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Descriptive study of the state of oral health among students in Sfax (Tunisia) Etude descriptive de l'état de santé bucco-dentaire chez des élèves à Sfax (Tunisie)

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Abstract

Introduction: The high frequency of oral diseases, especially dental caries, and their impact on the general condition of pupil make it a public health issue. This study aims to find out the state of oral health in schools. **Materials and method:** This is a cross-sectional descriptive study in a primary school. The sample is made up of 91 pupils. The material used is a questionnaire, a pair of clean gloves and a tongue depressor. **Results:** The prevalence of dental caries is 48.4%. The DMFT index is 2.4. Malocclusion is the most common oral disease. pupil brushing their teeth represent 78%. Only 12.1% of pupil brush their teeth using the correct method. Pupils consuming sweets represent 80.2%. In fact, no boy brushes more than once a day, and no boy brushes well. Analyzes and **Discussion:** The investigation was carried out by two dentists who naturally may differ. The Kappa statistic is 82% of which there is an almost perfect agreement between KB and MK examiners. The prevalence of childhood caries is 48.4%. This rate is high compared to the global prevalence (25.7%). In Tunisia, the prevalence in our study is lower than that of the locality of Jelma (Sidi Bouzid) which is 83.3%. This survey showed a poor state of the oral health of the population in schools. It is recommended to strengthen prevention programs in schools by increasing awareness campaigns and encouraging a reduction in the consumption of sweets and a good brushing method. **Conclusion:** The health situation requires rapid application of the recommendations cited. More studies are needed to explore more parameters of oral health to better manage it.

Keywords: dental health, pupil, Tunisia

Résumé

Introduction : La grande fréquence des affections bucco-dentaires surtout la carie dentaire et leur retentissement sur l'état général des élèves en font une question de santé publique à part entière. Cette étude vise à connaître l'état de santé bucco-dentaire en milieu scolaire. **Matériel et méthodes :** Il s'agit d'une étude descriptive

transversale dans une école primaire. L'échantillon est composé de 91 élèves. Le matériel utilisé est un questionnaire, une paire de gants propres et un abaisse-langue. **Résultats** : La prévalence de la carie dentaire est de 48,4%. L'indice CAO est de 2,4. La malocclusion est l'affection buccale la plus rencontrée. Les élèves se brossant les dents représentent 78%. Seulement, 12,1% des élèves se brossent les dents selon une méthode correcte. Les élèves consommant des sucreries représentent 80,2%. En fait, aucun garçon ne se brosse plus qu'une fois par jour et aucun garçon n'a une bonne méthode de brossage. **Analyses et discussion** : L'enquête a été effectuée par deux dentistes qui naturellement peuvent diverger. La statistique Kappa est de 82% d'où on a un accord entre examinateurs KB et MK presque parfait. La prévalence de l'atteinte carieuse infantile est de 48,4%. Ce taux est élevé par rapport à la prévalence mondiale (25,7%). En Tunisie, La prévalence dans notre étude est inférieure à celle de la localité de Jelma (Sidi Bouzid) qui est de 83,3%. Cette enquête a montré un mauvais état de la santé bucco-dentaire de la population en milieu scolaire. Il est recommandé de renforcer les programmes de prévention dans le milieu scolaire en multipliant les campagnes de sensibilisation et en incitant à la diminution de la consommation de sucrerie et à une bonne méthode de brossage. **Conclusion** : La situation sanitaire demande une application rapide des recommandations citées. Il faut effectuer d'autres études pour explorer davantage de paramètres de l'état de santé buccodentaire pour mieux le gérer.

Mots clés : Santé dentaire, élève, Tunisie

1. Introduction:

Oral health has a big impact on general health. We consider that we can speak of an acceptable general state of health if the oral health is good [1]. The high frequency of oral diseases, their impact on the general condition and on the quality of life, make it a public health issue. The most common oral disease is tooth decay. It is currently ranked by experts from the World Health Organization WHO as the third largest scourge in the world [2], after neoplastic diseases and cardiovascular diseases. Representing the most frequent oral disease in schools, caries disease remains a subject of interest for dentists working in schools to improve the state of health of Tunisian pupils [3].

