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Original Research Paper

Knowledge and Awareness of Saudi Teenage Boys towards the Maintenance of Oral Hygiene and Dietary Needs; A survey-based Study in Riyadh

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Introduction: Overall the oral health status is directly associated with the dietary intake of a person. After an average age of 13 years, persons with a larger number of natural teeth are those who have a better diet quality than the remaining. Materials and Methods: This is a cross-sectional study conducted among Saudi teenage boys using an online survey. Saudi teenage boys (13-19 years of age) willing to participate in this study were requested to fill up the survey. Results: Results revealed a total of 1610 teenage Saudi boys responding to the survey, which were divided into two age groups. 25.6% were 13-16 years old and 74.4% were 17-19 years. The highest number of respondents (59.4%) visited their dentists only when they had pain, with 41.5% of them who have not visited their dentist in more than 2 years. Conclusion: There is a need to improve the knowledge and attitude of Saudi teenage boys regarding their oral health maintenance.

Keywords: Teenagers health, Knowledge, Attitude, Oral health.

INTRODUCTION

The human anatomy is a complex system in which the organs are interconnected and interdependent of each other, which means that one area of the body can have an impact on different parts and even the entire body. If someone has a problem with the teeth and gum, this can pose problems with other areas as poor oral hygiene can worsen the pre-existing medical conditions such as diabetes and in some cases aggravate heart disease (Chapple et al, 2017; Nazir, 2017).

The maintenance of good oral hygiene and dietary habits is not limited to avoidance of disease only; in fact, it can lead to an improvement in facial esthetics. The more a person looks good is directly proportional to an increase in personal confidence which can be seen as an improvement in the overall quality of life. Having esthetic facial and dental characteristics are mostly sought by adolescents as well as young adults (Gavric et al, 2015; Soares et al, 2018).

To avert any health issues which may be a result of oral issues or enhancement of confidence through better esthetics, practicing good oral hygiene is very important from an early age. Therefore, it is crucial for everyone especially teenagers to understand the need of having adequate awareness regarding how to maintain their oral hygiene and dietary needs in order to reduce the chances of contracting any such disease or improve facial esthetics. The level of awareness is in turn affected by various factors such as the educational level of guardians, their socioeconomic status, etc (Zhou et al, 2016; Shavi et al, 2015).

Overall, the oral health status is directly associated with the dietary intake of a person. After an average age of 13 years, persons with a larger number of natural teeth are those who have a better diet quality than the remaining. It is understood that if a person has more than or equal to 21 natural teeth, he/she has a more chance of unimpaired intake of fruit, vegetables, and nuts which ensures a better diet in the future as well. Although dentures are beneficial where less than 21 natural teeth remain (Logan et al, 2020).

Several studies have been done to gauge the level of awareness towards oral hygiene and dietary habits. These studies overwhelmingly indicate/conclude that as compared to western teenagers and children, the eastern group had a lower level of awareness. However, both groups had comparable dietary habits. Globalization has made the eastern group at par

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with the western ones in terms of dietary habits, but oral hygiene practices have been stagnant. Also, effort on the part of the parents was found to be missing in the eastern group (Kaur, 2007).

Another study shows that amongst the population of 10–18-year olds in Saudi Arabia, girls had better awareness about dental health. However, attitudes toward dental health were not significantly different between genders (Al Subait et al, 2016)

One of the studies shows that a high percentage of untreated caries is seen among teenage male students aged 15–17 years in Abha, Saudi Arabia. This study also shows that caries incidence was highest in posterior sections than the anterior sections and in mandibular more than maxillary teeth and the most disturbed tooth by dental caries is generally the first permanent molar. Caries prevalence was highest in posterior segments than the anterior segments and in mandibular more than maxillary teeth, nevertheless, the study suggests that there is an urgent need to convince students to adopt preventive oral health measures and seek dental treatment to enhance the retention of natural teeth into advanced age (AlShahrani, 2018).

STUDY HYPOTHESES

Teenagers lack awareness of maintaining oral hygiene and have a high consumption of sweet food.

AIMS OF THE STUDY

- To determine the level of oral hygiene-related knowledge among teenagers.
- To assess their dietary habits.
- To compare the knowledge levels on the basis of age.

MATERIALS AND METHODS

Study Design

This is a cross-sectional study conducted among Saudi teenage boys using an online survey.

Study Sample

Saudis teenage boys (13-19 years of age) willing to participate in this study were requested to fill up the survey. Data was collected from various schools in Riyadh city. A total of 1610 teenagers filled up the survey.

