

# The Prevalence of Dental Caries in Primary Dentition in 5- to 6-Year-Old in the East of Riyadh, Saudi Arabia

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## Abstract:

### Aim:

The aim of this study describe prevalence dental caries in the age group of 5-6 years old was rate mothers among 1,076 children in Riyadh , the probably high rate of dental decay affected by industrial breast feeding . diet or bad oral hygiene or don't towards their children's oral health visit the dental clinic ,we has strongly emphasized sustainable preventive programs to development oral health and dietary habits , industrial breast feeding , among pregnancy and preschool children.

### Keywords:

Dental caries, children, caries pattern, dental health survey

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## Introduction :

Tooth disease can be defined as an infectious micro-biological disease of the teeth that results in localized dissolution and destruction of the calcified tissues. Tooth disease begins as a subsurface demineralization of the enamel which goes forward along the enamel prisms to the DEJ, where the tooth disease spreads to the side and centrally into the hidden under dentin assuming a conical setup with the highest point towards the pulp(1). It is known that tooth disease can affect the general health and wellbeing of affected individuals, especially children. Many studies have revealed the negative impact of tooth disease on the quality of life of children ranging from being ashamed to smile and speak, to difficulty in eating (5). The demineralization of enamel occurs due to acid released from sugars in the bacterial plaque resulting in tooth disease (8). Dental decay (tooth disease) is a widespread disease among Aboriginal communities and it has a particularly severe impact on children and their wellbeing<sup>1,2</sup>. For example, rotted and painful teeth greatly stop an ability to eat healthy foods, directly influencing nutrition and ultimately systemic health. In young children, due to the thin layer of enamel on primary teeth, tooth disease can progress more quickly than in adult teeth, causing severe pain, destruction of the teeth, and systemic infection<sup>(12)</sup>. Tooth disease management is the combination of preventive and restorative dentistry . The idea is to restore all the existing carious damage and prevent new tooth disease from beginning and building on. Preventive dentistry this way aims at Determination the risk factors and providing customized preventive care to the child (1).

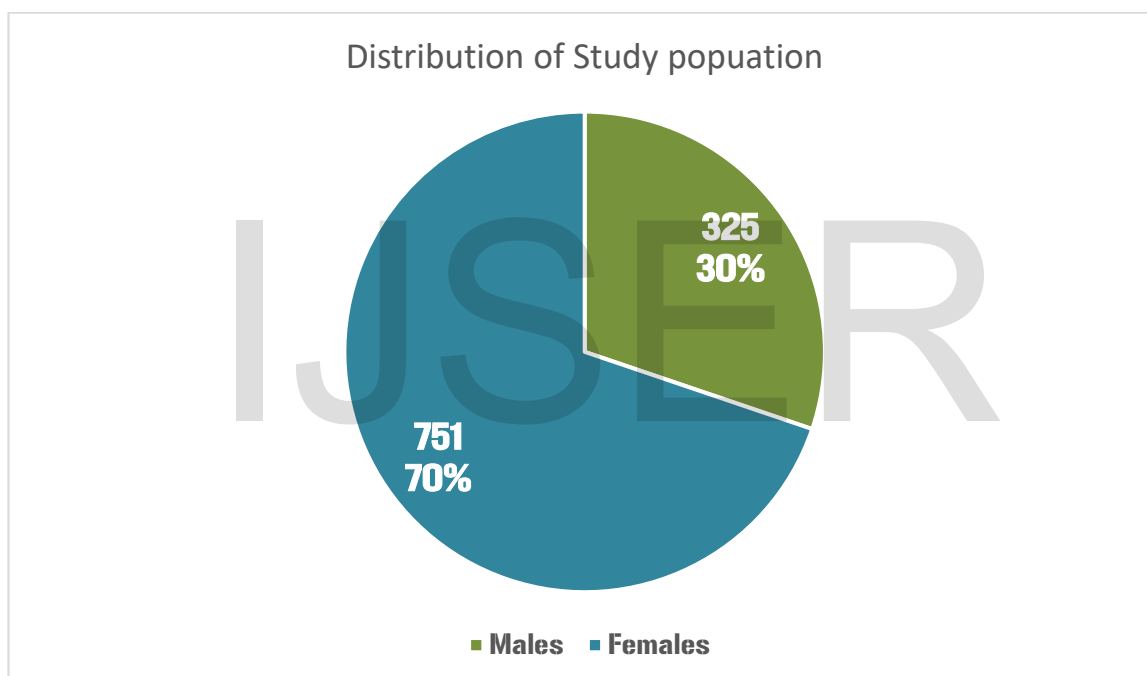
## Materials and methods :