Tunisia has for several years followed programs to promote oral health in schools [3]. In the 2017-2018 academic year, the ministries of health and education celebrated the national oral health awareness day in schools. This day, which is celebrated each year from February 20, 2018, is detailed in the circular of the Ministry of Health number 9 and that of the Ministry of Education number 3. This annual event makes it possible to:

- Make a campaign to raise awareness of oral health in schools.
- Recognize the oral health status of pupils in schools through an Assessment Form.

- Draw up a national school map of the state of oral health through local and regional reports.

This study aims to find out the state of oral health in a school in the city of Sfax and to study according to the Assessment Form the state of caries disease, the hygiene of the pupils and their diet.

2. Material and Methods:

2.1. Study framework:

This is a cross-sectional descriptive study carried out at a primary school of the Sfax-Sud delegation of the governorate of Sfax (Tunisia). The school has 1,100 pupils aged 6 to 12.

2.2. Sample:

The survey sample consists of 91 first year primary school pupils. These children are all 6 years old, and they are divided into three classes. No student suffers from general chronic illnesses.

2.3. Data gathering:

The entire health survey was carried out on the same day. Two investigators (public health dentists) KB and MK collected the statistical data. The material used is an assessment form, a pair of clean gloves and a tongue depressor for each student.

2.3.1. Survey

The Assessment Form for this study was designed by the General Directorate of School and University Medicine of the Ministry of Health. Prior approval from teachers was obtained for their pupils to participate in the survey. Prior agreement from the competent authorities has also been obtained to be in harmony with WHO recommendations [4]. The Assessment Form contains 16 statistical variables with 49 modalities.

2.3.2. Conduct of the investigation:

The investigation took place on February 14, 2020. Two investigating dentists KB and MK collected the information in the Assessment Form. The information collected must be statistically reliable and valid because the Assessment Forms were completed by more than one interviewer. The reliability and validity of the data are checked according to the method recommended by WHO [4] using the Kappa statistical test.

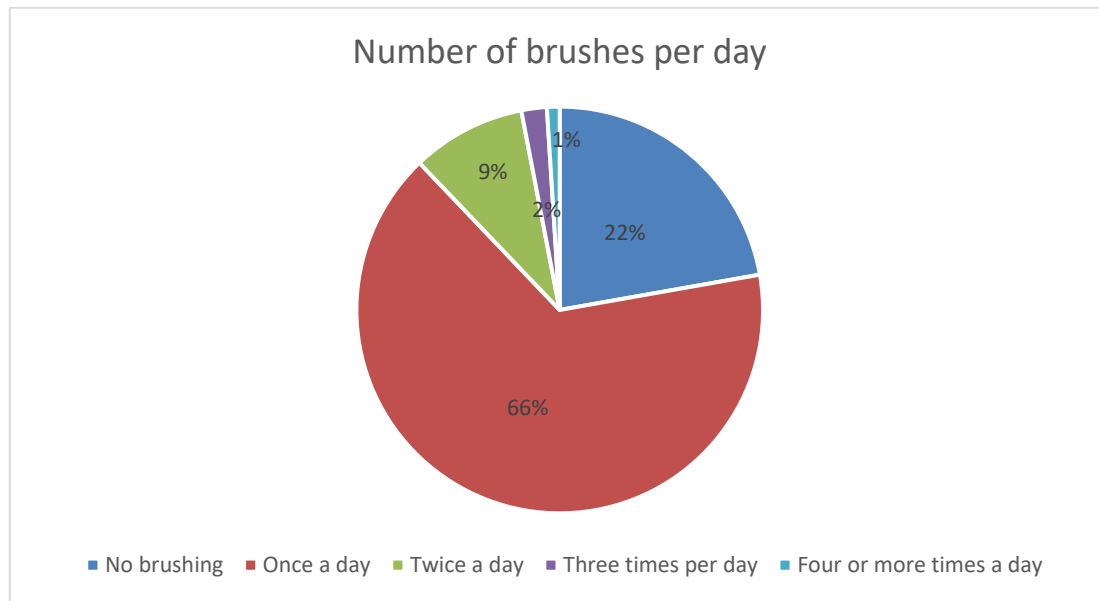


Figure 1: Number of brushes per day

The Kappa statistic is 82% of which there is an almost perfect agreement between KB and MK examiners [4] [5].

2.4. Data processing:

Data entry and processing were carried out using the Statistical package for social science software (IBM SPSS® version 20). The KHI two test was used for the statistical study with a P value of 5% [4].

