

ORAL HYGIENE HABITS AND ORAL HYGIENE INDEX OF PUBLIC SCHOOL STUDENTS

Hábitos de higiene bucal e índice de higiene oral de escolares do ensino público

Hábitos de higiene bucal y índice de higiene oral de escolares de la enseñanza pública

Original Article

ABSTRACT

Objective: To verify the oral hygiene habits and oral hygiene index of schoolchildren in public elementary school in the city of Itajaí-SC. **Methods:** Descriptive cross-sectional research. The sample consisted of children enrolled in the first year of elementary level in public schools of Itajaí-SC in 2011. Data collection was performed through registration of the children's Simplified Oral Hygiene Index (OHI-S) and a questionnaire applied to parents/guardians about the characterization of school student's oral hygiene. **Results:** The study evaluated 202 school student. Regarding daily toothbrushing, 121 (59.9%) reported that an adult is responsible for carrying out this procedure for the child and 81 (40.1%) reported the own child performs brushing. Brushing frequency for 128 (63.4%) children was three times a day and floss was not used by 137 (68%) of them. In 114 (56.4%) of the schoolchildren was found an OHI-S classified as reasonable hygiene (1.3 to 2). Regarding how to deal with the oral hygiene of children, 140 (69%) parents stated having already received such information and the source cited by 118 (58.4%) was the dentist. **Conclusion:** Schoolchildren presented oral hygiene habits with deficiency in dental plaque removal and flossing, resulting in a reasonable OHI-S.

Descriptors: Health Education, Dental; Motivation; Oral Health; Dental Plaque.

RESUMO

Objetivo: Verificar os hábitos de higiene bucal e o índice de higiene oral de escolares do ensino fundamental de escolas públicas do município de Itajaí-SC. **Métodos:** Investigação descritiva transversal. A amostra constou de escolares do primeiro ano do ensino fundamental de escolas públicas da rede municipal de Itajaí-SC matriculados em 2011. A coleta de dados foi realizada através de registro do Índice de Higiene Oral Simplificado (IHOS) das crianças e da aplicação de um questionário aos pais/responsáveis sobre a caracterização da higiene oral dos escolares. **Resultados:** Avaliaram-se 202 escolares. Quanto à escovação dental diária, 121 (59,9%) relataram que um adulto é o responsável pela realização desse procedimento na criança e 81 (40,1%) informaram que a própria criança executa a escovação. O número de escovações em 128 (63,4%) crianças foi de três vezes ao dia e o fio dental não era utilizado por 137 (68%). Encontrou-se em 114 (56,4%) escolares um IHOS classificado como higiene razoável – de 1,3 a 2. Com relação a como proceder com a higiene bucal da criança, 140 (69%) pais responderam já ter recebido essa informação e a fonte citada por 118 (58,4%) foi o cirurgião-dentista. **Conclusão:** Os escolares apresentaram hábitos de higiene bucal com deficiência na remoção da placa bacteriana e no uso do fio dental, resultando em um IHOS razoável.

Descritores: Educação em Saúde Bucal; Motivação; Saúde Bucal; Placa Dentária.

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RESUMEN

Objetivo: Verificar los hábitos de higiene bucal y el índice de higiene oral de escolares de la enseñanza básica de escuelas públicas del municipio de Itajaí-SC. **Métodos:** Investigación descriptiva transversal. La muestra fue de escolares del primer año de enseñanza básica de escuelas públicas de la red municipal de Itajaí-SC matriculados en 2011. La recogida de datos fue realizada a través del registro del Índice de Higiene Oral Simplificado (IHOS) de niños y de la aplicación de un cuestionario a los padres/responsables sobre la caracterización de la higiene oral de los escolares. **Resultados:** Se evaluaron 202 escolares. Respecto al cepillado dental diario, 121 (59,9%) relataron que un adulto es el responsable por el procedimiento en el niño y 81 (40,1%) informaron que el propio niño hace el cepillado. El número de cepillados en 128 (63,4%) niños fue de tres veces al día y el hilo dental no era utilizado en 137 (68%). Se encontró en 114 (56,4%) escolares un IHOS clasificado como higiene razonable – de 1,3 a 2. Respecto cómo proceder con la higiene bucal del niño, 140 (69%) padres contestaron ya haber recibido esa información y la fuente citada por 118 (58,4%) fue el cirujano-dentista. **Conclusión:** Los escolares presentaron hábitos de higiene bucal con deficiencia para la remoción de placa bacteriana y uso de hilo dental llevando a un IHOS razonable.