This study reported a worrying prevalence rate of among 1076 children 751 Girls and 325 Boys from 5-6 years-old . This study was conducted at East of Riyadh city , Saudi Arabia, Oral examination of participants was conducted from November 2017 to February 2018. The high rate of tooth disease

and enamel defects register in this study for this aged. , a mothers was asked to complete a questionnaire giving information about the child and her household. The examination was done by a dental mirror and dental explorer and helped by a trained person for register information throughout the study. During the examination, a questionnaire was used to fill out personal information , name, age, sex .The subject was examined on an upright chair in adequate natural light. The mothers was asked in questionnaire about the like awareness about child's oral health,lifestyle,Diet,brushing teeth, visit the dentist ,breastfeeding .

**DMFT index has been used to measure the prevalence of caries activity.**

## Results:

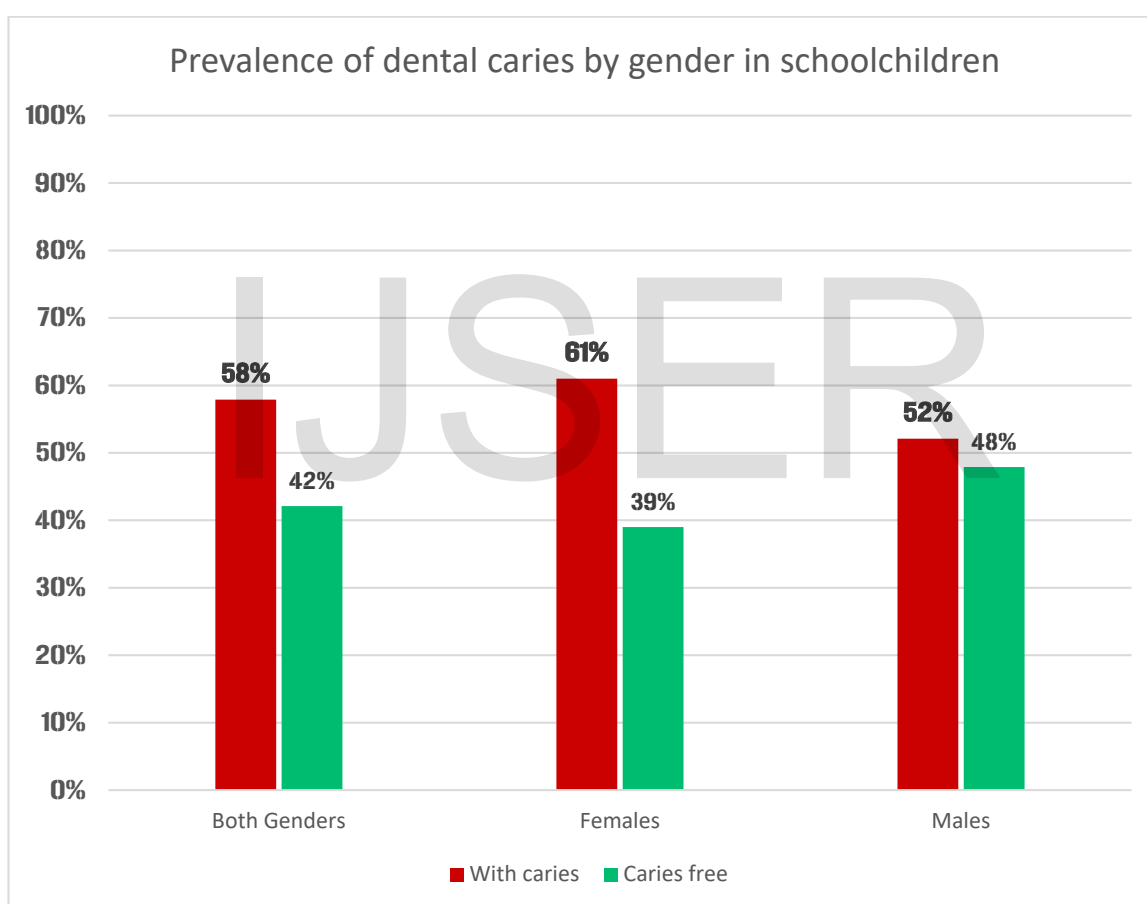


**Figure1: Gender distribution of study population (n = 1076)**

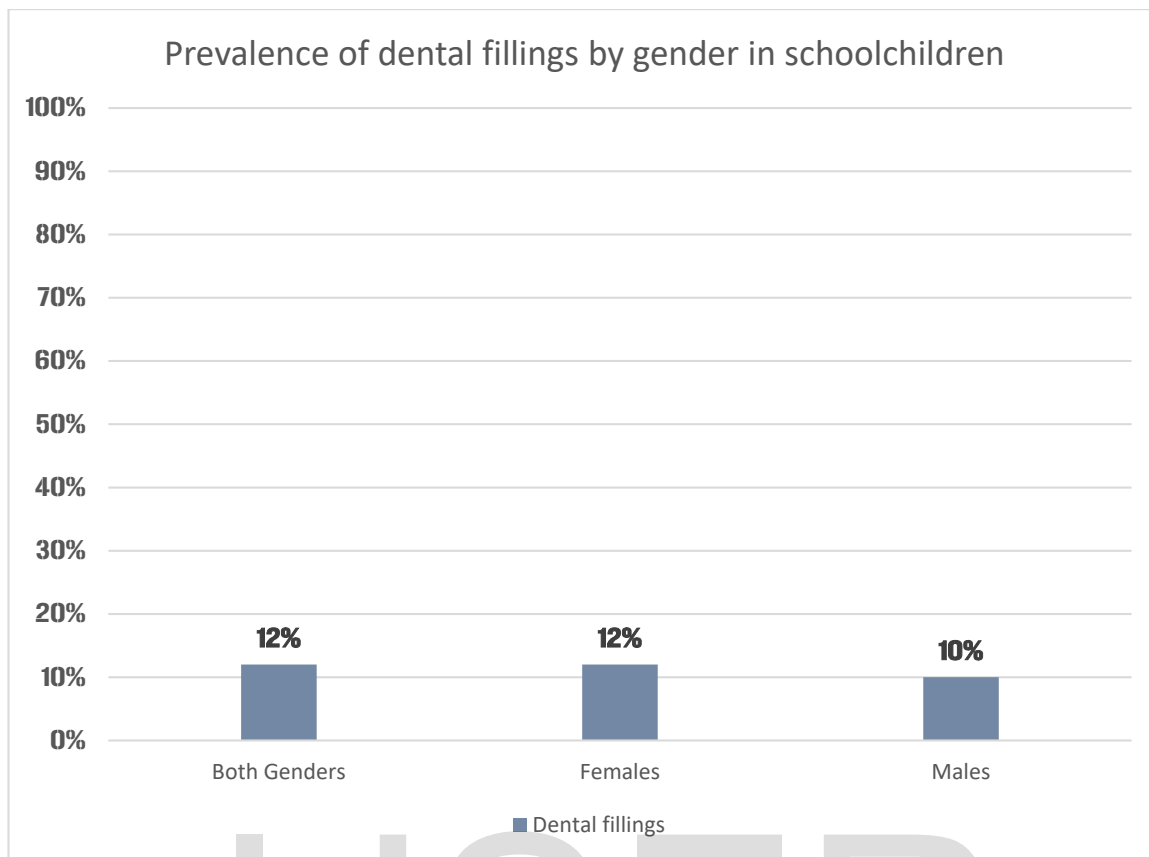
**Table 1: The prevalence of dental caries among schoolchildren**

