



Assessment of Dental Caries Prevalence in Deciduous and Permanent Student Teeth in Khamis Mushait-KSA

KEYWORDS

Prevalence, Dental, Caries, hygiene

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ABSTRACT From the total selected sample (1110 girls) and (380 boys), only 21%, 19%, 17% using teeth brush among boys and only 29.2%, 25.6%, 21.2% from girls in class 1, class 4 and class 6 respectively. And the high consumption of caries induction factors by students in classes 1, 4 and 6 which was 68%, 74%, 80% (girls) and 85%, 85%, 87% (boys) respectively. The BMI study revealed that: the high incidence of dental caries was observed among overweight student which represents 49% boys and 43% as girls, then the second involved BMI group was the obese which showed 35% boys and 33% among girls, then followed by the underweight as 11% boys and 15% girls while the least involved BMI group was the normal students that representing 5% boys and 9% girls. The study depending on dmft% and DMFT% among the student classes for boys and girls revealed that: the dmft % decreasing with age and it is more among the boys than the girls 4.25%, 3.58% respectively. While DMFT increasing with age it is also more among the boys than the girls 1.50% and 1.19% respectively. In the mandible the most tooth affected was the permanent first molar and it is affected more than the maxillary permanent first molar ,and the least permanent teeth affected were the mandibular incisors.

1. INTRODUCTION:

Dental caries has been recognized as an infectious disease induced by different etiological factors, the main etiologies of the disease are: (i) cariogenic bacteria, (ii) fermentable carbohydrates, (iii) a susceptible tooth and host, (iv) the time [1]. Other factors that may induce caries in young children have been described in a number of reviewed papers [2-6]. As has been stated by Moynihan, [7] and Moynihan and Kelly, [8] that: sugars are recognized as by far the most important dietary factor in the development of dental caries and there is a clear understanding of the biology of the process of enamel dissolution induced by acid fermented products of sugars by the action of bacteria, in addition to aging as significant factor [7]. Despite the use of fluoride and improvements in preventive dentistry, the burden of dental caries remains unacceptably high worldwide, particularly when, in addition to the traditional focus on childhood caries [9]. And the dental caries continues to affect a large number of all age groups, with tooth decay in primary teeth increasing among children aged 2-5 years [10]. This National Health and Nutrition Examination Survey (1999-2004) reported that 42% of children, aged 2-11, have had carious lesions in their primary teeth and 21% of children, aged 6-11, have had carious lesions in their permanent dentition. Approximately 59% of adolescents, aged 12-19, have experienced dental caries and by adulthood, aged 20-75+, well over 92% of those surveyed have experienced dental caries in their permanent dentition. The consequence of dental caries is so obvious in painful carious teeth that may cause malnutrition in children due to difficulties in mastication; they could even present major septic disease (cardiac disease). Also they may cause aesthetic and psychological problems for some patients [5], thus affecting quality of life. Moreover, management for dental caries diseases forms a burden on the individual as well as the Nation's economy. It is a multi-factorial disease that usually can

be successfully prevented or controlled [11]. However, in young children bacterial flora and host defense systems are in the process of being developed, tooth surfaces are newly erupted and may show hypoplastic defects, and their parents must negotiate the dietary transition through breast/bottle feeding, first solids and childhood tastes. Thus it is thought that there may be unique risk factors for caries in infants and young children [1, 6]. The majority of caries in permanent teeth occurs in adults, not in children. That is evident in countries with low as well as high sugar intakes irrespective of the fluoride intakes [12-16]. A notation of dental caries and tooth loss among school boys and girls considered as the motivation to carry out this study in Khamis Mushait city in Saudi Arabia, where the routine visits for dental check up is not a common practice and many children go to the dentist only when they feel pain or having dental problem. So the aim of this study was to examine, evaluate and compare prevalence of dental caries among different age groups at class1, class 4 and class 6.

2. METHOD:

The total number of girls and boys selected for these studies were (1110) and (380) respectively, which has been distributed in class 1 implies (459 girls and 136 boys), class 4 implies (340 girls and 129 boys) and class 6 implies (311 girls and 115 boys). The selection of school classes was purposefully done so as to include all types of dentition; deciduous dentition, mixed dentition and permanent dentition .The study sample included the first class , the fourth class and sixth class to cover all types of dentition.

The part of investigation aims at estimating caries prevalence measured by the dmft index { decayed (d), missed (m), filled (f) ,tooth (t) for deciduous dentition } and DMFT index { decayed (D), missed (M), filled (F), tooth (T) for permanent den-

tion. It was used to get estimation illustrating how much the dentition until the day of examination has become affected by dental caries. It was either calculated for 28 (permanent) teeth, excluding the wisdom teeth or the 32 teeth as recommended by WHO in 1987. The exam was carried out by using (dental mirror, tweezers, dental explorer and periodontal probe) in the dental chair in supine position & under the light of the dental chair; dmft, DMFT, periodontitis and gingivitis were registered by the help of the nurse staff in addition to questionnaire.

