

Knowledge, Attitude, Practice and Prevalence of dental caries in school children (Age12 to 16 years) in Najran, Saudi Arabia

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ABSTRACT:

Aim: To assess the knowledge, attitude, and oral health care practices and to study the prevalence of dental caries among male school students in Najran city, Saudi Arabia.

Materials and Method: This study is a questionnaire based cross sectional study involving 300 school going children aged between 12 to 16 years. The children were selected using stratified random sampling method. Dental caries was recorded using Decayed, Missing, and Filled Teeth (DMFT) index. Data on oral health knowledge, attitude, and behavioral practices were collected by means of a self-administered questionnaire.

Results: The rate of caries prevalence is 76.3% and the incidence of dental caries was found to be highest in the age group of 16 years. A majority of the students (62%) said they used toothbrush while 50% of the students reported the use of a chewing stick.

Conclusion: Lack of knowledge regarding oral health predisposes to dental caries. Children who had not been exposed to a dental visit for a long time tend to fear dental visits.

Keywords: Knowledge, Attitude, Practice, dental caries, school children, Najran

1. INTRODUCTION:

Oral health has remained as an integral part of an individual's general health and over all well-being¹⁻³. Good oral health practices are necessary from a young age to ensure positive long term dental health and hygiene⁴. One of the most common oral diseases is dental caries. Dental caries remains a major oral health disease-affecting children world-wide⁵. About 90% of school children worldwide and most adults have experienced caries, with the disease being most prevalent in Asian and Latin American countries⁶. For children in particular, poor oral health can have negative impacts on quality of life and academic performance at school⁷. Apart from causing chronic pain and discomfort, untreated dental caries can impact daily activities in terms of play, sleep, eating and school activity^{8,9}. Maintaining good oral hygiene is considered a lifelong habit. Moreover, these oral health habits are said to begin in an early stage of life.¹⁰ In order to follow healthy oral habits, it is important to have good knowledge and attitude toward oral health.^{11,12}

Oral health education is believed to be a cost-effective method for promoting oral health if done through schools, where all school children irrespective of their socioeconomic status or ethnicity can be reached¹³. To create such oral health education, the assessment of knowledge and attitude is essential¹⁴. This knowledge will, in theory, lead to a change in attitude, which will in turn lead the individual to make changes in their daily life¹⁵. The KAP (knowledge, attitude, practice) model of oral health education is often the foundation of most health education programs. According to this model, adequate oral health practices occur due to healthy attitudes which in turn develop due to proper knowledge¹⁶.

2. MATERIALS AND METHODS:

This study was a cross sectional survey which included 300 students, aged between 12 to 16 years. Boys attending government schools were selected for the study. The school and the students were selected by Random sampling method. Prior consent was obtained from the school authorities. Children from this age group were selected as it would be easy for them to understand and answer the questionnaire. 60 students from each age group were selected. The questionnaire consisted of three sections, oral health knowledge and prevention, oral health practice and dental visits. A total of 30 questions were asked relating to demographics, oral health practice, oral health knowledge and prevention and utilization of dental services. The questionnaire was in Arabic. It was distributed among the children and the importance of answering was explained. Children were asked to answer the questionnaire under the supervision of teachers and communication between the students was not allowed while answering the questions.

The clinical oral examination was conducted in the school classroom according to the WHO criteria. The prevalence of dental caries was recorded using the Decayed, Missing, and Filled Tooth (DMFT) Index. The data obtained from the questionnaire was entered using SPSS package.

3. RESULTS:

A total of 300 students from government schools were selected. The age group selected in our study was 12 to 16 years (table 1). On examination it was found that a total of 76.3% of the students had caries and 23.6% students were caries free. Caries incidence was highest among children aged 16 years and lowest among children in the age group of 14 years (63.3%) (Table 2). DMFT score was recorded for all the groups, the scores was highest for decayed, followed by filled teeth and least was missing in all age groups in the same order. It was found that 90% of children belonging to age group 16 years had dental caries, and 40% in same age had a filling in their teeth, which is the highest percentage in the selected age. Among children of 15 years, only 10% of the children had missing teeth, which it is the lowest percentage in the selected age (table 3).

