

SCHOOL-BASED ORAL HEALTH EDUCATION IN PAKISTAN- THE NEED AND POSSIBLE STRATEGIES

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ABSTRACT

In Pakistan school-based Oral Health Education (OHE) has so far been undertaken mainly in urban schools as a sporadic activity. This review paper argues that the dentists, though sufficient in number, cannot be relied upon for imparting OHE to school children because firstly they are mal-distributed and secondly OHE work in general is not considered to be very rewarding by dentists. It discusses strategies that rely on resource persons from within the school system like trained and motivated teachers; and peer group leaders need to be evaluated in order to have OHE programs that are school-based in the real sense, available to the majority of school children and carry a component of continuity. The school-based strategies for oral health promotion offers cost effective means of preventing and controlling oral diseases. However, the anticipated effect of economic, educational and socio-cultural diversity on the selection of oral health promotion strategies in different parts of the world necessitates that these strategies should be rigorously evaluated before implementation. The paper concludes that it is important to get an idea of the practicalities involved in implementing any of these strategies; which will help in identifying a school-based OHE strategy that is effective, sustainable, and available as well as acceptable to the majority of school children in Pakistan.

Key words: Oral Health Education; school-based strategies; teachers; peer group leader.

INTRODUCTION

Health has always been an elusive term to define but pragmatically it is envisaged as a resource which gives people the ability to improve their quality of life'. The oral health considered an integral part of general health² is imperative for improvement of quality of life.

Health education has been variously defined by different people with different ideologies'. Essentially health education is any combination of learning opportunities designed to facilitate voluntary adaptations of behavior that are conducive to healthy. Health education is just a component of health promotion that in addition to changes in personal life style also takes account of the social and economic conditions over

which the individual has little or no control. As such 'health promotion' is any combination of educational, organizational, economic, political and environmental support for behavior conducive to healthy. Its ultimate aim is to make the healthier choices the easier choices' while that of health education is to assist individuals, acting separately or collectively, to make informed decisions about matters affecting their personal health and that of others⁸. Health education, by raising awareness about health issues on a community basis, can also set the agenda for changes required to make the physical and social environment health friendly⁹, thus initiating the process of health promotion. There is some evidence to show that school health education programs can be a source of spread of health education

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messages beyond the boundary of the school". Health education in the media, at schools and in colleges creates a social climate whereby behavior change will receive a measure of social support". That is why health education has played a critical role in health promotion activities¹² and its value has been demonstrated in relation to school children".

Health education is mostly concerned with eradicating or modifying the risk factors involved in disease processes by targeting personal behavior. The most prevalent dental ailments, dental caries and chronic inflammatory form of periodontitis, are the chronic degenerative disorders having many interacting risk factors that are common to a number of other chronic diseases such as heart diseases, diabetes, cancer, peptic ulcer etc². Although the knowledge of these factors remains incomplete to-date, some of them like increased sugar consumption for dental caries; dental plaque (poor oral hygiene) for chronic inflammatory periodontitis; and smoking and chewing of tobacco and betel-nuts for oral cancer have been identified through numerous investigations and research". These risk factors are in turn affected by a large number of socio-economic, cultural and political factors². However, they are amenable to change to a certain extent by changes in personal life style and individual behavior. This is because the majority of preventive measures recommended by the dental profession require some degree of individual action whether it be in terms of dietary restrictions, oral hygiene practices at home, use of fluoride tooth paste or visiting a dentist regularly^{15,16}.

The change in personal life style can be facilitated by health education of the general public. The most fertile period in people's life during which they can be targeted by health education is childhood as during this period one is moldable, inquisitive and anxious to acquire new skills. The behavior adopted during childhood lasts for the lifetime of an individual¹⁷.

Schools provide excellent settings for oral health education (OHE) because they are permanent community structures that provide easy access to a large number of children, many of whom would not otherwise receive dental care at all's. They are the major socializing environment where people spend a considerable time in their life span¹⁹. The school setting enables the provision of health education to children in

their familiar environment. Here the potential of school teachers can be exploited for this sake²⁰. This may ensure a continuous reinforcement of dental health education messages. The presence of positive peer group norms about health choices can precipitate a supporting climate that in turn can make it easier for children to adopt a healthy behaviour²¹. The school health education with all these enabling and reinforcing factors seems to be a logical choice.

That is why school-based health education programs have been implemented in various parts of the world to address a variety of health and related social issues. Although quite a few of these programs have been reviewed, a detailed discussion about their effectiveness will go beyond the scope of this paper. However, most of them have been shown to produce a significant positive change in the preventive knowledge and the attitudes of the participants but the ones that significantly changed the preventive behaviour and the health status of people have been relatively few in number^{22,23}. These results apparently look disappointing but it has been argued that even the increase in preventive knowledge brought about by health education during the school age can be applied later in life when as adults children begin to develop symptoms of diseases. This is consistent with the concept of potential health behaviour".