3. RESULTS:

The results shown in this section deal with the sample size selected for the studies of caries disease, the usage of brushes among student classes (boys and girls), the consumption of caries induction factors by students (boys and girls), the frequency % of dental caries distributed based on the BMI among students (Boys and girls), the dmft % among the student classes for boys and girls and the DMFT% among the student classes for boys and girls.

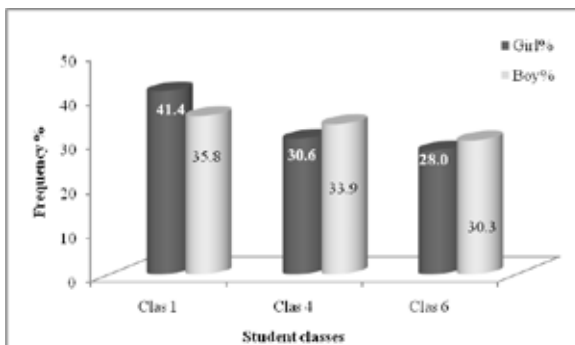


Figure 1 shows the sample size selected for the studies of caries

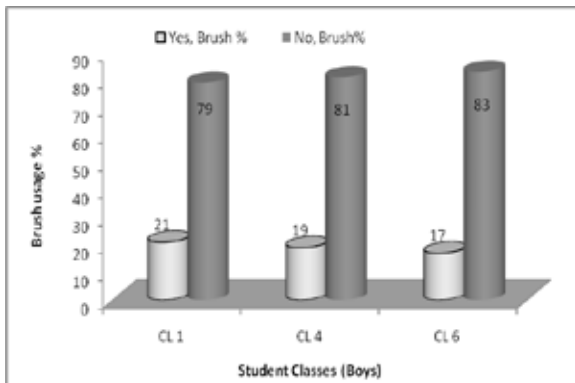


Figure 2 shows the students in classes 1, 4 and 6 who used teeth brush (Boys)

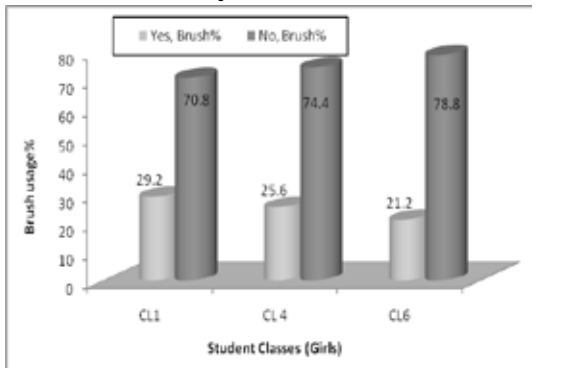


Figure 3 shows the students in classes 1, 4 and 6 who used teeth brush (Girls)

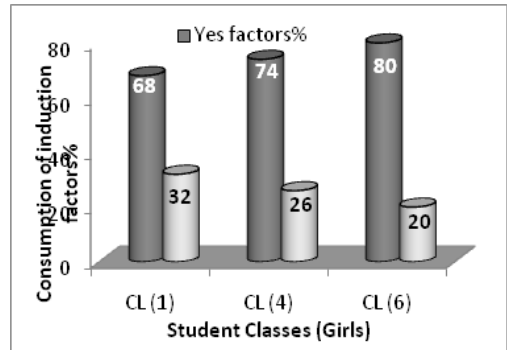


Figure 4 shows the consumption of caries induction factors by students in classes 1, 4 and 6 (Girls)

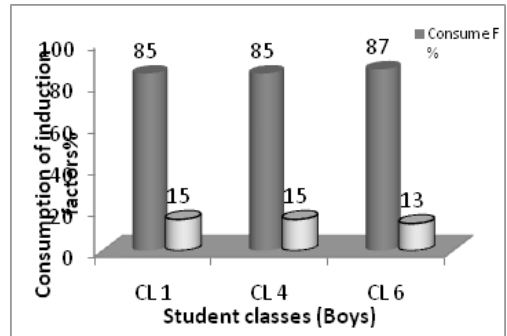


Figure 5 shows the consumption of caries induction factors by students in classes 1, 4 and 6 (Boys)

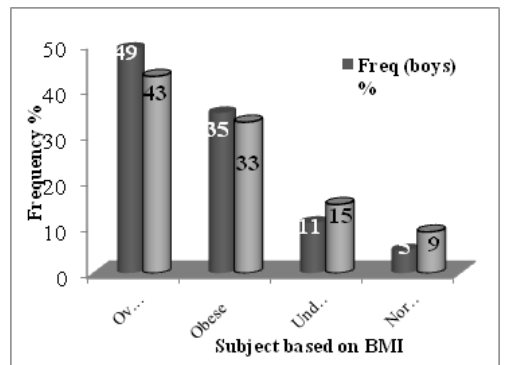


Figure 6 shows the frequency % of dental caries distributed based on the BMI among students (Boys and girls)