The questionnaire was based on 30 questions. There were questions based on knowledge of oral health with regard to dental caries and they had three options: yes, no and don't know (table 4). With regard to questions on different methods used for cleaning teeth, 62% students said they used toothbrush, 50% said they used chewing stick, 14% used dental floss and 16% said they didn't use anything (table 5). When asked about the frequency of brushing, 25% said they brushed once daily, 15% said they brushed twice a day, 7% said they brushed once a week whereas 10% said 2-3 times a week and 5% said 2-3 times a month (table 6). When asked about the reason for not using tooth brush, 7% said they didn't know the reason and 6.67% said that they had no time to brush (table 7). 23% said they used fluoridated toothpaste (Table 8). With regard to questions pertaining to the frequency of visiting a dentist, 4% said they don't remember when they had visited a dentist, whereas 34.33% had visited the dentist less than a year ago, 15.3% said that they had visited a dentist 1-2 years ago (Graph 2) 43% said that they had never visited a dentist (table 9). A few of the students (16.6%) felt that there was no need to visit a dentist, 11.3% gave fear of pain as a reason for not visiting a dentist and 7.3% said that their parents didn't take them to a dentist (table 10). 17% said they had visited dentist in past 12 months however only 1% said they visited more than 4 times in 12 months (table 11). 23% of the students had last visited a dentist for filling of teeth, 17% students underwent extraction (table 12). When asked about sugar consumption and its frequency, majority of them had multiple exposure to sugar (table 13).

4. DISCUSSION:

This study was aimed at studying the knowledge, attitude, practices and prevalence of dental caries in 300 school children who belonged to the age group 12 to 16 years. The results indicated a very high incidence of dental caries (76.3%) in students who belonged to the age group of 16 years. Only 23 % were caries free, which is a matter of concern. The rate of caries prevalence was found to be 62% in 12-year old schoolchildren from Baghdad, Iraq which was lesser than our study.¹⁷

Dental caries is a preventable disease and if it is noticed at an early stage, children cooperate better and parents save their valuable time and money spent on dental treatments. Dental caries is a social problem and can be prevented by increasing the knowledge among children, teachers and parents. Students should be aware of the importance of regular visits to a dentist. Parent teacher meetings should be held where importance of oral hygiene can be discussed.

In this study, it was found that there was lack of knowledge among the children with regard to brushing, flossing and regular dental visits. Lack of knowledge is one of the of the risk factors for increasing rate of caries.¹⁸

Based on the questions asked regarding dental knowledge and awareness, the following findings were observed A large number students (80%) said they are aware about dental caries. 77% consumed milk with sugar (table 13). Only 15% students understood the importance of brushing twice daily. Less than half, (23%), of the children, had actually heard about fluoride. In most of the cases there was lack of knowledge and special attention was required.¹⁹Lack of knowledge makes dental visit very scary. Those children who have not been exposed to a dental visit for long time tend to fear more.²⁰ In present study ,11% of the students didn't visit dentist due to fear of pain.

A KAP model is one of the best method to assess knowledge and behavior. Various community based screening and treatment camps can help in increasing awareness among students and it helps to eliminate dental fear.

Toothbrushes were the most commonly used oral hygiene aids (62%), in our study and this is in agreement with findings obtained among 12-14 year-old children in Saudi Arabia and Kuwait by Al- Sadhan S.²¹ However, as for the use of dental floss to clean in-between teeth was still not very popular in current study(14%). The most common reason for not using a toothbrush was given as not knowing the reason whereas only 7% said that they forgot to brush and a very small percentage (0.33%) said that nobody brushed in their family.(table 7).

The prevalence rate of dental caries among school children according to W.H.O in 2007 is 60%– 90%.²²In present study the prevalence rate was 76.3%. The prevalence of dental caries among 3- 14 years old children was found to be 80.92% in Maharashtra which is higher than reported in the present study.²³Limitation of our study was, it was a cross sectional study, only governmental schools were selected randomly. So results of our study can only be generalized to populations with characteristics similar to the children who participated in the study.

5. CONCLUSION:

It can be concluded that there is a lack of knowledge among school children regarding brushing, flossing, and regular dental visits. Lack of knowledge is a risk factor for increasing rate of caries.

6. CONFLICT OF INTEREST

We declare that there is no conflict of interests and no financial support was received during the study.