|              | Total | With caries | Percent | Caries free | Percent | P - value |
|--------------|-------|-------------|---------|-------------|---------|-----------|
| Both Genders | 1076  | 629         | 58%     | 447         | 42%     | 0.007**   |
| Females      | 751   | 459         | 61% ▲   | 292         | 39%     |           |
| Males        | 325   | 170         | 52% ▼   | 155         | 48%     |           |

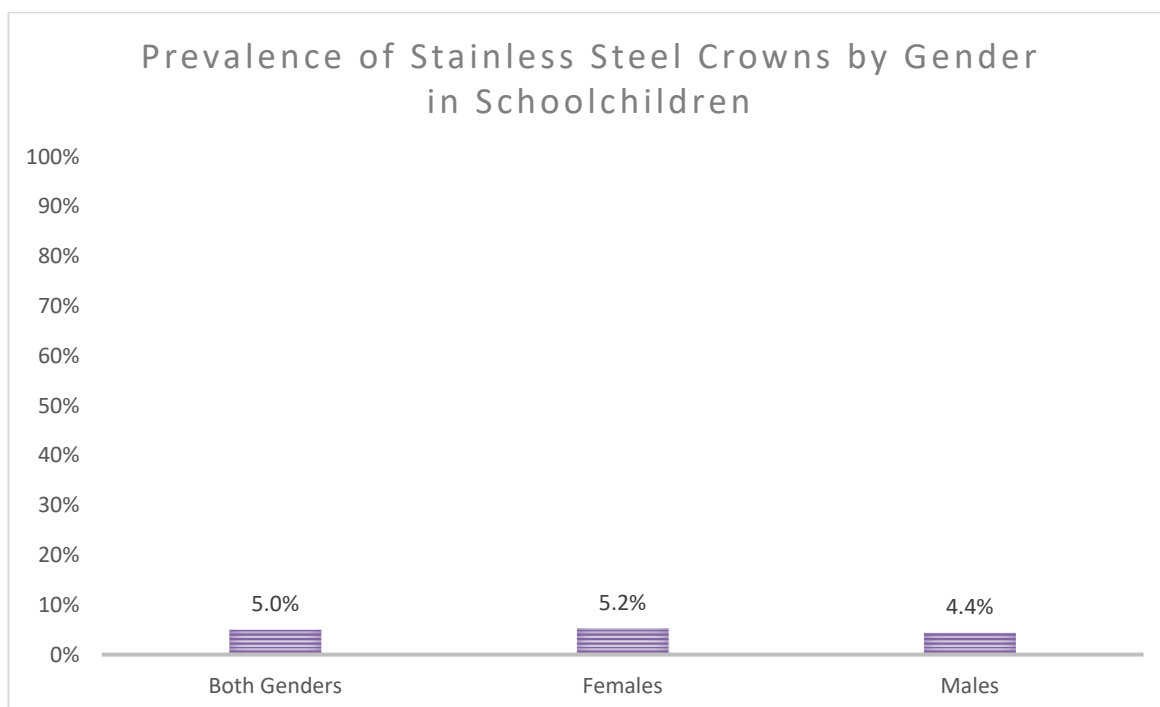
\*\* Statistically significant at 0.01 level



