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## The Evaluation of The Effects of Socio -Demographic Factors on Oral And Dental Health: A Study on The Ages 6-12

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### Abstract

Dental caries are known to represent one of the most important causes of severe health problems both in children and in adolescents. Poor oral hygiene is closely associated with the child's feeding, sleeping, leaning and self-confidence. In this study, we aimed to identify the relationship of oral hygiene with the social life experienced by 6-12 years-old children, and to introduce preventive treatment to these children at an early stage. Study data were obtained from a questionnaire containing demographic questions and conducted on parents of 120 children, and also from results of oral finding following oral medical examinations performed by the dentist. Bacteria plaque index (BPI) which was determined following examination performed by the dentist was also considered as research data. According to results of this research, we are of the opinion that health authorities in Turkey should encourage preventive and implementation of development programs towards public and school-based mouth-dental health care, and that early preventive treatments measures acquired by children would greatly help to reduce state health expenditure on oral health. Furthermore, this study is considered as a preliminary investigation for a project to be carried out by the researchers.

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### 1. Introduction

Health is a broad concept, which affects the society in all respects. Health development would find life through creation and support for community awareness. In addition to their contribution in diseases which affect body health, dental caries together with poor oral hygiene, absent teeth and crooked and misaligned teeth, also affect an individual's social and the quality of life.

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Studies directed towards health development have demonstrated that a good general health state of a community is not possible in the absence of good oral-dental health. Many studies conducted in schools have emphasized the importance of education and awareness gained during childhood in order to acquire a healthy mouth. Knowledge gained by the children will increase proportionate to the education obtained and through family support and guidance. Individual awareness, which is very important for a future healthy society is known to be acquired only during childhood (Akıncı, 2008).

Preventive dentistry services started in the 1930s with the notion that oral-dental health in children of the 6-11 years-aged group, can be achieved through good health practices and ideas in issues such as tooth brushing, dietary control and cigarette smoking during childhood, which would be carried on later in life. This is a period when children are very much influenced by statements and behavioral patterns of their families, teachers or doctors, and started imitating them (Tulunoğlu, Bodur, Akal, 1999).

The prevalence of dental caries in children and young individuals of developed western countries such as Finland, Norway, and Germany, has been shown to decrease in the 1970s and 1980s (Tulunoğlu, Bodur, Akal, 1999; Gibson, Williams, 1999). This decrease has been associated with various factors including the use of fluoride-containing toothpastes, changes in sweet (candy) consumption habits, increase in socioeconomic status, spread in dentistry services, and developments in personal hygiene awareness (Isokangas, et al., 2000; Vehkalahti, Helminen, Rytomaa, 1990).

However, in developing countries and in countries where preventive dentistry services are not widespread like in Turkey, problems of oral and dental health pose severe economic and social problems (Özünç vd., 2000). In Turkey, efforts should be targeted at increasing studies directed towards the development and improvement of preventive dentistry services and to ensure that such services are equally accessed by everybody. Results show that these efforts would help increase quality of life and create steps towards the protection of overall body health. In light of this knowledge, it is suggested that this study would help in the development of preventive dentistry in Turkey where these services are considered to be inadequate. We hope that this study would help future policy making on the subject, the provision of employment, create an environment where everybody will profit from the services and help draw a Turkish map of oral-dental health.

## **2. Literature Review**

Various studies have been conducted, which investigate the relationship of oral the health of children and the socioeconomic conditions in which they find themselves.

In 2010, H. S. Mbawalla, J. R. Masalu, A. N. Åstrom, tried to explain the relationship of oral the health and socio-demographic factors among secondary school student in Arusha - Northern Tanzania. In the study, two variable cross-tabulations and Chi-square statistics were used, while odd ratios (OR) and 95% confidence intervals (CI) of multiple variable analyses were performed using the stepwise standardized logistic regression (SLR) analysis. At the end of the study, children from families with a lower socioeconomic status were reported to be unable to support dental care due to financial constraints; those with a lower level of education were reported to experience more dental impacts, have a poorer oral hygiene, have irregular tooth brushing habits, and other problems of poor teeth care. Moreover, children of families with a low socioeconomic status have been demonstrated to have a habit of more intake of sweet (soft) drinks when compared to those from well-off and more educated families (Hawa, 2011).