Study Instrument

An online questionnaire was designed using Google Forms with questions related to age, grade of school followed by knowledge and awareness-related questions.

Instrument Validity and Reliability

A pilot study was conducted by letting the survey be filled by 20 participants and the data was inserted in SPSS version 22 to determine the reliability by using Chronbach's coefficient alpha (Value was .822). Validity of the questionnaire was tested by sending it to experienced researchers in REU and no changes were made.

Statistical Analysis

Collected data was analyzed using SPSS version 22, where descriptive as well as inferential statistics was conducted. Comparisons between groups will be made with the value of significance kept under 0.05 using Chi-square test.

RESULTS

Results revealed a total of 1610 teenage Saudi boys responding to the survey, which were divided into two age groups. 25.6% were 13-16-year-olds and 74.4% were 17-19 years. The highest number of respondents (59.4%) visited their dentists only when they had pain, with 41.5% of them not visited their dentist in more than 2 years. 14% of the teenagers did not brush at all, whereas only 14.8% of them brushed their teeth for more than 2 minutes. Rests of the findings are explained in the tables below.

DISCUSSION

This study was undertaken to gauge the knowledge and awareness of Saudi teenage boys towards the maintenance of oral hygiene and dietary needs. A total of 1610 teenagers participated in the survey, who were further segregated into two age groups 13-16 years (25.5%) and 17-19 years (74.5%).

It was noted during the survey that 6.3% of the respondents have never visited a dentist, in another study, it was seen that 26.4% had never in their lives visited a dentist (Desai & Patel, 2018). A majority (59.4%) will only visit if they have pain. In another study, it was seen that 45.3% of the participants had never visited a dentist (John et al, 2017). Even those who have visited, 41.5% had their last visit 2 or more years ago. A staggering 14% of the teenagers said that they do not brush at all and 35.8% spend a minute while brushing, irrespective of the frequency of brushing, in another study conducted it was found that the majority of the respondents (65%) were brushing only once daily, 27.5% were brushing twice daily, 3.5% were brushing occasionally, and only 4% were brushing more than twice daily (Hussain, Perumal & Kumar, 2018). Also, in a study, it was noted that a majority of the participants (68.6%) brushed at least once a day and 29.5% brushed twice (John et al, 2017). A majority (64.4%) of the teenagers consume sweets 1-3 times daily and 25.5% 4-6 times daily. Similarly, 26.2% of the respondents consume soft drinks daily, however, 15% never had a soft drink.

43.6% of the respondents either had no knowledge, that regular brushing prevents gum bleeding or said that it does not. In another study undertaken it was seen that 43.7% of the participants thought that poor brushing habit is the reason for bad oral health (Desai & Patel, 2018).

60.9% of the respondents either had no knowledge, that using fluoride toothpaste can strengthen teeth or said that it does not. In a similar study, it was noted that 45.5% of the participants used fluoridated toothpaste (Desai & Patel, 2018).

20.0% of the respondents either had no knowledge, that general health has an impact on oral health or said that it does not. In another study, it was found that satisfactory oral hygiene practices (material and frequency) were observed amongst teenagers. However, oral hygiene techniques were flawed (Das et al, 2017). Also, another similar study showed that 76% have awareness of tooth brushing and oral hygiene maintenance and the remaining 24% lack awareness due to various reasons such as socioeconomic status (Santhanam & Geetha, 2019).

Table 1: Responses to the survey questions by study participants with their frequencies