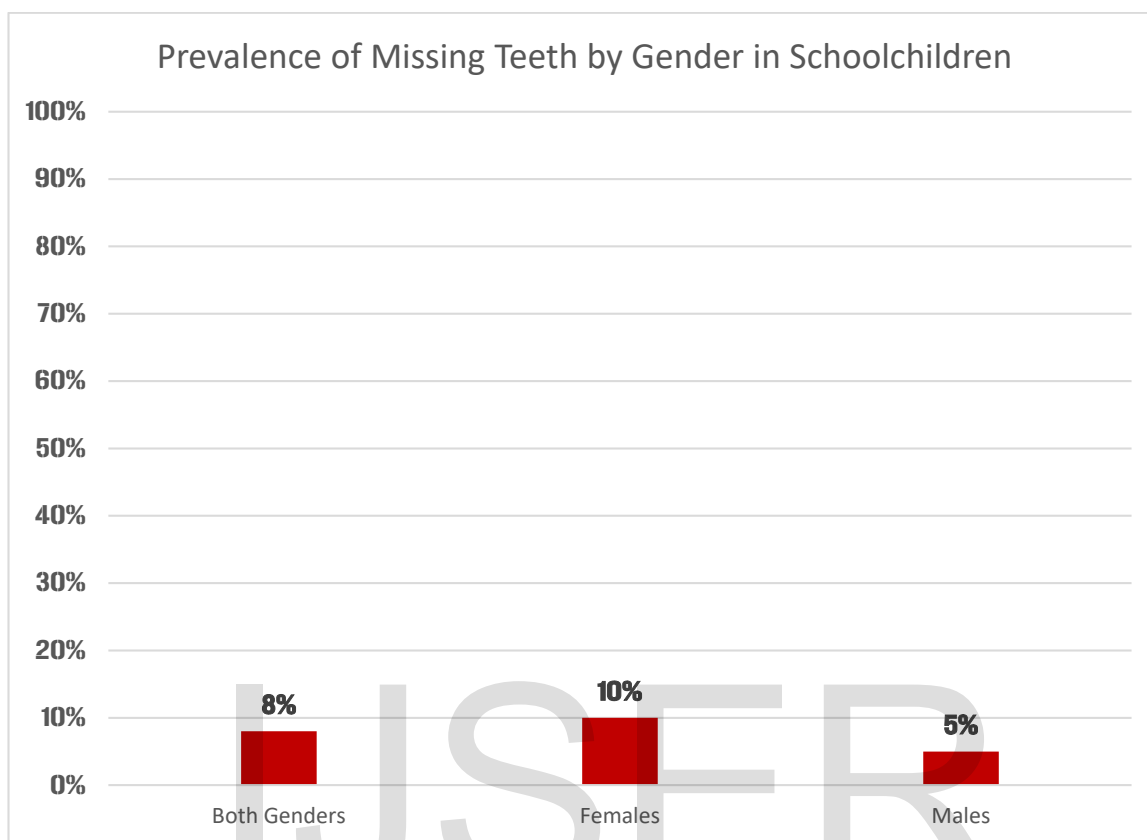
**Figure2: The prevalence of dental caries in schoolchildren.** The chi-square p-value for the differences between genders was 0.007\*\* (statistically significant at 0.01 level)