Table 1: Age Distribution

| Age group | Frequency |
|-----------|-----------|
| 12 | 60 |
| 13 | 60 |
| 14 | 60 |
| 15 | 60 |
| 16 | 60 |

Table 2: Prevalence Of Caries By Age

| Age | With caries | Caries Free |
|--------------|-------------|-------------|
| 12 | 49 | 11 |
| 13 | 41 | 19 |
| 14 | 38 | 22 |
| 15 | 47 | 13 |
| 16 | 54 | 6 |
| TOTAL | 229 | 71 |

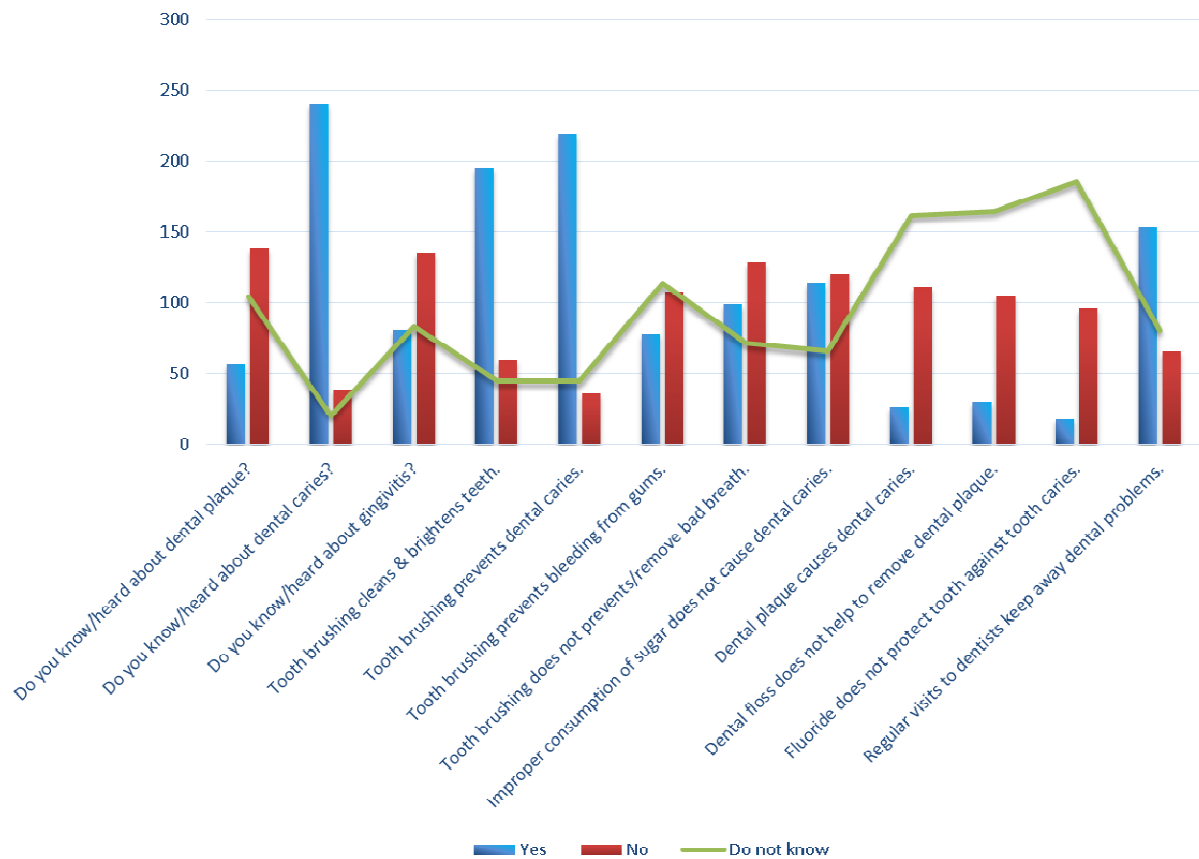
Table 3: DMFT Scores

| Age | D | Percentage | M | Percentage | F | Percentage |
|-----|----|------------|---|------------|----|------------|
| 12 | 49 | 81.67% | 7 | 11.67% | 20 | 33.33% |
| 13 | 41 | 68.33% | 9 | 15% | 17 | 28.33% |
| 14 | 38 | 63.33% | 8 | 13.33% | 12 | 20% |
| 15 | 47 | 78.33% | 6 | 10% | 18 | 30% |
| 16 | 54 | 90% | 7 | 11.67% | 24 | 40% |

