



ORAL HEALTH STATUS AMONG 3- TO 15-YEAR-OLD CHILDREN FROM THE PRIVATE SCHOOL WHICH FOLLOWED DIETARY ADVICE AND THE PRIVATE SCHOOL WHICH DID NOT FOLLOWS DIETARY ADVICE IN PUDUCHERRY, INDIA

Dental Science

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ABSTRACT

Background: The assessment of oral health status of children in private school which followed dietary advice and the private school which did not follow dietary advice provide data on the oral health status of children from different socio-economic background.

Aim: The aim of the following study is to assess and to compare the gingival status and caries experience between children from the private school which followed dietary advice and the private school which did not follow dietary advice in puducherry, INDIA

Subjects and Methods: Retrospective cohort study design was done. Exposure status was the school following dietary advice and unexposed was not following. Random sampling was employed to select the study participants. Oral hygiene status, gingival status and caries experience was assessed and compared among 3 to 15-year-old children from the private school which followed dietary advice and the private school which did not follow dietary advice. The examination was carried out by trained and calibrated investigators using a mouth mirror and explorer under natural daylight

Results: A total of 233 children (137 students from private school which did not follow dietary advice and 96 students from private school which followed dietary advice) were examined in the study. The mean decayed missing filled teeth were higher among private school children which did not follow dietary advice compared with private school which followed dietary advice children. A significantly higher number of children in the private school which did not follow dietary advice had poor oral hygiene status, moderate to severe gingivitis and caries experience.

Conclusion: The prevalence of oral diseases was relatively less among children from private schools which followed dietary advice in comparison with those from the private school which did not follow dietary advice.

KEYWORDS

INTRODUCTION

Food is necessary for the proper growth and development of children. It is important for the support of oral and physical health, the enhancement of the powers of resistance and continued renewal of the substances in the cells and tissues in children.

According to the World Health Organization, the diet has an important role in the prevention of oral diseases, including dental caries, dental erosion, defects in development, diseases of the oral mucosa and periodontal diseases. Dental caries eventually leads to tooth loss, which in turn impairs the chewing ability, causing avoidance of hard and fibrous foods, including fruits, vegetables and whole grains. An effective means of caries prevention is consumption of fluoridated water coupled with reduction in the intake of non-milk extrinsic sugar.

Oral health is an inseparable part of general health. In many industrialized countries, a significant improvement in oral health among children and adolescents, especially with respect to dental caries has been witnessed in the last 2 decades. This dramatic change in the trend may be attributed to the modification in the dietary habits, improved oral hygiene practices, effective use of fluorides, and establishment of school-based preventive programs. Conversely, the oral diseases are on the rise in many developing and underdeveloped countries.

India, a developing country, faces many challenges in rendering oral health needs. The majority of Indian population resides in rural areas. It is necessary to know the prevalence and distribution of oral health problems and understand the dental health practices that people follow. Such information is basic for formulation of oral health policies and appropriate programs. The appropriate policies and programs will

facilitate in improving awareness and knowledge of the general public about the preventive and promotive aspects of oral health as well as, to create the required services and train the necessary dental manpower to meet these needs. Lack of awareness about dental diseases has resulted in gross neglect of oral health.

Schools are an important place to advice healthy practices. Recently many schools are promoting healthy habits by following dietary advice and making parents mandatorily provide healthy snacks. School-based programmes to promote oral health can be expected to affect the behaviour of children and their parents in order to avoid further deterioration of oral health.

There is lack of organized school health programs in our country. The children in schools are relatively easily accessible, compared to any other population groups for any health promotion programs aimed at effecting the lifestyle changes. School health programs have proven effective in promoting health in many developed countries.

Most of the schools run by the private sector are situated in urban areas and these schools usually house children from middle, upper middle and upper socio-economic classes. It is important to identify the risk groups to best utilize the scant resources in the present circumstances. The assessment of oral health status of children in private school which followed dietary advice and private school which did not follow dietary advice may provide us baseline data on the oral health status of children from different socio-economic background. This helps in prioritizing the services to the high risk groups when policies and programs for school going children are implemented. The surveys reporting the oral health status of children in private school which followed dietary advice and private school which did not follow

dietary advice in puducherry, India. The present study assessed and compared the oral health status children between private school which followed dietary advice and private school which did not follow dietary advice in puducherry, India in an attempt to identify the high risk groups.