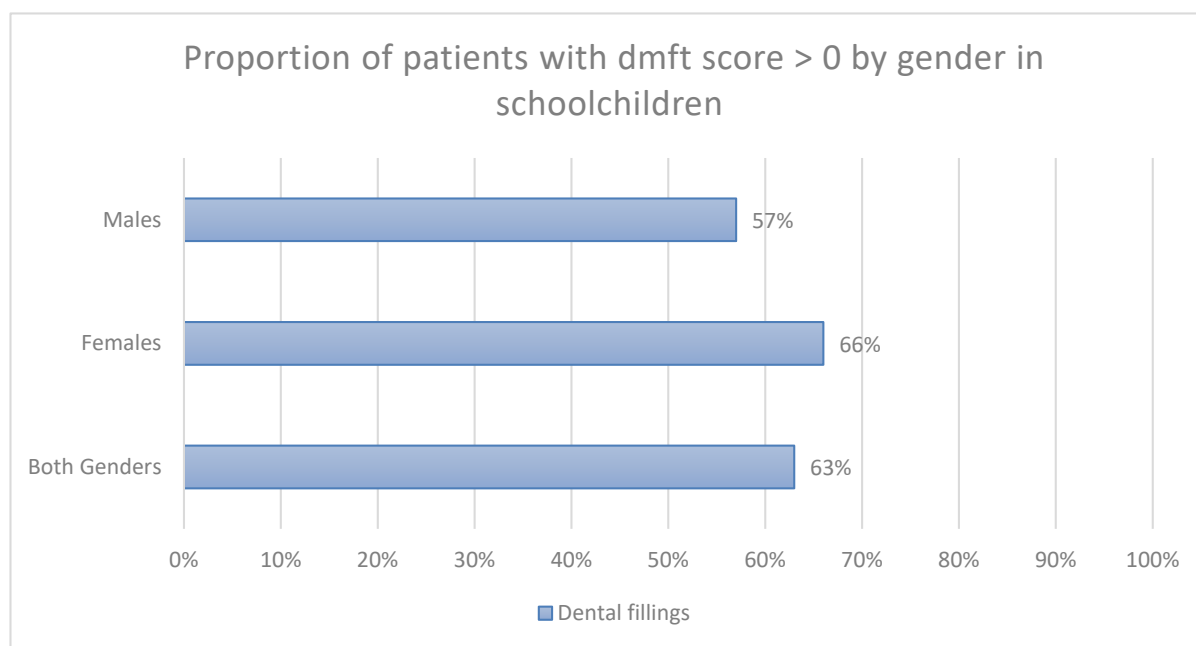
**Figure3: The prevalence of dental fillings in schoolchildren.** The chi-square p-value for the differences between genders was 0.180 (not statistically significant at 0.05level)



**Figure4: The prevalence of dental Stainless Steel Crowns in schoolchildren. The chi-square p-value for the differences between genders was 0.60 (not significant at 0.01 level)**



**Figure5: The prevalence of Missing teeth in schoolchildren. The chi-square p-value for the differences between genders was 0.01\* (statistically significant at 0.05 level)**



**Figure6: Patients with dmft score > 0.** Chi-square for the differences between genders was 7.5(p-value = 0.006\*\*) (statistically significant at 0.01 level)

**Table 2: Mean Dmft scores among males and females**



| Gender         | Frequency   | Mean Dmft score | Standard Deviation (SD) | Standard Error of the Mean (SEM) | P-value (t-test)            |
|----------------|-------------|-----------------|-------------------------|----------------------------------|-----------------------------|
| <b>Females</b> | <b>751</b>  | <b>3.05</b> ▲   | <b>3.43</b>             | <b>0.13</b>                      | <b>0.001**</b><br>(t= 3.28) |
| <b>Males</b>   | <b>325</b>  | <b>2.32</b> ▼   | <b>3.12</b>             | <b>0.17</b>                      |                             |
| <b>Total</b>   | <b>1076</b> | <b>2.83</b>     | <b>3.36</b>             | <b>0.10</b>                      |                             |

**Table 3: The prevalence of toothbrush use among schoolchildren**



| Gender  | Don't use brush |         | Brush once per day |         | Brush more than once per day |         | P-value |
|---------|-----------------|---------|--------------------|---------|------------------------------|---------|---------|
|         | Frequency       | Percent | Frequency          | Percent | Frequency                    | Percent |         |
| Females | 10              | 6% ▼    | 100                | 55%     | 71                           | 39%     | 0.01*   |
| Males   | 8               | 19% ▲   | 21                 | 50%     | 13                           | 31%     |         |
| Total   | 18              | 8%      | 121                | 54%     | 84                           | 38%     |         |

\* Statistically significant at 0.05 level

**Table 4: The prevalence of breastfeeding among schoolchildren**

| Gender  | Normal breastfeeding |   | Formula milk |         | Both types |         | P-value |
|---------|----------------------|---|--------------|---------|------------|---------|---------|
|         | Frequency            | Percent   | Frequency    | Percent | Frequency  | Percent |         |
| Females | 35                   | 21%  | 49           | 30%     | 82         | 49%     | 0.26    |
| Males   | 9                    | 21%  | 18           | 42%     | 16         | 37%     |         |
| Total   | 44                   | 21%   | 67           | 32%     | 98         | 47%     |         |