Table 4: Knowledge about Dental Diseases and their prevention(n=300)

| | Yes (Agree) | centage | No (Disagree) | centage | Do not Know | centage |
|--|----------------|---------|------------------|---------|-------------------|---------|
| Know or heard about dental Plaque. | 57 | 19% | 138 | 46% | 105 | 35% |
| Know or heard about dental caries. | 240 | 80% | 39 | 13% | 21 | 7% |
| Know or heard about gingivitis. | 81 | 27% | 135 | 45% | 84 | 28% |
| Tooth brushing cleans & brightens teeth. | 195 | 65% | 60 | 20% | 45 | 15% |
| Tooth brushing prevents dental caries. | 219 | 73% | 36 | 12% | 45 | 15% |
| Tooth brushing prevents bleeding from gums. | 78 | 26% | 108 | 36% | 114 | 38% |
| Tooth brushing does not prevents/remove bad breath. | 99 | 33% | 129 | 43% | 72 | 24% |
| Improper consumption of sugar does not cause dental caries. | 114 | 38% | 120 | 40% | 66 | 22% |
| Dental plaque causes dental caries. | 27 | 9% | 111 | 37% | 162 | 54% |
| Dental floss does not help to remove dental plaque. | 30 | 10% | 105 | 35% | 165 | 55% |
| Fluoride does not protect tooth against tooth caries. | 18 | 6% | 96 | 32% | 186 | 62% |
| Regular visits to dentists keep away dental problems. | 153 | 51% | 66 | 22% | 81 | 27% |

Responses of school children to questions on knowledge about Dental diseases & prevention



graph: 1

Table 5: Aids used for cleaning teeth (n=300)

| | Number | Percentage |
|-----------------------------|--------|------------|
| Toothbrush | 186 | 62% |
| Dental Floss | 42 | 14% |
| Chewing stick/Miswak | 150 | 50% |
| Mouthwash | 69 | 23% |
| Toothpick | 129 | 43% |
| Do not use anything | 48 | 16% |

Aids used for cleaning teeth

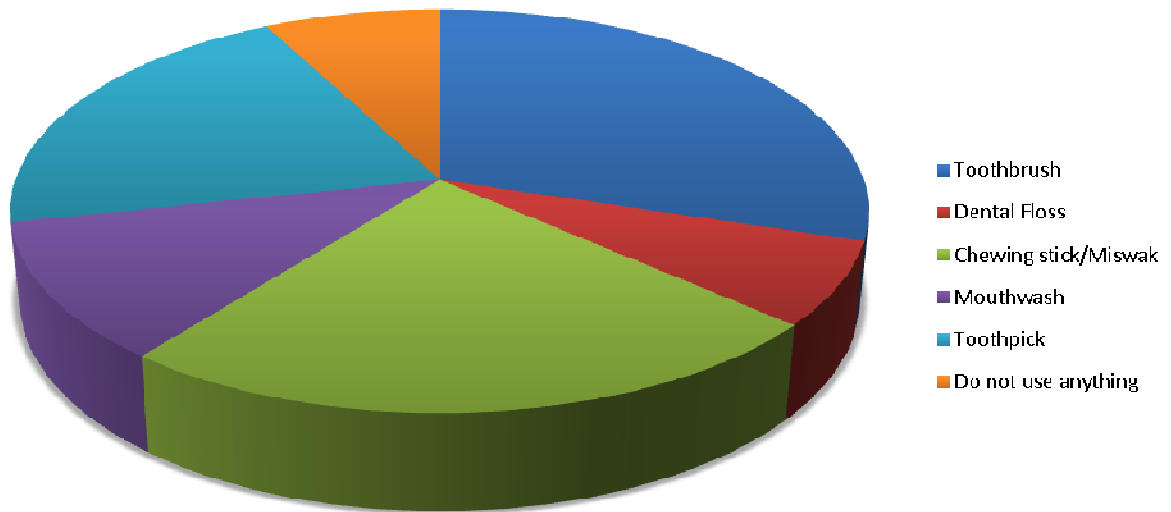


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Table 6: Frequency of tooth brushing (n=300)

| | Number | Percentage |
|-----------------------------------|--------|------------|
| Once a day | 75 | 25% |
| Twice a day | 45 | 15% |
| Once a week | 21 | 7% |
| Several times a week (2-3 times) | 30 | 10% |
| Several times a month (2-3 times) | 15 | 5% |