Survey Questions	Frequencies
Demographic:	
Age groups:	13-16 years: n=412 (25.6%) 17-19 years: n=1198 (74.4%)
Attitude:	
Frequency of dental visits:	Every 6-12 months: 15.9% Occasionally: 18.5% When I have pain: 59.4% Never: 6.3%
History of last dental visit:	Less than 6 months: 19.6% Last 6-12 months: 18.9% Last 1-2 years: 20% 2+ years: 41.5%
Frequency of tooth brushing:	Don't brush at all: 14% Once per day: 50% Twice per day: 16.7% More than twice per day: 4.8%
Time spent on tooth brushing:	Don't brush at all: 14% 1 minute: 35.8% 2 minutes: 35.4% More than 2 minutes: 14.8%
Frequency per day of eating sweets:	Never: 6.7% 1-3 times: 64.4% 4-6 times: 25.7% More than 6 times: 3.2%
Frequency of drinking soft drinks:	Never: 15% Once per week: 28.9% 3-4 days a week: 20.1% Most of the days: 9.8% All days of the week: 26.2%
Knowledge:	
Too much sweets consumption cause tooth decay:	Yes: 83.5% No: 7.4% Don't know: 9.1%
Gum bleeding means inflamed gums:	Yes: 50.5% No: 17.1% Don't know: 32.3%
Regular brushing prevents gum bleeding:	Yes: 56.5% No: 15.8% Don't know: 27.8%
Dental plaque means soft debris on the tooth surface:	Yes: 44.5% No: 10.8% Don't know: 44.7%
Dental plaque leads to dental caries:	Yes: 40.4% No: 12.2% Don't know: 47.4%
Caries affects the teeth appearance:	Yes: 92.8% No: 2.7% Don't know: 4.5%
Sweets consumption affect teeth adversely:	Yes: 90.3% No: 3.9% Don't know: 5.8%
Fizzy drinks affect teeth adversely:	Yes: 91.1% No: 2.6% Don't know: 6.3%
Using fluoride toothpaste can strengthen teeth:	Yes: 39.1% No: 13.6% Don't know: 47.3%
General health has an impact on oral health:	Yes: 80% No: 7.7% Don't know: 12.3%

Table 2: Comparison of survey responses on the basis of age groups

Survey Questions	13-16-year-olds	17-19-year-olds	P-value
Attitude:			
Frequency of dental visits:	No statistically significant difference		.347
History of last dental visit:	No statistically significant difference		.097
Frequency of tooth brushing:	Don't brush at all: 8% Once per day: 33% Twice per day: 49% More than twice per day: 10%	Don't brush at all: 4% Once per day: 30% Twice per day: 50% More than twice per day: 15%	.030
Time spent on tooth brushing:	No statistically significant difference		.190
Frequency per day of eating sweets:	No statistically significant difference		.249
Frequency of drinking soft drinks:	Never: 31% Once per week: 13% 3-4 days a week: 22% Most of the days: 9% All days of the week: 24%	Never: 25% Once per week: 9% 3-4 days a week: 19% Most of the days: 17% All days of the week: 30%	.007
Knowledge:			
Too much sweets consumption cause tooth decay:	No statistically significant difference		.253
Gum bleeding means inflamed gums:	No statistically significant difference		.493
Regular brushing prevents gum bleeding:	Yes: 64% No: 11% Don't know: 25%	Yes: 54% No: 17% Don't know: 29%	.024
Dental plaque means soft debris on the tooth surface:	No statistically significant difference		.083
Dental plaque leads to dental caries:	Yes: 33% No: 12% Don't know: 55%	Yes: 43% No: 12% Don't know: 45%	.023
Caries affects the teeth appearance:	Yes: 89% No: 5% Don't know: 6%	Yes: 94% No: 2% Don't know: 4%	.027
Sweets consumption affect teeth adversely:	No statistically significant difference		.792
Fizzy drinks affect teeth adversely:	Yes: 87% No: 6% Don't know: 7%	Yes: 92% No: 2% Don't know: 6%	.003
Using fluoride toothpaste can strengthen teeth:	Yes: 47% No: 13% Don't know: 40%	Yes: 36% No: 14% Don't know: 50%	.017
General health has an impact on oral health:	No statistically significant difference		.398

The results were also compared with the age group of teenagers to see if any significant incidences exist. It was noted that statistically significant differences exist whereby the age group of 13-16 years has a less serious attitude and lack knowledge towards oral hygiene and dietary needs than the age group of 17-19 years: when inquired about frequency of brushing their teeth (p-value: .030), whether dental plaque leads to dental caries (p-value: .023), that caries affect teeth appearance (p-value: .027) and that fizzing drinks affect teeth adversely (p-value: .003).

Similarly, statistically significant differences exist whereby the age group of 17-19 years has a less serious attitude and lack knowledge towards oral hygiene and dietary needs than the age group of 13-16 years: when inquired about frequency of consuming soft drinks (p-value: .007), whether regular brushing prevents gum bleeding (p-value: .024) and that fluoride toothpaste strengthens teeth (p-value: .017).

CONCLUSIONS

- Attitude of teenagers towards their oral health maintenance was poor.
- Knowledge of teenagers towards their oral health maintenance was average.
- Both age groups showed mixed responses as far as attitude and knowledge were concerned.
- There is a need to improve the knowledge and attitude of Saudi teenage boys regarding their oral health maintenance.

CONFLICT OF INTEREST

There is no conflict of interest among the authors of this study.

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