures effective. Reducing the risk factors of dental/oral diseases in the community, promoting people's knowledge

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and skills for self care, and creating a supportive environment are as important as providing easily accessible and affordable preventive services such as fluoride and fissure sealant therapies.¹

In Iran, oral health promotion programmes have been integrated into the general primary health care services since 1995. Oral hygiene education has been routinely provided to the public by health care auxiliaries. Fluoride mouth rinse has been provided to schools free of charge. Free oral hygiene aids, such as infant toothbrushes and children's stages toothpastes, have been given away. Considerable subsidies have been allocated to dental services of pre-school and primary school children in state clinics.⁴ However, unfortunately, there is no good evidence to show any of these measures has had any positive effect on oral health indices. Comparison of the results of two national surveys conducted in 1998 and 2004 illustrates no success in improving Iranian children's oral health status.⁵ That is while the trend of tooth decay was showing a significant decline in DMFT of 12-year-olds before the above-mentioned integration program.⁶

The Oral Health Office of Fars Province – situated in Shiraz, south of Iran – has studied the shortcomings in oral health promotion goals and problems in achieving these goals.⁷ A strategic plan to overcome such problems and shortcomings was developed and applied to a deprived part of the city of Shiraz under the name of "Oral Health Park". Below, the park and its way of delivering services are described. The project's achievements are presented in the results section. In the discussion, the cost efficiency of this project is compared with other projects aimed to deliver preventive dental services, and some recommendations are given for continuing the project and expanding it to other cities of a developing country like Iran.

The Oral Health Park

Shiraz, as the 4th most populated city of Iran, has 768 primary schools with more than 120,000 pupils.⁸ It is the centre of one of the

biggest provinces, with several towns, villages, and gipsy communities, which dependent on Shiraz health services, especially for secondary and tertiary care. The Oral Health Park was established with the aid of the city and local councils in one of the most deprived areas of Shiraz in 2008.

The building in which the dental services are provided is built in 260 cubic meters with pre-fabricated walls to make it as cheap as possible, without endangering public safety. Next to the main building is a playground designed to look like an attractive little theme park. The playing equipments are checked regularly for safety standards and children are supervised at all times. This complex is situated in the middle of an eleven-hectare green local park. The building itself has a welcome area, an examination and screening room with two dental chairs, two main rooms with six dental chairs and necessary equipments and materials for delivering preventive services, a hall with simple audio-visual equipments for delivering oral health education to children, their parents, and other target groups, sterilization and utility rooms, and toilets. Inside and outside of the building are decorated with colourful paintings and health messages. The cost of building and equipments (around 120,000 US dollars) was paid by the Shiraz University of Medical Sciences (Shiraz, Iran), who also pays for maintenance and current costs.

Services

Families with pre-school and primary school children are invited to the Oral Health Park. Local communities, mosques, schools, and general clinics are engaged in informing the families about the facilities. Parents can bring their children to the park individually, or can arrange for their children to be brought by their school/nursery as a group. A schematic view of the process taking place for attendees is shown in figure 1.

Children are welcomed, registered, and then sent to the playground. They are supervised at all times by trained staff. In turn, group of children are called to the presentation

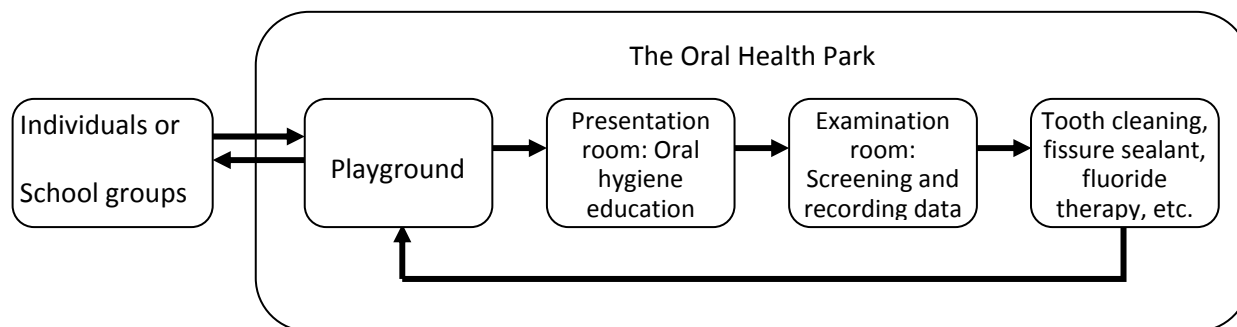


Figure 1: A schematic view of the routine admission process in the Oral Health Park