Frequency of toothbrushing by school children

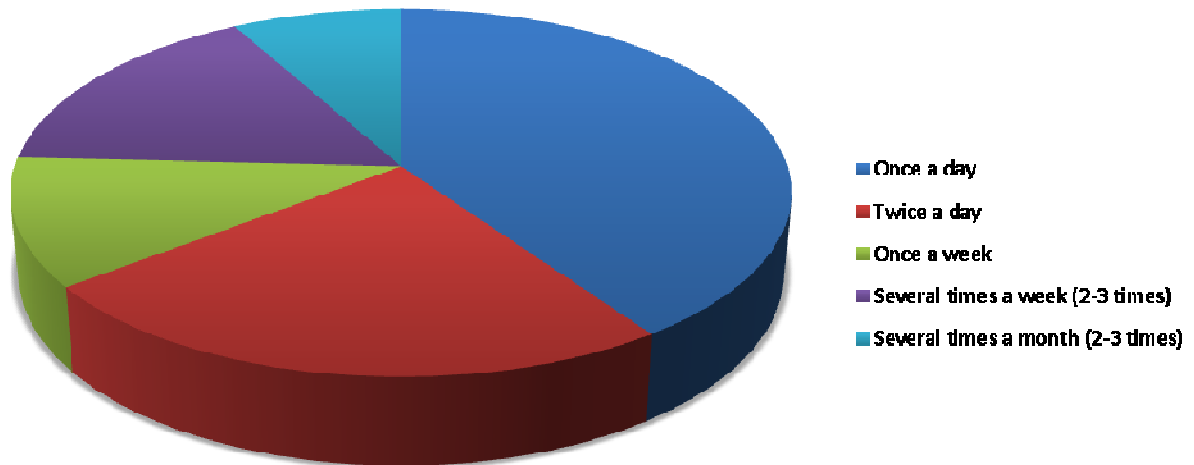


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Table 7: Reasons for not using tooth brushing (n=300)

| | Number | Percentage |
|--------------------------------------|--------|------------|
| Parents do not provide | 14 | 4.67% |
| Parents do not instruct/motivate | 12 | 4% |
| Nobody brush teeth in my family | 1 | 0.33% |
| Always forget to brush my teeth | 21 | 7% |
| Do not know the benefit of brushing | 5 | 1.67% |
| Do not like the smell of tooth paste | 5 | 1.67% |
| Gums are bleeding when brushing | 13 | 4.33% |
| No time for brushing | 20 | 6.67% |
| Do not know the reason | 23 | 7.67% |

Reasons for not using tooth brushing

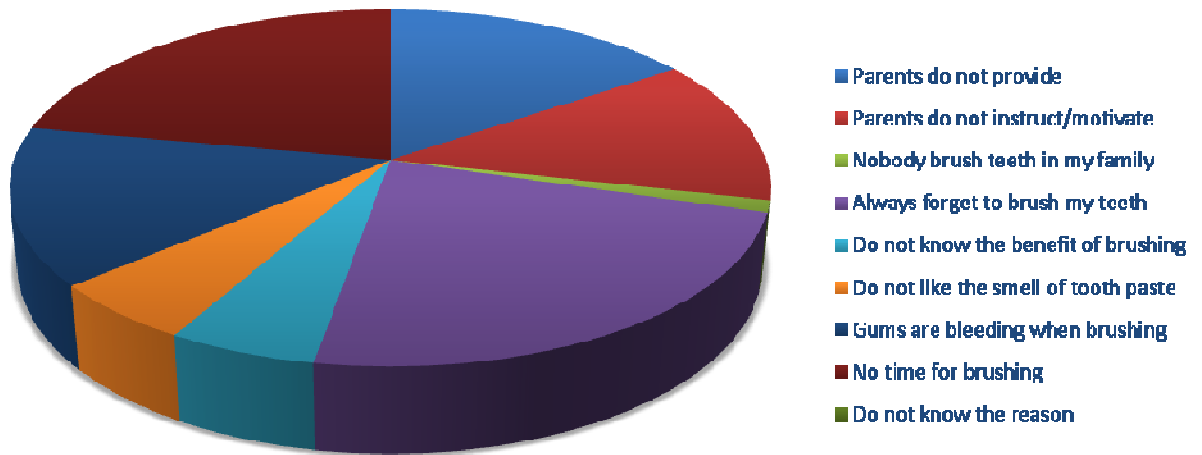


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Table 8: Use of fluoridated toothpaste for cleaning teeth (n=300)

| | Yes | No |
|-------------------------------|-----|-----|
| Use of fluoridated toothpaste | 69 | 231 |