Therefore despite the equivocal evidence of the effectiveness of school health education programs, the desirability and necessity of these programs dictates that they continue to be developed^{23,24}.

The case of school-based oral health education in Pakistan

Pakistan with a population of approximately 152.53 million is the 7th most populous country of the world²⁵. 67.5% of its total population lives in rural areas. There are 23 major urban centers having a population of 2 million or above. The rural area has about 4000 villages with a population of about five thousand or more. There are about 37 million school-age children (5-16 years old), out of which about 25 million are enrolled in schools. The total number of teachers in these schools is about 1 million²⁵.

Economically Pakistan is a developing country. Since 2002-03 the country's economy has mounted a

strong recovery (the real GDP grew by 8.4% in 2004-05)²⁵. However, due to a high inflation rate (9.3% in 2004-05) and a high growth rate (1.9 per year), its effects have not yet trickled down to the common man. The average per capita income is Rs. 44160.0 (U.S.\$ 736) with a sizeable proportion (30%) of the population living below poverty line. This is the reason why 3.5 million children are engaged in child labour in Pakistan²⁶. The total budget for health for the year 2004-05 was Rs. 38.0 billion (0.6% of GNP) with Rs. 11.0 billion for development and 27.0 billion for recurring expenses. No separate budget has ever been earmarked for oral health care.

As far as the overall disease burden in Pakistan is concerned, communicable diseases such as diarrhea, respiratory infections, tuberculosis and immunizable childhood diseases still account for the major proportion of sickness and death in Pakistan²⁶. The underlying problems that affect health are poverty; illiteracy; and inadequate water supplies and sanitation. The general health status of Pakistani children is presenting the most dismal situation in South Asia. 40% of children under 5 years of age are malnourished, 10-20% are suffering from vitamin A deficiency (child blindness is affecting 80,000 children), 600 children die of diarrhea every day, 2 million die of respiratory infections every year and 17% of all confirmed cases of tuberculosis are found in children less than 5 years of age.

A review of findings of some previous oral health surveys conducted in Pakistan reveals that the level of dental and oral disease remains static for more than two and a half decades ^{27-29,29}. The prevalence of dental caries is low (more than 50% of children between 12-15 years of age are caries free) but the severity of the disease keeps on increasing with increasing age. The World Health Organization's Path Finder Survey conducted in the year 2003 shows that the DMFT (Decayed, Missing and Filled Teeth) score of 12 year olds is 1.59, rising to 2.26 in 15 year olds, 8.73 in 35-45 years old age group and 18.39 in people with 65 + age²⁷. An alarming finding has been that above 90% of all teeth affected by caries are untreated.

The 2003 survey also reports that only 28% of 12 year olds in Pakistan are having healthy gums and less than half of the sextants (one sixth of a dental arch) score healthy in these children. 21% of these children

need professional scaling of teeth. This percentage rises to 29% for 15 year olds. About 7% of 35-44 years old people and 17% of those with 65+ age are at risk of losing teeth because of periodontal diseases (gum diseases), if they are not provided with complex periodontal treatment. About one third of the total population of the country requires professional scaling or complex periodontal surgery. This indicates an enormous amount of unmet dental treatment need that is higher for the most neglected rural population. In addition oral cancer forms the second most common cancer in Pakistan³⁰

The social and physical environment is also not very conducive to the dental and oral health of children as most of the risk factors for oral diseases are prevailing in the Pakistani society. The available evidence shows that there has been a consistent increase in the availability of sugar (30.5 Kg/person in 2003-04) in the country²⁵; though 90% of people clean their teeth yet a significant proportion is not able to control dental plaque³¹; 10% of people habitually chew betel-nuts³¹; 34% of men and 12.5% of women use tobacco regularly³¹; and 64% of all the sources of drinking water have low fluoride content (less than 0.3 parts per million)³².

The facilities providing health care to people include hospitals (at Provincial Head Quarters, Division, Tehsil and District level), rural health centers (RHCs), dispensaries, basic health units (BHUs) and maternity/child health centers (MCHs)³³. The distribution of these facilities is population based with one BHU for a population of 5000 to 10000 and a RHC for a population of 40000 to 100000. The dental cover starts at the RHC level. This means that oral health services for 105 million rural population is provided through 541 RHCs. Dental materials and drugs are not included in the essential drug list of RHCs which have 40% of dental equipment lying redundant³⁴. The record shows that more than 90% of the treatment offered in these centers is extraction of teeth while preventive dental services are virtually non-existent in the country²⁷.