room, where models, video clips, posters, and flow charts, are used for oral hygiene education. Presentations are given in an attractive way and in a language that is based on the group's age. Children's favourite characters may be used. Next, they are guided to the examination room. They are told that they can return to the playground after cooperating on the dental chair. After screening and recording personal and oral health data, children are followed to the main practice rooms. Children receive tooth cleaning, fluoride therapy, and fissure sealant services based on their need. Appointments are given to those who need follow up visits, and those who need more complicated preventive services such as space maintenance. Referral letters are given to the parents of those who need dental treatment. Children are then sent to the playground again, until they are collected by their parents or school teacher.

Methods

The Oral Health Park and its activities were closely monitored for three years in a prospective study; 2008-2011. The numbers of services provided during each day were recorded. The average amount of material used for each procedure and its costs were measured and recorded carefully. The depreciation of equipments and the costs of running the park (personnel, utility, and etcetera) were also measured. The average share of the costs of the latter two for each kind of services was calculated based on the average time spent for each procedure. Data on the number of provided services in the Oral Health Park and their costs were compared with available data on other state

clinical settings in the city of Shiraz. All state clinics that were under the supervision of the Vice-Chancellor for Health of the Shiraz University of Medical Sciences and provided both preventive and treatment services were included in this study. Data on the services provided, personnel costs, the costs of material used, and the costs of running those centres were collected from the reports that were sent to the vice-chancellor for the same period of time. Again the average cost of each procedure done in this group of clinics was calculated based on the average time spent on each procedure.

Results

During the three years since the Oral Health Park was opened, more than 6000 children from about 3200 families used its free services. Most of the children belonged to very low-income families. For these families, the park has provided a unique chance that they could not afford otherwise. They will also suffer less for paying direct and indirect costs of dental treatments for their children in the future. The park has been successful in showing its advantages to the local communities. Today the park does not need active invitation or advertisement to attract families to its services anymore. The number of main preventive services provided by the Oral Health Park is given in Table 1. Apart from those three services mentioned in the Table 1, tens of children received space maintenance, preventive orthodontic treatments, and dietary advice. Children with special needs received specific oral hygiene instruction and were followed to make sure they can take care of their teeth and mouth.

Table 1. Number of preventive services provided by Oral Health Park in a year compared to average of other state oral health centres in Shiraz

	Number of teeth received fissure sealant	Number of people received fluoride therapy	Number of people received tooth cleaning services
Oral Health Park	2369	1694	587
Average of other oral health centres	162	32	38

Discussion

The Oral Health Park has provided a variety of preventive services to a large number of children. The number of main preventive services provided by the park and other state oral health services are compared in Table 1. The quantity of preventive services provided in the Oral Health Park was twenty times more than the average of other state settings of the city in the period of study. Each dental chair of the Oral Health Park provided ten times more services than other dental chairs allocated to preventive services in state clinics, and a few hundred times more than the average services provided by each dental chair of the city when private clinics were also taken into account.

The cost of providing preventive services was brought down to about one fourth of that of other health settings. Only necessary and basic equipments and materials were procured. No high technology equipments were needed. Depreciation of the equipments and the cost of their maintenance were negligible. A group of several dental auxiliaries, whom are cheap and fast to train and expect less salary, and one or two

dentists were used in the Oral Health Park. However, those working in other settings were all dentists as they were required to provide more complicated treatments in conjunction with preventive services. Dentists need more time and money to train and expect more income. In addition, dentists are not satisfied with providing preventive services. They are trained in environments in which the treatment approach is dominant, and therefore prefer to take the same approach in clinics.

Conclusion

Provision of preventive dental services in a specifically set environment which is separated from treatment services is both effective and cost-efficient. It is also more attractive for children and families than other clinics that they go to when they are sick or in pain. Both establishment and current costs of the Oral Health Park explained in this paper are affordable in most parts of a developing country such as Iran.

Conflict of Interest

Authors have no conflict of interest.

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