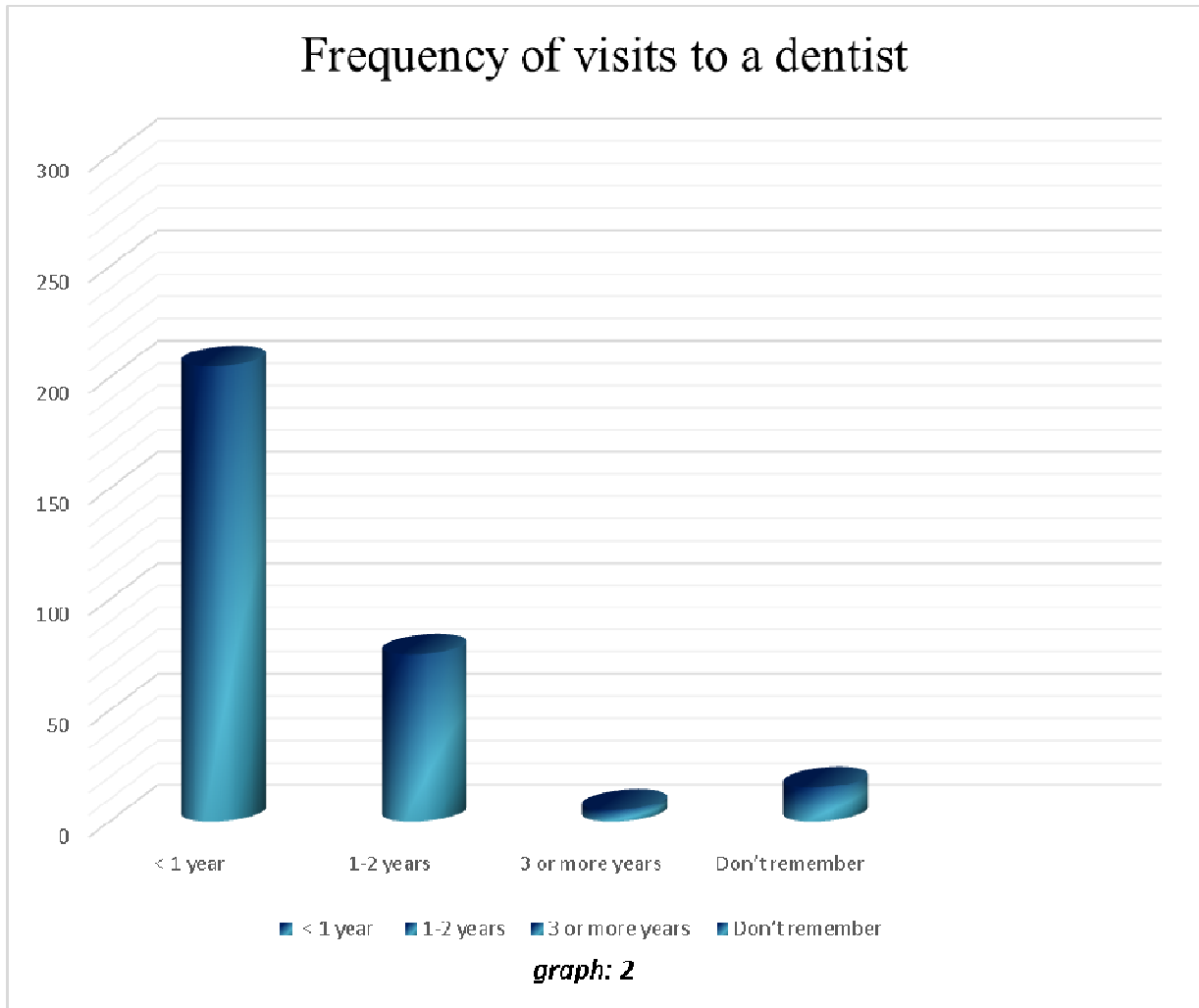


Table 9: Visits to the dentist (n=300)

| Have visited | Haven't visited | Percentage of school children who have visited a dentist |
|--------------|-----------------|--|
| 129 | 171 | 43% |