Although there are 5761 dentists in the country³⁵, only 200 dentists are posted at RHCs as most of them are concentrated in the major urban centres³⁴. The overall dentist to population ratio is around 1: 25000 but in rural areas and urban slums this is much lower

(1:200,000). The ratio of dentists employed in the public health services to rural population is 1: 0.5 million. There is a very small number of dental auxiliaries (about 962 dental technicians /dental hygienists) employed in public health services in the whole of the country having no job description or career structure whatsoever. This means that the majority of people in the country especially the rural dwellers and those living in urban slums do not have access even to the most basic emergency oral care services²⁷.

A National Oral Health Plan does not exist in Pakistan so far. However one was proposed by the participants of a recent work-shop held under the auspices of World Health Organization (WHO)³³. The workshop was attended by 38 participants including the Provincial Directors of dental services of all four provinces, the Heads of dental institutions, the office bearers of Pakistan Dental Association and the senior most District Dental Officers in the country. The plan emphasized the integration of oral health care into primary health care activities and proposed a package of basic oral health care services. The plan considered the provision of four components of oral health care to people as essential including emergency oral care supported by an effective referral system, Atraumatic Restorative Treatment, appropriate fluoride exposure and OHE. The plan recommended that for basic dental care the initial target population would be school children from 5 to 16 years of age. These children will be provided with the needed dental care by a clinical team. In the meanwhile a health educator will provide a 30-minute, age-specific OHE session to children in each classroom.

DISCUSSION

Pakistan being a developing country is facing the problems of the scarcity of economic resources, rapid population growth and prevalent diseases with high mortality and morbidity rates. Therefore oral diseases have a relatively low priority than the other debilitating and deadly disorders in the allocation of resources. However the fact remains that there is a high level of unmet dental treatment need. The surveys conducted over the last three decades have shown that the existing dental care delivery system has not been successful in reducing the burden of oral diseases in the country. This is because it has been mainly concentrat-

ing on oral health care services that are curative in nature (with a total neglect of prevention), expensive and segregated (not integrated into general health services). They rely exclusively on university trained dentists, the majority of whom are not interested in setting their private practices or serving in public sector health facilities in rural areas and urban slums due to lack of financial and other incentives. The ones who are serving in public sector hospitals are not satisfied with their job as a substantial amount of equipment in these facilities is lying out of order.

Because of these 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. The most cost effective means of preventing and controlling oral diseases have to be used. The school-based strategies for oral health promotion offers such an option. That is why not only the majority of developed countries but a number of developing countries have introduced school-based oral health education^{36,37,38}.

In Pakistan school-based OHE has so far been undertaken mainly in urban schools as a sporadic activity. The dentists, though sufficient in number, cannot be relied upon for imparting OHE to school children because firstly they are mal-distributed and secondly OHE work in general is not considered to be very rewarding by dentists³⁹. In addition the long-term improvement in dental health requires repeated professional instructions, an approach that is not cost effective even if dental nurses are used to give these instructions⁴⁰. Therefore strategies that rely on resource persons from within the school system like trained and motivated teachers; and peer group leaders need to be evaluated in order to have OHE programs that are school-based in the real sense, available to the majority of school children and carry a component of continuity. School teachers with their pedagogical convincing power, endurance and exemplification can play a key role in the OHE of children". A school teacher that has been trained for this task may act as an all time available expert who is not an unfamiliar figure to children and has got a lot of contact time with his pupils. Each year new groups of children can benefit his expertise and at the same time reinforcement of

OHE messages can continue with the old ones. Setting aside these qualities the number of teachers that can participate in health promoting activities in developing countries is in itself of a public health significance²⁴. The potential of teachers has been extensively exploited to impart general as well as oral health education in different countries. In many instances the involvement of teachers proved feasible and effective. However shortage of time and heavy workload at schools have been cited as important factors that hinder the proficiency of teachers as health educators".

The other school-based resource person that can share the burden of OHE with teachers could be a peer of school children who has been trained for this task. This is especially relevant to adolescents or secondary school children whose preventive behaviour is greatly influenced by peer approval". Children even in early adolescence (11-12 years old) are considered mature enough to understand, use and teach messages on oral health".

Peer leaders, if appropriately trained to facilitate discussions about health related topics, may be more acceptable to their group than any one else as they are aware of their group norms, use the same language as their peers do and can serve as remarkable role models. Their use, not only in individual studies but in a number of reviews and meta analysis, has been shown to be effective and efficacious".

CONCLUSION AND RECOMMENDATION

Based on the above discussion it can be presumed that the teacher-led and peer-led strategies may have the potential to serve as possible substitutes to the dentist-led strategy of OHE for school children in Pakistan. However, the anticipated effect of economic, educational and socio-cultural diversity on the selection of oral health promotion strategies in different parts of the world necessitates that these strategies should be rigorously evaluated before implementation. This is also important to get an idea of the practicalities involved in implementing any of these strategies. This will help in identifying a school-based OHE strategy that is effective, sustainable, and available as well as acceptable to the majority of school children in Pakistan.

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