Descriptor: Educación en Salud Dental; Motivación; Salud Bucal; Placa Dental.

INTRODUCTION

For a long time, the oral cavity was seen as an anatomical structure isolated from the rest of the body. However, it is closely linked to the individual and, depending on its circumstances, can cause positive or negative impact on overall health⁽¹⁾.

The dental plaque or biofilm is presented as determining agent of dental caries and diseases involving gums and alveolar bone, which are characterized as the major problem within dentistry⁽²⁾. For the effective plaque control, the procedures of mechanical nature (brush and floss) are used, whose efficiency can be compromised, depending on the difficulties faced by people. Although a range of studies focusing on the chemical control of dental biofilm is known, with the use of various substances, none of them was shown to be able to replace the toothbrush and floss⁽³⁾. And when these practices are associated with diet control, they play an important role in the oral diseases prevention⁽⁴⁾.

Education plays a prominent role in achieving good levels of oral health, favoring the development of a critical consciousness. Health education includes actions aiming at the appropriation of knowledge concerning the health-disease process, including risk and protective factors to oral

health, as well as the possibility of replacing bad habits by healthy habits. Educational oral health practices are carried out in the Brazilian school environment since the early twentieth century⁽⁵⁻⁸⁾.

It is in childhood that the perspectives of each individual's oral health are fundamentally established. The awakening of consciousness in relation to the teeth and their structures and the need for commitment in the care of oral hygiene are established in this phase. The educational work with preschool and schoolchildren should be prioritized, as it is during this time that individuals are discovering themselves and are able to learn and acquire habits of oral hygiene and basic concepts in oral health, which will subsequently reflect in a population more aware and informed about the importance of prevention, avoiding future treatments⁽⁶⁾.

Given the need for studies on the oral hygiene habits practiced by students, the objective of this research was to assess the oral hygiene habits and oral hygiene index of schoolchildren at elementary education in public schools in the city of Itajaí-SC.

METHODS

This research is characterized as a descriptive, cross-sectional study. The target population consisted of students from the first year of primary education in public schools in the municipal network of Itajaí-SC enrolled in 2011. Educational municipal system of Itajaí is comprised of 40 elementary schools, which are distributed in six poles.

For sample composition, a school of each pole was randomly selected. Of the six schools, based on the number of students enrolled in the first year (n = 300), a probability sample was defined, assuming a confidence level of 95%, resulting in a number of 202 students. The subjects were selected at random, also by lot.

Data collection occurred in two stages, during the second academic semester of 2011, which consisted of the completion of a questionnaire by the selected schoolchildren's parents/guardians and performing the students' clinical examination, to assess the Simplified Oral Hygiene Index (OHI-S)⁽⁹⁾.

In the first stage, a questionnaire divided into two parts was sent to the selected schoolchildren's parents/guardians. The first part consisted of: *identification of children and guardians* (name and address - origin); *demographic variables* (gender, child's and parents' age); and *socioeconomic variables* (family income - in minimum wages, guardian's educational level - in complete years of schooling, and family structure - nuclear or non-nuclear). The second part featured a semi-open and four closed questions to characterize the number of daily brushings,

check use of dental floss, verify if some kind of counseling on oral hygiene was received and from whom.