In the year 2010, C. Piovesan, J. L. F. Antunes, R. S. Guedes, and T. M. Ardenghi conducted a study in Santa Maria, Brazil on 792 schoolchildren aged 12 years entitled “The impact of socioeconomic and clinical factors on child oral health-related quality of life (COHRQoL)”. Participants were required to complete the Brazilian version

of the Child Perception Questionnaire (CPQ11-14), while their parents and guardians responded to questions on their socioeconomic status. Analyses were also conducted using information on the prevalence of caries, dental trauma and occlusions. Results of the study show that poor socioeconomic status and poor dental health has a negative effect on oral health. Children with poor socioeconomic status were also reported to have a very high rate of untreated dental caries and maxillary overjet. Poorer results were also reported for participants whose mothers had not completed primary school education and in those with a lower household income (Piovesan et al., 2010).

In the study conducted in 2007 by Ö. Tekir, T.Çalışkan, and entitled “Comparison of the attitude of parents towards mouth and dental health applications during the pre-school period between two different groups”, data was obtained from volunteer mothers of both groups through a face-to-face questionnaire, which examined their oral hygiene preferences. It was demonstrated that children in the 3-6 age group had more dental problems when compared with children of the health staff, and that no superiority existed in any of the groups over the other with regards maintaining good oral hygiene. Results of the study show that, in order to reduce problems of oral hygiene:

- Educational programs easily accessible by families should be organized in all sectors focusing on the promotion of good oral hygiene,
- When organizing educational programs, emphasis should be placed in the supervisory role played by parents when helping children gain good oral hygiene habits (Tekir, Çalışkan, 2007).

In the year 2005, Ü. Ayrancı conducted a study in a primary school, in the province of Eskisehir entitled “Investigation of Dental Caries in a Group of Primary School Students”. Results of the study pointed out the high rate of negligence on oral health in schoolchildren (Ayrancı, 2005).

In a study conducted in 2001 by J. A. Gillcrist, D. E. Brumley, J. U. Blackford, and entitled “Community Socioeconomic Status and Children’s Dental Health”, 17,256 children of public health dentistry personnel aged between 5-11 years and residing in 62 Tennessee communities in the United States of America, participated in a health survey between November 1996 and May 1997. Moreover, investigations were made on students from nursery and primary public schools, right up to the six grade concerning the fluoride nature of water systems in the areas, the rural or urban nature of the community, and differences in low-middle-higher income state of the regions. The study demonstrated that children from low income communities had a poorer dental health, had a higher rate of dental caries, had a greater need for dental treatment, a higher prevalence of trauma, and also a high prevalence of dental spacing, when compared with those from high income communities. This study suggested that dental health shows changes between communities (Gillcrist, Brumley, Blackford, 2001).

Ö. Tulunoğlu, H.Bodur, N. Akal conducted a study in 1999, entitled “Evaluation of the Impact of Family Education Level on the Oral and Dental Health Practices of Preschool Children”, and determined DMFS scores following examination of the mouth cavity of 315 children aged between 3-5 years. A questionnaire was conducted where parents were asked to answer questions concerning their children’s feeding conditions, practices of oral hygiene, and knowledge level, including questions about their own personal behaviors. Results of the study demonstrated that there was a statistical difference in the frequency of children snacking habits, regular tooth brushing practices, and of parents’ level of education (Tulunoğlu, Bodur, Akal, 1999).

In the study conducted by K. Güngör, G. Tüter, B. Bal in 1999 and entitled “Evaluation of the Relationship Between Level of Education and Oral Health”, 950 patients aged between 15-67 years old who visited the Oral Diagnosis and Radiology Clinic of Gazi University Dentistry Faculty were randomly selected and enrolled. Dental caries, fillings, prosthetic restoration history, lost teeth, and records of tooth brushing habits of every patient was registered and the effect of their educational level on clinical data was evaluated. It was demonstrated that the rate tooth brushing habits increased with increased level of education, and that this was associated with a better level of oral health status (Güngör, Tüter, Bal, 1999).

### 3. Methodology

#### 3.1. Research Goal

The aim of this study was identify the relationship of the oral hygiene of 6-12 years-old school children, with the socio-demographic characteristics of their parents.