Table 10: Reasons for not visiting a dentist (n=300)

| | Number | Percentage |
|-------------------------------------|--------|------------|
| No need to visit dentist | 50 | 16.67% |
| Difficulty in getting appointment | 11 | 3.67% |
| Fear of pain | 34 | 11.33% |
| Parents did not take me to dentists | 22 | 7.33% |
| Don't know/Do not have any idea | 12 | 4% |

Reasons for not visiting a dentist

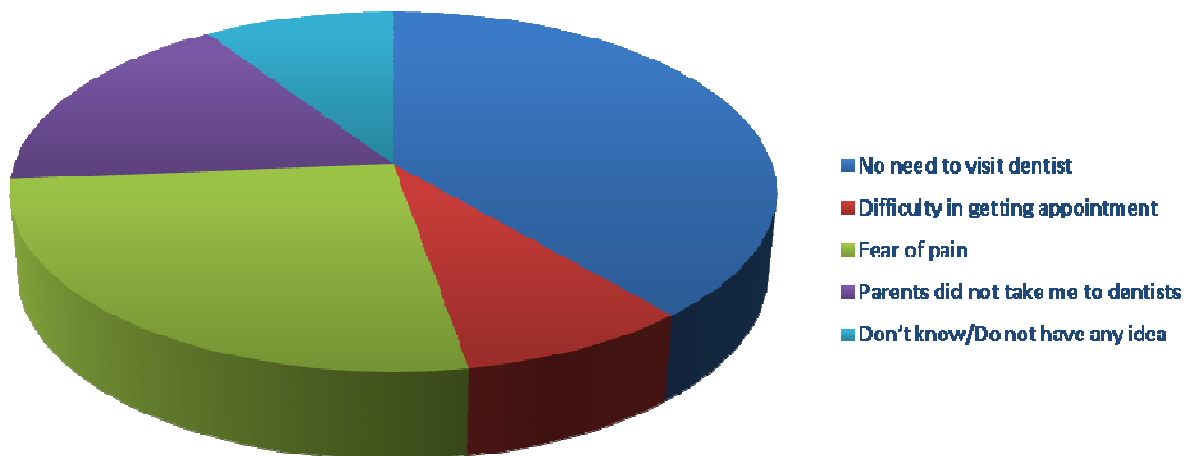


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Table 11 : Frequency of visits to a dentist during the past one year (n=300)

| | Number | Percentage |
|------------------------------|--------|------------|
| Once | 51 | 17% |
| Twice | 24 | 8% |
| 3 times | 12 | 4% |
| 4 times | 6 | 2% |
| More than 4 times | 3 | 1% |
| I do not know/don't remember | 12 | 4% |

Table 12: Reasons for last dental visit (n=300)

| | Number | Percentage |
|----------------------------|--------|------------|
| Routine checkup | 6 | 2% |
| Filling | 68 | 22.67% |
| Extraction | 51 | 17% |
| Pain | 37 | 12.33% |
| Dental/Tooth trauma | 3 | 1% |
| Orthodontic care | 3 | 1% |
| Do not know | 3 | 1% |