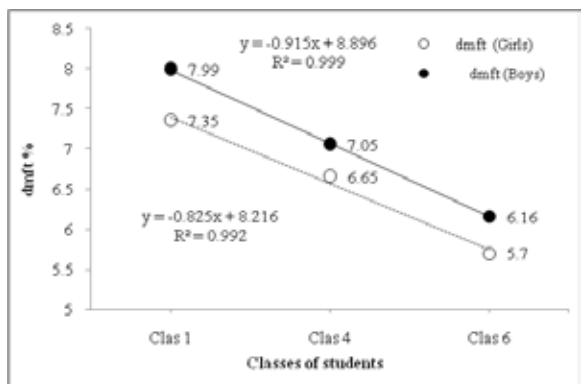


Figure 7 shows the dmft % among the student classes for boys and girls

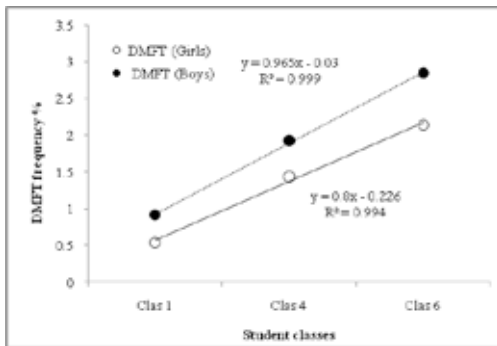


Figure 8 Shows the DMFT % among the student classes for boys and girls

4. Discussion and analysis:

As the total number of girls and boys selected for these studies were (1110) and (380) respectively, which has been distributed in class 1 implies (459 girls and 136 boys), class 4 implies (340 girls and 129 boys) and class 6 implies (311 girls and 115 boys).

The results showed that the percentage of girls and boys form the general sample sizes were as follows 41.4%, 30.6%, and 28.0% (girls) and 35.8%, 33.9%, 30.3% boys which representing most of the primary school's student. For those samples, the usage of teeth brush was observed as follows: only 21%, 19%, 17% using teeth brush among boys and only 29.2%, 25.6%, 21.2% from girls in class 1, class 4 and class 6 respectively (Figure 2), such findings indicating poor oral hygiene among the students.

In figure 4 and 5, the researchers found that: the consumption of caries induction factors by students in classes 1, 4 and 6 was 68%, 74%, 80% (girls) and 85%, 85%, 87% (boys) respectively. The high consumption of caries induction factors such as soft drinks and sources of sugar by school children in Saudi Arabia could be considered as a co-factor that increases the incidence of dental caries, this conception is agreed with Collison, Belloll and Johansson [17-19]. As well Alsamadi [20] stated that: the poor dental knowledge among children, and additional factors such as late first dental visits for routine checkups and late starting brushing may also be responsible for high caries prevalence.

Figure 6 shows the frequency % of dental caries distributed based on the BMI among students (Boys and girls). The BMI formula or (Quetelet Index) which developed by Belgium statistician Adolphe Quetelet (1796-1874) [21], as an international method to measure the obesity as (normal range 18.5-24.9, overweight 25-29.9 and obese is ≥ 30), has been applied on the data, which revealed that: the high incidence of dental caries was observed among overweight student which represents 49% boys and 43% as girls, then the second involved BMI group was the obese which showed 35% boys and 33% among girls, then followed by the underweight as 11% boys and 15% girls while the least involved BMI group was the normal students that representing 5% boys and 9% girls. Such result is agreed with the study carried by Subramaniam and Singh, [22], in which they stated that: children from the upper classes consumed more food, including snacks and were either at a risk of overweight or overweight.

Figure 7 and 8 show the dmft % and DMFT% among the student classes for boys and girls. The study revealed that: the dmft % decreasing with age and it is more among the boys than the girls 4.25 , 3.58 respectively ; it is less than in the study done by AL Agili, [23]. On the other hand the DMFT increasing with age it is also more among the boys than the girls 1.50 , 1.19 respectively and it is also less than AL Agili's state [23], this may be due to geographic location difference and also it may be due to elder girl care more of their teeth than the boy, but same like in the study done by Dukicw [24], in the mandible the most tooth affected was the permanent first molar and it is affected more than the maxillary permanent first molar ,and the least permanent teeth affected were the mandibular incisors. The highest components were the (d) and (D), this agree with the study done by Wyneo [25], followed by the (m) and (M) components which tell us about the high rate of caries incidence among the study population that were visiting dentist too late only when there was severe pain and the treatment of choice is extraction.

5. Conclusion:

Poor oral hygiene among the students together with high consumption of caries induction factors by students in classes 1, 4 and 6 are considered as the common induction factors for dental caries. As well the high consumption of food which is rich with snacks sugar must be controlled and followed by specific hygienic protocol.

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