The second stage of data collection consisted in measuring the oral hygiene condition, carried out through the OHI-S adjusted to the survey, only for the assessment of plaque accumulation. This index measures the plaque buildup in six tooth surfaces (buccal surface of 16/55, 11/51, 26/65, 41/81 and lingual surface of 36/75, 46/85). Each surface is divided into thirds and evaluated according to scores from 0 to 3, where: 0 - the surface is free of plaque; 1 - less than 1/3 of the tooth is covered by plaque; 2 - 1/3 to 2/3 of the tooth are covered by plaque; 3 - more than 2/3 of the tooth are covered by plaque⁽⁹⁾. Each individual's mean is obtained by summing the grades assigned to each surface and subsequently dividing by the number of surfaces examined. The final result is obtained by the sum of the plaque arithmetic averages, divided by the total sample. According to this index, adapted to the survey, the oral hygiene condition is classified as: good for values from 0.0 to 1.2; reasonable for values from 1.3 to 2.0; and deficient for values from 2.1 to 3.0⁽⁹⁾.

The schoolchildren's OHI-S was conducted by a researcher with the help of a volunteer, and occurred according to the procedures outlined below. The schoolchildren, in groups of 10 for each examination were removed from the classroom by the researcher and led to the school yard, at a place near the toilet. All received plastic cups containing 10 ml of 0.7% basic fuchsin to rinse mouth for 20 seconds and then spit the material back in the plastic cup, which was deposited in a trash bag. Under natural light and with the aid of a wooden spatula, the examiner verified the stained plaque on the predetermined tooth surfaces and recorded the result. At the end of each exam, the students were accompanied to the toilet, where the volunteer guided toothbrushing for these children⁽⁹⁾.

The whole procedure of evaluation of the oral hygiene condition was performed by a single examiner previously calibrated. The diagnostic agreement, according to the Kappa index, reached 0.94. To determine the Kappa index, the researcher conducted the OHI-S⁽⁹⁾ with 30 schoolchildren not belonging to the sample. The index was performed twice on the same day with a one-hour interval. The students did not brush the tooth surfaces after the first measurement of dental plaque, thus, the researcher was able to make the second measurement to check the calibration. These children were given information on how to perform proper dental hygiene.

Data from the OHI-S and the collected questionnaires were inserted into a database, using the Microsoft Excel 2010 program, and were analyzed using descriptive statistics, by calculating the relative frequency of responses to the questions and of OHI-S categories.

The project was approved by the Ethics Committee of UNIVALI under opinion No.10/11, and registered in SISNEP in accordance with the national requirements and the Declaration of Helsinki.

The students were benefitted with accurate and current information on oral health care by means of direct guidance leaflet and brushing orientation. It is noteworthy that there was no oral hygiene instruction or any intention of modifying the individual's behavior prior to the examination.

RESULTS

The return of 202 questionnaires answered by the students' parents/guardians was obtained, accompanied by the Informed Consent Statement.

With regard to sociodemographic aspects of the students' parents/guardians participating in the sample, 109 (54%) had secondary or higher education. The most cited family income - by 130 (64%) - was two or more minimum wages. For 141 (70%), the number of children per family was one or two.

As for the characterization of oral hygiene conducted by students at home, according to their parents/guardians, 121 (59.9%) stated that an adult (parents/guardians) is in charge of performing this procedure in the child and 81 (40.1%) related that the own child performs brushing. The number of daily tooth brushing for 128 (63.4%), is three times (Figure 1).

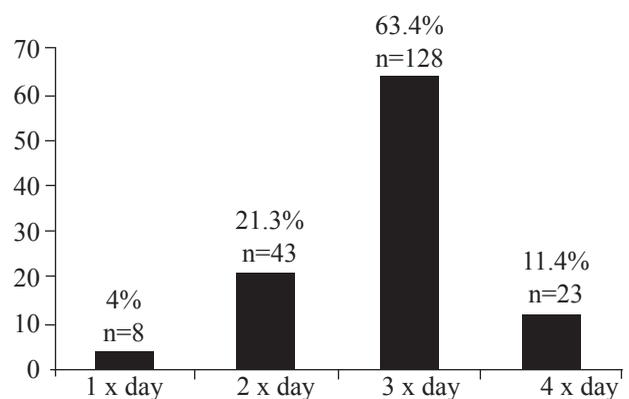


Figure 1 - Frequency of daily toothbrushing. Itajaí-SC, 2011.