Reasons for last dental visit

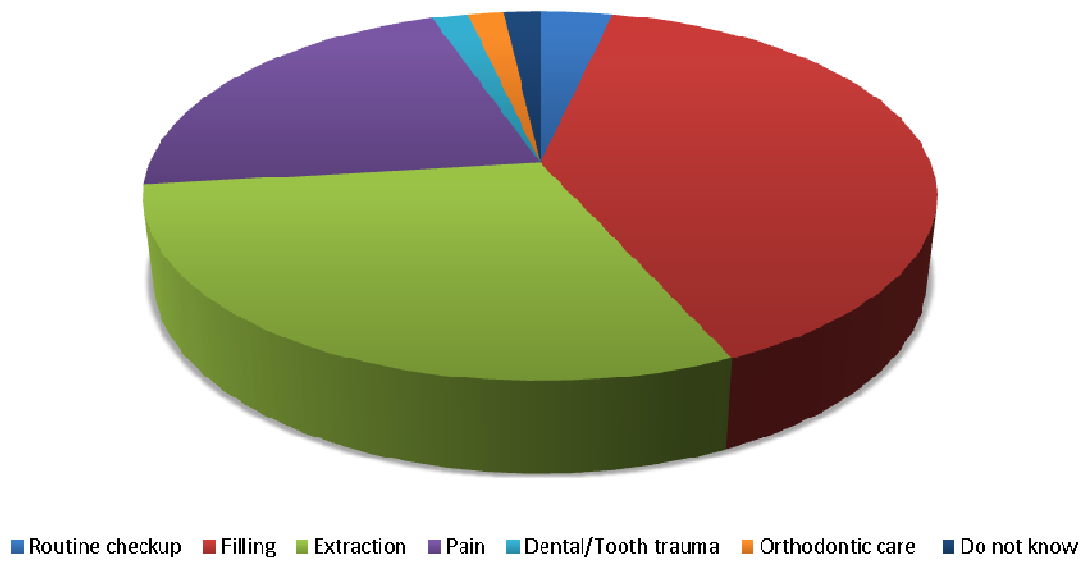
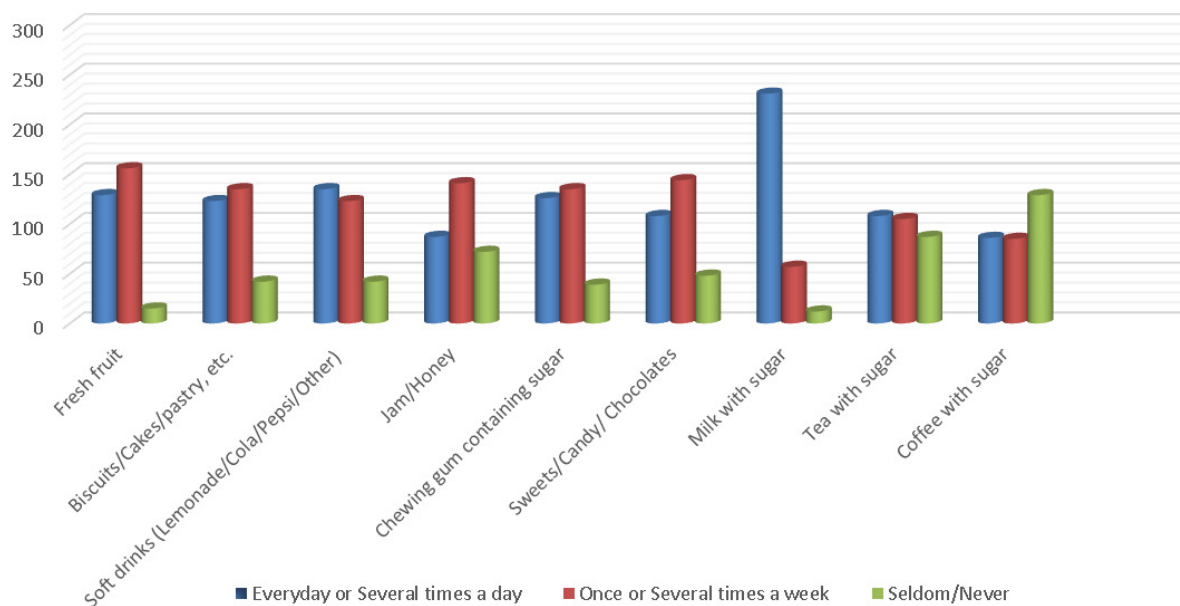


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Table 13: Frequency of consumption of various food & drinks (n=300)

| | Every day Or Several times a day | Percentage | Once Or Several times a week | Percentage | Seldom/ Never | Percentage |
|---|----------------------------------|------------|------------------------------|------------|---------------|------------|
| Fresh fruit | 129 | 43% | 156 | 52% | 15 | 5% |
| Biscuits/Cakes/pastry, etc. | 123 | 41% | 135 | 45% | 42 | 14% |
| Soft drinks (Lemonade/Cola/Pepsi/Other) | 135 | 45% | 123 | 41% | 42 | 14% |
| Jam/Honey | 87 | 29% | 141 | 47% | 72 | 24% |
| Chewing gum containing sugar | 126 | 42% | 135 | 45% | 39 | 13% |
| Sweets/Candy/ Chocolates | 108 | 36% | 144 | 48% | 48 | 16% |
| Milk with sugar | 231 | 77% | 57 | 19% | 12 | 4% |
| Tea with sugar | 108 | 36% | 105 | 35% | 87 | 29% |
| Coffee with sugar | 86 | 28.67% | 85 | 28.33% | 129 | 43% |

Frequency of consumption of various food & drinks



graph: 3

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