#### 3.2. Sample and Data Collection

The study was carried out on 120 patients who accepted to participate among patients who visited a private dentist clinic in the Yenibosna neighborhood of Bahçelievler, Istanbul, at certain hours during a one-month period. Children without poor mental and physical conditions were included in the study. A face-to-face questionnaire was carried out to evaluate socio-demographic structure and oral care practices. The questionnaire consisted of questions in two sections. In section one, parents were asked to answer questions to determine their knowledge of oral-dental health. In section two, the oral hygiene value of the child was evaluated through the dentist's examination, using the bacterial plaque index method.

Measurement of bacterial plaque was performed using the Silness-löe plaque index. With this plaque index system, the bacterial plaque in direct contact with the marginal gingiva and plaque thickness are evaluated. Four surfaces of the teeth, the mesial, distal, lingual, buccal surfaces were taken into consideration. Teeth are not stained during this indexing system. Values obtained are placed in the oral chart. The total index value obtained is divided into the number of surfaces which were evaluated, resulting in the Silness-löe bacterial plaque (Tuncer, 1994).

Data obtained were evaluated using the SPSS program, an electronic data analyzing system. The t-test and Chi-square tests, and the ANOVA and Kruskal-Wallis tests were used for statistical analysis. Differences with a  $p < 0.05$  value were considered as statistically significant.

#### 3.3. Analyses and Results

Of the 120 participants who were enrolled in the study, 50.8% were girls, 37.5% were within the 6-7 years age range, 36.7% were within the 10-12 years age range, while 25.8% of them were within the 8-9 years age range. Of the mother of children who participated in the study, 35.1% were jobless, 25.8% were laborers, 23.3% were free-lance workers, whereas 15.8% were working as civil servants. On the other hand, 38.3% of the father of children who participated in the study were laborers, 24.2% were free-lance workers, 24.2% were jobless, whereas 13.3% were working as civil servants. Investigation of the income status of the children's families demonstrated that 35% earned between 2001-3000TL, 32.5% earned between 0-2000TL whereas 32.5% had an income of more than 3000TL. 74.2% of families of participants had social insurance. Of the families of participants, 39.2% had two children, 31.7% had more than three children, whereas 29.2% had only one child. Evaluation of mother's educational status demonstrated that 59.2% were primary school graduates, 21.7% were university graduates, whereas 19.2% were high school graduates. On the other hand, father's educational status demonstrated that 51.7% were primary school graduates, 30.8% were high school graduates, whereas 17.5% were university graduates.

##### 3.3.1. Level of Bacterial Plaque and Socio-Demographic Characteristics

In the evaluation of bacterial plaque levels by the dentist, levels 3-5 were considered as poor, levels less than 2-3 as moderate and levels less than 0-2 were considered as good. Distribution of socio-demographic characteristics of the children's families and their bacterial plaque levels are shown in Table1.

Table 1: Level of Bacterial Plaque and Socio-Demographic Characteristics

Oral Hygiene		Between 3-5		Less Than 2-3		Less Than 0-2		p
		Poor		Moderate		Good		
		f	%	f	%	f	%	
Sex of Child	Girl	15	60	22	37.93	24	64.86	<b>0.022</b>
	Boy	10	40	36	62.07	13	35.14	
Age of Child	6-7 Years	8	32	18	31.04	19	51.35	0.124
	8-9 Years	6	24	20	34.48	5	13.51	
	10-12 Years	11	44	20	34.48	13	35.14	
Mother's Profession	Laborer	13	52	12	20.69	6	16.21	<b>0.000</b>
	Civil Servant	0	0	5	8.62	14	37.84	
	Free Lance Worker	1	4	14	24.14	13	35.14	
	Jobless	11	44	27	46.55	4	10.81	
Father's Profession	Laborer	17	68	22	37.93	7	18.92	<b>0.000</b>
	Civil Servant	0	0	5	8.62	11	29.73	
	Free Lance Worker	2	8	17	29.31	10	27.03	
	Jobless	6	24	14	24.14	9	24.32	
Total family income	0-2000 TL	20	80	16	27.58	3	8.11	<b>0.000</b>
	2001-3000 TL	4	16	28	48.28	10	27.03	
	3000 TL	1	4	14	24.14	24	64.86	
Social Insurance	Available	16	64	38	65.52	35	94.59	<b>0.003</b>
	Unavailable	9	36	20	34.48	2	5.41	
Number of family members	3 Persons	4	16	12	20.69	16	43.24	<b>0.009</b>
	4 Persons	7	28	21	36.21	15	40.54	
	≥5 Persons	14	56	25	43.10	6	16.22	
Number of children in the family	1 Child	5	20	15	25.86	15	40.54	0.135
	2 Children	8	32	24	41.38	15	40.54	
	3+ Children	12	48	19	32.76	7	18.92	
Mother's level of education	Primary School	24	96	37	63.79	10	27.03	<b>0.000</b>
	High School	0	0	14	24.14	9	24.32	
	University	1	4	7	12.07	18	48.65	
Father's level of education	Primary School	20	80	34	58.62	8	21.62	<b>0.000</b>
	High School	4	16	20	34.48	13	35.14	
	University	1	4	4	6.90	16	43.24	
Who takes care of your child?	Parents	15	60	31	53.45	13	35.14	<b>0.021</b>
	Family Relatives	9	36	23	39.65	14	37.84	
	Nanny	1	4	4	6.90	10	27.02	
Is the child's meals organized?	YES	7	28	32	55.2	27	73	<b>0.002</b>
	NO	18	72	26	44.8	10	27	
What school does	State School	25	100	52	89.66	19	51.35	<b>0.000</b>