SUBJECTS AND METHODS

The study was retrospective cohort study design was followed

Selection of study participants

The selection of study participants was done using a combination of cluster and stratified random sampling technique. Initially, two stage cluster sampling was used for the selection of the required number of schools for the study. In the first stage, all the localities in puducherry were listed and this list was used for randomly choosing two different localities. Then, all the private schools in the selected localities were listed out. Each locality had around 2-3 private schools. private schools from these localities was again randomly selected.

The head masters of the selected secondary schools were apprised about the study protocol by the principle investigator and permission to carry out the study was obtained from the headmasters of these schools after clarifying all the queries raised by them. The list of 12- and 15-year-old children in the selected schools was obtained from the concerned headmasters and children in each of the age groups were given a unique identifier.

A stratified random sampling was used for selecting the male and female children from these schools. A verbal consent was obtained from each participant. The consent for conducting the clinical examination of children was obtained from the parents by means of a circular issued through the school system.

The examination of the selected school children was carried out by trained and calibrated examiners. The clinical examination of the children was done in the school premises under natural day light on a plastic chair using a mouth mirror and explorer. The autoclaved set of instruments was used for clinical oral examination of the children. The subjects were classified into two categories (caries free or caries prevalent) depending on the DMFT score.

Data were initially entered onto a data collection sheet. Data were then entered onto personal computer and statistical analysis was performed. The distribution of study participants based on gingival status and caries experience were expressed as frequencies and percentages.

RESULTS

A total of 233 children were examined in the present study. Among this, 137 were from private school which did not followed dietary advice and 96 students were from private school which followed dietary advice. There was no statistically significant difference in age and gender distribution of study participants

SCHOOL WHICH DID NOT FOLLOW DIETARY ADVICE		SCHOOL WHICH FOLLOWED DIETARY ADVICE	
MEAN AGE	7.45 Yrs	MEAN AGE	6.10 yrs
MALE	79	MALE	41
FEMALE	58	FEMALE	55

Gingival status

The prevalence of gingivitis among private school which followed dietary advice was 27.08% . The prevalence of gingivitis in children were from private school which did not follow dietary advice was 72.26%.

Comparison of prevalence of gingivitis between schools following dietary advice and not following advice

Gingivitis	Present	Absent	Total
No dietary advice*	99	38	137
Follow dietary advice	26	70	96

* Chi-square – 46.33 P-value<0.001 (Statistically significant)

Dental caries experience

The prevalence of dental caries in children were from private school which did not follow dietary advice was 53.28% and the prevalence of dental caries in children were from private school which followed dietary advice was 45.83%.

The prevalence of dental caries was higher among children in the

private school which did not follow dietary advice compared to those in private school which followed dietary advice in the present study. The mean number of untreated decayed teeth, teeth missing because of dental caries was significantly higher in children were from private school which did not follow dietary advice.

Comparison of mean dental caries between schools following dietary advice and not following advice

Group	N	Mean	Std. Deviation	Mean difference	P-value
No dietary advice	137	1.77	2.145	0.268	0.419*
Follow dietary advice	96	2.04	2.902		

not significant

Comparison of prevalence of dental caries between schools following dietary advice and not following advice

Dental caries	Present	Absent	Total
No dietary advice*	73	64	137
Follow dietary advice	44	52	96

* Chi-square – 1.254 P-value-0.132 (Not significant)

DISCUSSION

According to the World Health Organization, the diet has an important role in the prevention of oral diseases, including dental caries, dental erosion, defects in development, diseases of the oral mucosa and periodontal diseases.[1] Dental caries eventually leads to tooth loss, which in turn impairs the chewing ability, causing avoidance of hard and fibrous foods, including fruits, vegetables and whole grains.[1]

A healthy mouth enables an individual to speak, eat and socialize without the feeling of any discomfort or embarrassment. Schools provide a platform for the promotion of health and oral health not only for the students, but also for the staff, families, and members of the community as a whole. Although, oral health is an integral part of general health, it has not received any significant consideration in national health policies or in the planning of national health programs in many developing countries. The present study was undertaken to assess and compare the oral health status of children from private school which followed dietary advice and private school which did not follow dietary advice. The identification of high risk groups facilitate prioritizing the services to the most deserving especially when resources are sparse.