On the use of dental floss, 137 (68%) reported not using this auxiliary method for oral hygiene of their children.

With regard to information on how to perform children's oral hygiene, 140 (69%) parents/guardians related having already received it. The dentist was cited as the information source by 118 (58.4%) of parents/guardians; other sources can be observed in Figure 2.

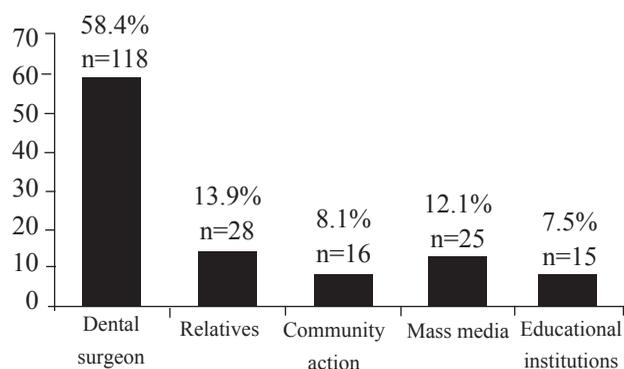


Figure 2 - Frequency of sources of information on oral health. Itajaí-SC, 2011.

The assessment of oral hygiene condition performed in the students, based on the criteria of the OHI-S⁽⁹⁾ determined an overall average of 1.72, which classifies the sample as having a reasonable OHI-S. In Figure 3, the frequencies for each of the categories that define the oral hygiene condition can be observed.

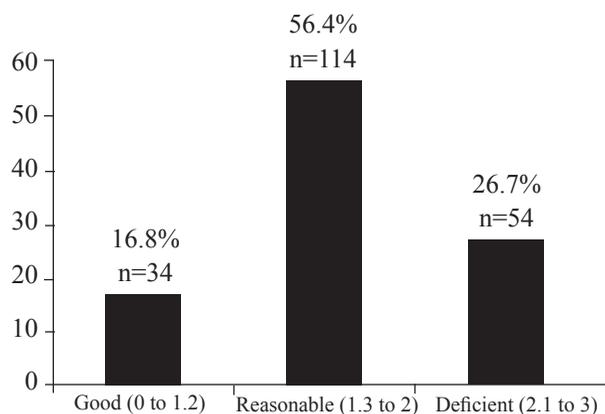


Figure 3 - Frequency of the Simplified Oral Hygiene Index (OHI-S) of students. Itajaí-SC, 2011.

DISCUSSION

Brazil managed to reduce the rate of dental caries among the population in different age groups, especially among the youngsters. At 5 years old, 46.6% of Brazilian children are free of caries in the primary dentition and, at the age of 12, 43.5% had the same condition in the permanent dentition. Despite these highly satisfactory levels, a considerable effort is required by society to control this condition⁽¹⁰⁾.

Tooth decay is considered the main condition affecting oral health in childhood. However, it is preventable by controlling the microbiota involved in its etiology. The mechanical control of dental plaque by brushing associated with chemicals and regular flossing, and the adoption of

healthy eating habits, despite being relatively simple and highly satisfactory procedures have not yet been fully achieved by the Brazilian population⁽¹¹⁾.

In the present study, parents/guardians reported that their children's frequency of tooth brushing is three times a day, corroborating other studies⁽¹²⁻¹⁷⁾, and that they supervise this procedure. The frequency of brushing and parental monitoring are very positive attitudes, however, reasonable OHI-S achieved by the group investigated denotes that the procedures for dental plaque removal performed by these subjects have not yet matched the ideal. Dental plaque accumulation due to inadequate cleaning complicates the process of remineralization⁽¹⁸⁾, therefore, poor oral hygiene can be considered as an important risk factor for the caries onset, particularly in children⁽¹⁸⁻²¹⁾.