3. Results:

3.1. General results:

In this section, the variables that characterize the sample will be detailed. These parameters reflect the characteristics of the school population as an example of the school environment.

The boys examined represent 53.8%. The prevalence of dental caries is 48.4%. The DMFT index is 2.4. pupils with a single decayed tooth represent 19.8%. No pupil has three or more decayed permanent teeth. Malocclusion is the most common oral disease encountered. Only 18.7% of the pupils visited the dentist. Pupils brushing their teeth represent 78%. Pupils brush only once a day represent 64.8% (figure 1). Only 12.1% of pupils brush their teeth well (figure 2). Pupils consuming sweets represent 80.2%. Pupils consuming greenery represent 30.8%.

3.2. Results of the statistical study:

The correlations studied by the KHI two test are dependency correlations [6]. In our study, the statistical factor that varies significantly is the gender parameter. The KHI two test is significant when the P value is less than 0.05. The P value is 0.001 for the pair of variables gender and Number of brushes per day (figure 3) and it tends towards 0 for the pair of variables gender and brushing method.

4. Analyzes and discussions:

In this work, a methodological limitation should be noted. This limit concerns the detection of dental caries. The detection of cavities in teeth that are the main manifestation of dental caries is based solely on visual observation. However, the use of probe or laser or transillumination [4] [7] reveal the existence of other caries lesions not recorded in the statistical study. The prevalence of tooth decay can be significantly reduced. This study showed several aspects of the state of oral health in pupils. Decayed teeth are predominantly lacteal, this is explained by the intervention of the time factor [8] in the development of caries, knowing that at the age of 6 years the permanent teeth have just appeared in the mouth. Malocclusion is the most common oral disease and is explained by the diet that pupils have. This diet does not stimulate the growth of dental arches [9]. The pupils all have toothbrushes but usually use them once a day and brush poorly.