Healthy eating for children and students is achieved by providing a complete and varied diet, daily consumption of fruits and vegetables, adequate intake of milk and milk products and foods rich in protein, increased consumption of whole grains. Consumption of dairy products has a positive impact on food diets of children, especially in school.

Milk and milk products are a group of foods that must be a priority in child feeding. They are rich in nutritious protein, group A and B vitamins and easily assimilated calcium, crucial to dental health.

In the everyday diet of children from private school which did not following dietary advice, there were many risk foods of the 'junk food' type: chocolate, sweets, snickers, potato crisps, corn sticks. Such foods are appealing and have a pleasant taste (mostly sweet); they are packed in colourful shiny packages in the form of sticks, chocolate bars or sweet drinks in boxes. Their high sugar content causes a major concern as it tremendously raises the risk of caries.

Poor oral hygiene, lack of parental control and appropriate health knowledge, together with frequent consumption of cariogenic foods, in addition to social demographic characteristics are the main risk factors for the development of caries. (3,4)

Dental caries is a common, chronic disease of childhood.[1,2] What is most important for its prevention is controlled sugar intake. It has been shown that when the intake of free sugars is less than 15 kg per person per year, the level of dental caries is low.[1] Global recommendations encourage diets with a high content of fruits, vegetables and a low content of added sugars and fats for the protection of oral and general health.[1]

The risk of caries is highest if sugar confectionery is consumed most

frequently and is in a form that is retained in the mouth for a longer period of time. Guidelines in training parents and advising children include diets that avoid frequent consumption of juice or other sugar-containing products that cause tooth decay, and promote healthy eating habits consistent with the Food Guide Pyramid.[5-7]

Parents have a very important role in training and educating children in healthy eating habits. School-based programmes to promote oral health can be expected to affect the behaviour of children and their parents in order to avoid further deterioration of oral health.

Food consumption affects the state of the teeth, the most significant effect being the local effect of food containing free sugars on the tooth surface and development of caries and erosion. The frequency of intake of such foods should be limited to a maximum of four times a day.

food diet are one of the key factors in the prevention of dental caries and reducing the risk of its development. The specific recommendations for each child should be given after diagnosing any food deficiencies and/or excesses in their regular food regime, and alternatives should be provided.

There are reports that show no connection between the number of daily meals and the increase of caries frequency. However, there is correlation between proximal caries development and sweets consumption on a daily basis.(8)

A higher percentage of children from the private school which followed dietary advice had good oral hygiene status compared to children from private school which did not follow dietary advice in the present study. The oral hygiene practices and dental care utilization are better among children from private school which followed dietary advice.

The prevalence of gingivitis was higher among children in private school which did not follow dietary advice compared to those in private school which followed dietary advice in the present study. I concluded that the periodontal condition was relatively healthy among children from private school which followed dietary advice compared to those from private school which did not follow dietary advice.

The prevalence of dental caries in children were from private school which did not follow dietary advice was 53.28% and the prevalence of dental caries in children were from private school which followed dietary advice was 45.83%.

The prevalence of dental caries was higher among children in the private school which did not follow dietary advice compared to those in private school which followed dietary advice in the present study. The mean number of untreated decayed teeth, teeth missing because of dental caries was significantly higher in children were from private school which did not follow dietary advice.

The caries experience was higher among the children attending private school which did not follow dietary advice compared to private school which followed dietary advice. This difference was attributed to lack of awareness, affordability, or underutilization of dental care facilities by the children in the private school which did not follow dietary advice.

Rashkova et al. determine oral hygiene, carbohydrate meal, viscosity of saliva and its buffer capacity, the incidence of caries of their parents and the social status of the family as the highest risk factors for the development of caries in children studied in Bulgaria. For the management of dental caries is required an integrated approach, including a risk assessment of dental caries and correction of risk factors and recommendations for healthy behaviours, especially in terms of diet and oral hygiene by dentists.[9]

CONCLUSION

From the results of the present study, I conclude that the gingival health and dental caries status was poor among children were in private school which did not follow dietary advice compared to those in private school which followed dietary advice. Although, oral health care services needs to be offered for all children, it is very essential to offer these services to children from low socio-economic background on a priority basis. The oral health services specifically targeted toward high risk children is the need of the hour due to scant resources.

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