The monitoring of children's oral hygiene by an adult is very important because, when properly oriented, adults can explain and help the child on the correct tooth brushing technique and also on caring for the swallowing of toothpaste^(14,15,22). Considering the OHI-S of the group evaluated in this study, it can be inferred that the parents/guardians who have supervised these children's procedures of oral hygiene do not have proper knowledge on how to carry out the hygiene of the oral cavity.

An effective oral hygiene should include, besides brushing associated with chemical agents, the dental floss. Although its importance for cleaning the proximal faces is already well known and its dissemination has grown in recent years, flossing is not a common practice among the Brazilian population, as shown in the results of this study and others^(14,16,22-24).

Therefore, one can see that there are still shortcomings with regard to oral hygiene of the students evaluated in the current study. These failures may be due to a variety of factors, such as motivation, adequacy of cleaning tools, education, among others. Thus, it is necessary to improve behaviors related to oral hygiene habits of this population. It is noteworthy that these students are not included in a program of systematic hygiene orientation by the staff of the Family Health Strategy; in this sense, educational activities focusing on caring for the oral health should be offered to the academic community in the city. These actions must be carried out by qualified professionals, such as the dentist, the oral health technician (*técnico em saúde bucal - TSB*) and other professionals within the teams of the Family Health Strategy, as well as graduate students in dentistry. Continuous investment in education contributes to reduction of risks and grievances in oral health.

The school should be one of the main institutions to foster health, through educational programs on oral health aiming at the expansion of family and teachers information. When promoting health in schools and encouraging the

hopes and abilities of children and adolescents, the potential to create a better world becomes unlimited, since, if they are healthy, they can make the most of every opportunity to learn⁽²⁵⁾.

In the present study, the involvement of children in the school environment was considered relevant, since this space favors the spread of knowledge and the motivation to adopt habits and proactive attitudes regarding health. Considering the results of this research, and based on the understanding that schools are strategic sites for conducting educational programs on oral health, by grouping children of age ranges conducive to the adoption of these educational and preventive measures^(5-7,26), researchers intend to discuss with the Oral Health Department of the municipal Health Secretariat the possibility of implementing an educational work suitable for these students and their parents/guardians, as well.

An authentic oral health education program should stimulate the approximation of the subject, knowledge and doings. In this process, the role of the dentist is essential because they can interact with the children, their families and other members inside and outside the school community, aimed at changing behavior regarding health and the incorporation of habits favorable to its preservation. It is important to establish partnerships between healthcare and education professionals so that health habits are actually established on a permanent basis by schoolchildren⁽⁵⁻⁷⁾.

The choice of evaluating the oral hygiene condition through the Simplified Oral Hygiene Index (IHO-S)⁽⁹⁾ in this research follows the success achieved by researchers in the daily use of that method as motivating of the oral hygiene of patients treated at the Pediatric Dentistry Clinic in the University of Vale do Itajaí. Since the intent of this research was to establish a health education project for schoolchildren of Itajaí educational network, the OHI-S was chosen. The child clientele, through the visualization of dental surfaces stained by basic fuchsin, becomes more sensitized to receive guidance on caring that promote better oral health.

As a limitation of the present study, it is worth mentioning the shortage of current literature with similar methodology - a fact that restricts the discussion. Researches available in literature analyze the DMFT and dmft indicators in relation to the frequency of brushing and/or eating habits^(12,13,27,28) or correlate sociodemographic variables with the frequency of brushing and/or DMFT and dmft indicators^(14,15,29-32).

CONCLUSION

It was found that students evaluated presented oral hygiene habits with disabilities in removing plaque and flossing, resulting in a reasonable OHI-S.

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