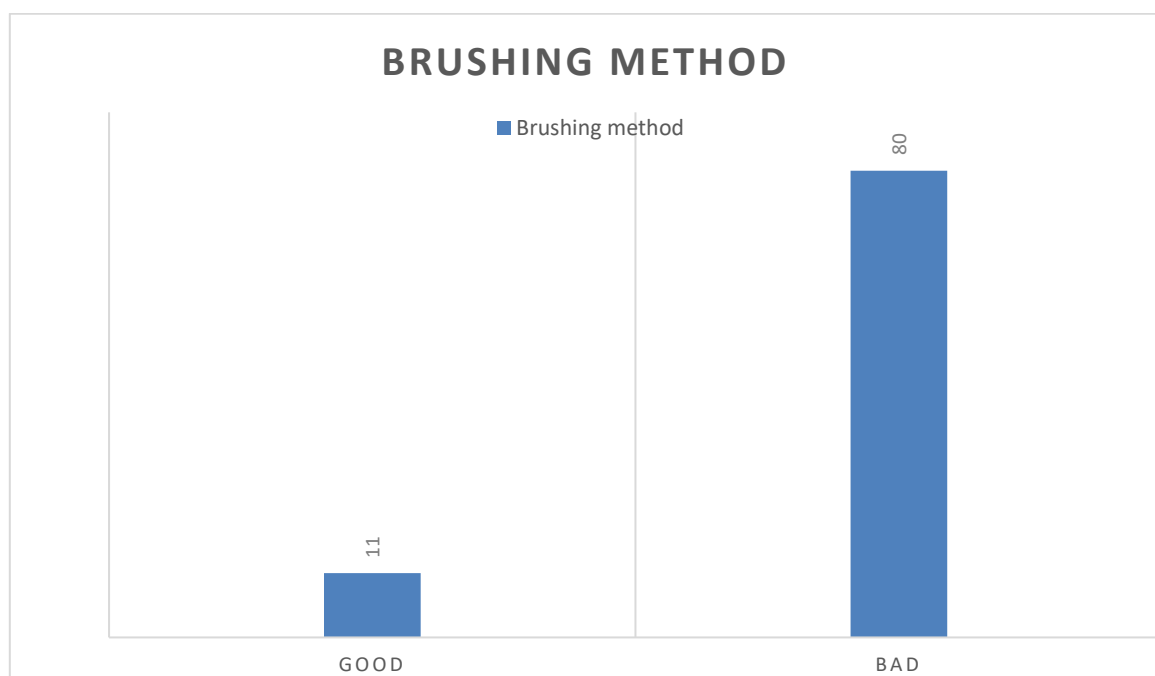


Figure 2: Brushing method

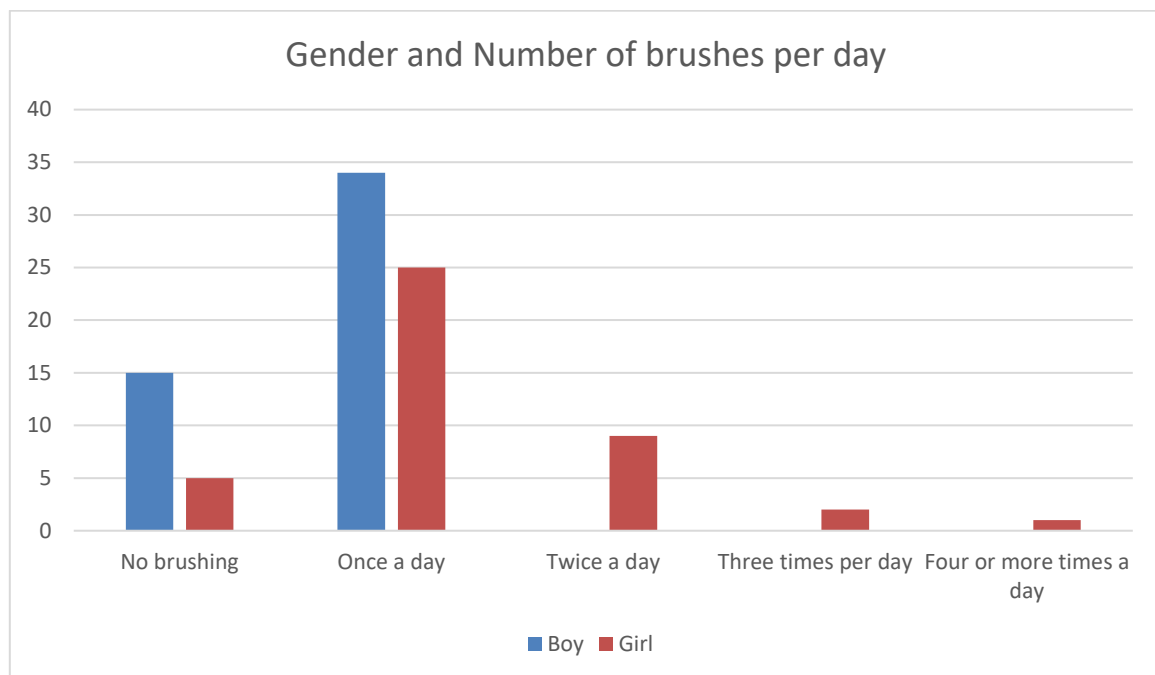


Figure 3: Gender and Number of brushes per day

This reflects a pressing need for education for good oral health. pupils' diets are rich in sweets and poor in vegetables and fruits, which, however, provide cariogenic bacteria with enough carbohydrate to develop cavities.

The prevalence of childhood caries is 48.4%. This rate is high compared to the global prevalence of around 25.7% [10]. In Tunisia, the prevalence in our study is lower than that of the locality of Jelma (Sidi Bouzid) which is 83.3% [7]. The DMFT index is low [11]. Comparing Tunisia through the prevalence of our study to other countries, the prevalence in Ethiopia (56.2%) and Iraq (91.6%) is higher than ours. But other countries like Nigeria [12], Palestine [13], India [14], United States [15], having respective prevalence 15.4%, 40.5%, 34.3 %, 23%, have a better state of Tunisian oral health in Sfax.

5. Conclusion:

This survey showed a poor state of oral health of the population in schools. If we want to improve the health situation, we must intervene quickly in terms of promoting oral health. It is recommended to strengthen prevention programs in schools by increasing awareness campaigns and encouraging a reduction in the consumption of sweets and a good brushing method. Parents should be encouraged to visit the dentist more frequently. An improvement in medical coverage [11] and in school and university medical structures could possibly encourage pupils to consult and strictly follow dental care.

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