**Table 5: The prevalence of eating sweets among schoolchildren**

| Gender  | Frequent Eating of sweets and sugars |   |           |         | P -value |
|---------|--------------------------------------|---|-----------|---------|----------|
|         | Yes                                  |   | No        |         |          |
|         | Frequency                            | Percent   | Frequency | Percent |          |
| Females | 70                                   | 39%  | 110       | 61%     | 0.25     |
| Males   | 13                                   | 30%  | 31        | 70%     |          |
| Total   | 38                                   | 21%   | 141       | 79%     |          |

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**Table 6: Visiting dentists among schoolchildren**

| Gender  | Visiting a dentist |         |           |         | P- value |
|---------|--------------------|---------|-----------|---------|----------|
|         | Yes                |         | No        |         |          |
|         | Frequency          | Percent | Frequency | Percent |          |
| Females | 90                 | 48% ▲   | 96        | 52%     | 0.65     |
| Males   | 21                 | 45% ▼   | 26        | 55%     |          |
| Total   | 111                | 48%     | 120       | 52%     |          |

**Discussion:**

The aim of the study was to determine the prevalence, severity, and patterns of caries in 5 to 6 -year-old children in primary schools in the East Riyadh city and show the extent of the disease and children lifestyle

The overall prevalence of dental caries in primary teeth was 58% among the total number of children examined for the present study its was in Boys 52% and Girls 61% in caries.The study showed the .occurrence of caries in both anterior and posterior teeth in most of the children

Figures found here seem to be far from the WHO/FDI goals for 2000; that is, 50% of 5- to 6-year-old children should be caries-free [14]

The prevalence our estimates for caries were low than those reported earlier in studies in different . parts of Saudi Arabia[22,24,23]. [27,29] In Jeddah city reported values for 6-yearold children have been in the region of 70-76% and dmft scores have ranged from 2.9 to 6.3. [27,29] The values seen are also low than estimates for younger children in other parts of the country Prevalence ranging from 45% to 89% and dmft values from 0.2 to 7.12 [26,28,27], have been reported in previous studies. The data on caries pattern helps to determine the appropriate treatment planning for these .children.

On the other hand in a recent study, caries prevalence in military primary schools in Jeddah has been found to be high (approaching the 96%) which is considered much high than what we found in our study here. [15]

When compared to other developing countries, recent studies in United Arab Emirates, a high prevalence of caries among preschool children has been registered as well (70–80%) [17, 18]. Kuwaiti kindergarten schoolchildren who are caries-free at the age of 4-5 years do not represent more than 24–32% of such population according to a national epidemiologic survey done in Kuwait in 2010 [19]. although they are still far from the figures published by many developed countries as we could find in the United Kingdom (40–60% caries prevalence in 5-year-old children) or in Sweden (69% of 3-year-old preschool children are caries-free in 2003) as well as in Brisbane, Australia (66% of 4- to 6-year-old children are caries-free in 2002) [20–21]

A probable explanation for such discrepancy through questionnaire was can be the following: Socio-economic status, improper dietary habits ,effective fluoridation policy, poor oral hygiene practices, ,standard of oral health awareness among public,breastfeed, dietary and oral hygiene lifestyles, the inability to see the dentist ,and Poor awareness of parents.[16,4]



## Conclusion:

The through above findings is possible to implement for an effective program of oral prevention in these children, such health education of the children and parents and teaching them how to take care of their children's dental Emphasis the use of children toothpaste as well babies feeding habits . and parents encouraged to take their children to the dental clinics is also important.

It is time to implement preventive procedures via employing recently graduated dentists who can provide preventive procedures for children through local fluoride application and educational, instructive interventions for parents as well as teachers. These programs can be executed through coordination with the Ministry of Health in remote areas that are deprived of dentistry services. Thus, children in such places can get regular oral examination, healthier diets. I suggest replacing unhealthy, highly sugary snacks and drinks at school with healthy food, which plays an essential role in promoting oral hygiene.

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