child attends?	Private School	0	0	6	10.34	18	48.65	
Was feeding bottle used on child?	YES	15	60	34	58.62	21	56.76	0.966
	NO	10	40	24	41.38	16	43.24	
Does the child regularly visit the dentist?	Never	20	80	21	36.21	8	21.62	0.000
	1-2 Times	5	20	30	51.72	17	45.95	
	Regularly	0	0	7	12.07	12	32.43	
Is the child afraid of the dentist?	YES	20	80	33	56.90	18	48.65	0.043
	NO	5	20	25	43.10	19	51.35	
Does the child regularly brush the teeth?	Never	18	72	16	27.59	5	13.51	0.000
	Once Every 2 Days or less	6	24	28	48.28	10	27.03	
	Once a day or More	1	4	14	24.13	22	59.46	
Does the mother regularly brush her teeth?	Never	16	64	7	12.07	3	8.11	0.000
	1-3 Times Per Week	8	32	38	65.52	11	29.73	
	1+ Daily	1	4	13	22.41	23	62.16	
Does the father regularly brush his teeth?	Never	16	64	14	24.14	3	8.11	0.000
	1-3 Times Per Week	8	32	30	51.72	11	29.73	
	1+ Daily	1	4	14	24.14	23	62.16	
Should caries on milk teeth be treated?	Should not be treated	4	16	3	5.17	4	10.81	0.001
	No idea	14	56	25	43.11	4	10.81	
	Should be treated	7	28	30	51.72	29	78.38	
Flossing is important in oral hygiene	WRONG	2	8	2	3.45	0	0	0.000
	No idea	22	88	32	55.17	11	29.73	
	TRUE	1	4	24	41.38	26	70.27	
Is there any misaligned teeth?	YES	24	96	35	60.30	20	54.10	0.001
	NO	1	4	23	39.70	17	45.90	
Is there any missing tooth?	YES	18	72	39	67.24	5	13.51	0.000
	NO	7	28	19	32.76	32	86.49	
Is there any dental caries?	YES	25	100	45	77.59	16	43.24	0.000
	NO	0	0	13	22.41	21	56.76	
Is there any treated teeth?	YES	2	8	17	29.31	21	56.76	0.000
	NO	23	92	41	70.69	16	43.24	
Does the patient have a personal toothbrush?	YES	9	36	31	53.45	33	89.19	0.000
	NO	16	64	27	46.55	4	10.81	

According to Table 1, there was no statistical difference in the bacterial plaque values with respect to the child's

age, number of children in the family, and whether the child used a feeding bottle.

### 3.3.2. Analysis of the relationship between bacterial plaque level and demographic characteristics

The bacterial plaque levels obtained from the Silness-löe bacterial plaque index of the participating children that was determined by the dentist were examined using the hypothesis in Table 2. In this analysis, 12 hypothesis, including the habit of visiting the dentist, tooth brushing practices of the parents, and treatment of milk teeth caries, were found to have a statistically significant difference, according to the 0.05 significant value. Results of the evaluation demonstrated that there was a significant difference, with respect to bacterial plaque level, mother's profession, total family income, social insurance status of family, number of family members, number of children in the family, mother's educational status, person taking care of the child, school attended by the child, regular parents' visits to the dentist and tooth brushing practices of parents.

Table 2: Analysis of the relationship between bacterial plaque level and demographic characteristics

Hypotheses	Analysis Performed	Test Statistics	Decision
H <sub>1</sub> : Bacterial plaque level; differs according to mother's profession.	Kruskal Wallis	Chi Square:29,294 df=3 sig.=0,000	Accepted
H <sub>2</sub> : Bacterial plaque level; differs according to the total income value of the family.	Anova	F=27,738 df=2 sig.=0,000	Accepted
H <sub>3</sub> : Bacterial plaque level; differs according to the social insurance condition.	Independent t test	t=3,460 df=118 sig=,001	Accepted
H <sub>4</sub> : Bacterial plaque level; differs according to the number of persons in the family.	Anova	F=6,445 sig=0,002 df=2	Accepted
H <sub>5</sub> : Bacterial plaque level; differs according to the number of children in the family.	Anova	F=4,166 df=2 sig=0,018	Accepted
H <sub>6</sub> : Bacterial plaque level; differs according to the mother's educational status.	Kruskal Wallis	Chi-Square=29,214 df=2 Asympsig=,000	Accepted
H <sub>7</sub> : Bacterial plaque level; differs according to who takes care of the child.	Kruskal Wallis	Chi-Square=1,530 df=1 Asympsig=,216	Accepted
H <sub>8</sub> : Bacterial plaque level; differs according to the school attended by the child.	Independent t test	t=7,659 df=118 sig=,000	Accepted
H <sub>9</sub> : Bacterial plaque level; differs according to whether the child pays regular control visits the dentist.	Kruskal Wallis	Chi- Square=31,986 df=2 Asympsig=,000	Accepted
H <sub>10</sub> : Bacterial plaque level; differs according to whether the mother regularly brushes her teeth.	Kruskal Wallis	Chi- Square=41,630 df=2	Accepted

		Asympsig=,000	
H <sub>11</sub> : Bacterial plaque level; differs according to treatment of caries on milk teeth.	Independent t test	t=1,725 df=75 sig=0,111	Accepted
H <sub>12</sub> : Bacterial plaque level; differs according to whether the father regularly brushes his teeth.	Anova	F=26,587 df=2 sig=0,000	Accepted

#### 4. Conclusion

The “Analysis of Oral Dental Health Status in Turkey” survey of 1988, supported by WHO is an important source of information on this subject since it included a different sectors and different age groups of the society. According to this report, the dental caries-free rate in 6-year-old children was 16%, in those of the 12-years-old age group who are considered to maintain constant oral dental series the rate was 19%, whereas it was 3% in those between 30-35 years. Results of the same study also demonstrated that, the DMFT index value, a criterion which determines oral-dental health was 3.16 for 12-year-old individuals, 4.30 for the 15-19 years age group, 7.0 for the 20-24 years age group, and 12.24 for the 35-44 years age group (Saydam, Oktay, Möller, 1990). In the study, the dental caries-free rate was 18%, whereas the DMFT index was determined as 3.33. However, WHO’s DMFT index target value for oral-dental health of the 21st century was set at 1.5, for 12-year-old children. It can hence be observed that the target was not attained (Saydam, Oktay, Möller, 1990). Results of our study demonstrated that, 70.8% of children examined had dental caries, 32.55% have received treatment, 55% had missing teeth, while 73% had personal toothbrushes.

In studies conducted in Turkey between 1983 and 1998 to identify the prevalence rate of dental caries, the 6-12 year age group was shown to have a rate of 45.9-99%. On the other hand, the 2005 study demonstrated that 83.5% of individuals had at least one dental caries (Ayranç, 2005). In United States of America, children aged between 2-5 years have a dental caries rate of 19%, while 5-9 years old children have a rate of 52%, compared to 43.8% in Brazil (Edelstein, 1998; Pattussi, Marcenes, Croucher, 2001). In the same age group, the rate is found to be 88% in Turkey (Dişhekimi, 2005). There are many factors, which affect oral dental health. The most important is regular brushing of teeth and the education obtained on this subject. Among children who participated in our study, 30% brushed their teeth at least once per day, whereas 70% never brushed their teeth or had irregular brushing habits. Seventy-two percent of children with poor oral hygiene do not brush their teeth.

In a survey involving final year high school students in three schools in the province of Ankara, the rate of brushing teeth twice per day was found to be 59.1%, whereas the rate of having knowledge of the correct brushing technique was reported as 38% (Şimşek, 2004). Acquiring the habit of tooth brushing is suggested to be also associated with the socioeconomic status of the family (Amarente, Raadal, Espelid, 1998). Effects of socioeconomic status on oral health have been documented (Haznedaroğlu, 2001). In the study conducted in the region of Erzurum by Oktay in 1975, periodontal diseases and oral hygiene were found to be associated with socioeconomic status (Oktay, 1975). Astrom and Jakobsen (1996) suggested that attitudes towards dental hygiene was a model of parental habits acquired through imitation by children. The same authors demonstrated that it is important for the family to be a model for positive behavioral patterns such as tooth brushing, and that intense and prolonged contact of the child with the family was important for this model; they also suggested that parental behaviors concerning dental health directly affected the child’s behavior right into adolescence (Astrom, Jakobsen, 1998). Results of our study also demonstrated that the child’s bacterial plaque level was poor at 64% and good at 8.11%, when the mother did not regularly brush her teeth.



Ayrancı (2005) conducted a study on children aged between 6-9 years, and demonstrated that the presence of dental caries increased with increased number of siblings; the presence of caries was found to be at the rate of 78.6% for children with a single sibling, 84.3% for children with two siblings, and 85.7% for children with three or more siblings (Ayrancı, 2005). In the study by Çoğulu et al (2009) conducted on 3-6 year-old children, it was demonstrated that DMFT:  $7.19 \pm 1.83$ , in the presence of dental caries; however, DMFT:  $6.01 \pm 1.26$  in the absence of dental caries, with respect to the number of family members (Çoğulu, Menderes, Ersin, 2009). Our study demonstrated that the rate of dental caries was 27.5% in cases with three family members, 34.2% in cases with four family members, and 38.3% in cases with five or more family members. Poor oral hygiene was reported at a rate 56% in families with five or more members. There has been a significant decrease in the incidence and severity of dental caries within the past twenty years, of children from many developed countries. This decrease has been attributed mostly to fluoride, but also to increased standard of living, education on dental health of the community and increased community awareness of the subject. In order for parents to have the right approach to children's dental health, they have to acquire sufficient knowledge on basic issues like feeding, preventive measures, and the maintenance of oral hygiene (Gibson, Williams, 1999).

Results of the study conducted on 6-12 year-old children demonstrated that parents' educational level, income or socioeconomic status, regular visits to the dentist, school attended by the child (which is also related to the income status), presence or absence of tooth brushing habits of parents, or briefly socio-demographic level have important effects on the level of oral bacterial plaque.

Hence, the following proposals can be made:

- More education should be given in schools to children directed towards protective measures on oral hygiene.
- Dental examinations should be provided to all primary school children by dentists in the various regions, through educational programs sponsored by both public and private institutions. Results of such dental examinations should be evaluated.
- Education on oral hygiene provided by teachers of the subject should be included in the program. Education acquired by the children should be followed up carefully, and to do this, parents should go on routine control visits to the dentist with their children. Preventive treatments such as application of dental sealants and fluoride should be conducted.
- Educational seminars should be organized since parents' knowledge on oral dental health can be inadequate. In addition to maintaining oral hygiene of children, parents should be used as role models, through parental and feeding education, and increasing routine control visits to the dentist. Educational programs directed towards children should be used to support preventive dentistry and treatment services. Making sure that individuals are informed about oral-dental health, beginning from primary school, and conducting routine visits to the dentist every six months, would help reduce the national prevalence of dental caries.
- Using regular tooth brushing by parents as a role model is seen to be important in the regular tooth brushing habit gained by children, showing the importance of oral dental health education acquired by the children and suggesting that children may not be able to brush their teeth at a very young age.
- Preventive treatment education for dentists and health personnel should be increased.
- All expenditures for preventive treatment education should be provided and supported by the state.
- Oral dental health services provided by private institutions should support preventive services, and activities should be organized during particular days and weeks during the year.
- Tooth brushing hours should be organized in primary schools and supervised by teachers, to check how good the children can brush their teeth.
- In the absence of preventive treatment, routine visits to the dentists should be organized every six months. These routine visits should all be financed by the state.
- All these studies should be state sponsored, and should be implemented as a principle followed by everybody. It should be easily accessible for the community, cheap and of good quality.

- The idea that prevention is very cheap, whereas treatment is difficult and expensive should be imbedded in the minds of all. By so doing both individuals and the state would greatly benefit in kind and might from the preventive treatment planning.

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