**Title:** Dental Knowledge, Behavior and Attitude among Adolescents in Khobar and Dammam, Saudi Arabia

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**Abstract**

**Background:** Analyze and determine the oral health behavior profile and oral health practice of two age groups on the basis of genders, and the level of education. **Methods:** 600 questionnaires were distributed among the students of 4 schools in Dammam and Khobar. The questionnaire consisted of 27-closed ended questions. The questionnaire was collected on the same day on which it was given to the students. The data was analyzed statistically. **Results:** Overall response rate was 81%. There was a positive relationship between oral care and educational level, with overall percentage of 75% brushing their teeth. Additionally, data showed that 68% of the students did get parental advise about oral health care. Moreover 55.7% of the students had general information regarding about oral health knowledge with no significant difference between genders. Another fact that became evident was that most of the students went to the dentist when they experienced pain, which showed that there was still lack of awareness of importance of regular dental visits. **Conclusion:** The results of this short study exhibited a general good behavior regarding oral health attitude but limited knowledge and awareness about oral health care. Female students showing better results than males. Also higher education level exhibited better oral health knowledge and attitude. Furthermore, there is a need for overall knowledge enhancement related to attitude, knowledge and behavior about oral health maintenance.

**Introduction:**

In current times dental caries, periodontal disease and tooth loss are considered severe problems in the civil societie [1,2]. Dental caries is a multi-factorial disease and one of the main factors for it is poor oral hygiene, lack of knowledge and absence of parental supervision [3].

For prevention of oral health related problems, American Dental Association (ADA) and other organizations recommends that adults should get timely and regular oral health check-ups [4] and properly brush their teeth at least once a day [5].

Apart from the above mentioned measures, other significant preventive methods include fluoride, flossing and professional dental check-ups [6,7]. Sadly, the facts suggest that these measures which include regular dental check-ups, use of floss and fluoride supplements are not universally accepted and not appreciated by a large number of people in many parts of the world [8,9].

Many studies have been done worldwide regarding dental hygiene knowledge, attitude and behavior. In Malaysia, Kuching Sarawak, they conducted a study (n=209), and found out that 95.7/% brush their teeth twice per day; females are more aware than males in oral health care [10].Another study in china with age group of 12-18 was done with a total number of participants 4400 [11]. Their results were:

1. 44.4% brush twice a day
2. 17% used fluoridated toothpaste
3. 31.3% visited dentist during the previous 1-2 years [11].

In Saudi Arabia almost 35% of Saudi population is teenagers, who are in mixed or permanent dentition; they are in preadolescence period. In Saudi Arabia limited number of studies has been done regarding knowledge, attitude and behavior. Two studies were done in Jeddah and one in Riyadh and another one in Al-Hassa [12, 13, 14, 15, 16], no study was found related to Dammam or Khobar. In this short study dental knowledge and attitude in relation to behavior was assessed, based on the use of various oral hygiene methods such dental floss, toothbrush, and mouthwash.

**Method and Materials:**

A survey made up of 27 questions, divided according to the outcomes into personal data, dental behavior, parental advice and supervision, dental education, attitude, knowledge and personal opinion.

A survey was done randomly on convenience sample to pre-test the questionnaire. The questions and questionnaire was modified and adapted based upon the responses. Survey format was finalized into an understandable level for the students including all the points of our interest.

The study was conducted in the first quarter of 2015 in Dammam and khobar and targeted group was teen-agers, in the age group of 12-18 years, males and females. Four governmental schools were randomly selected in the study, 2 intermediate level schools and 2 secondary level schools, one male and one female respectively.

Instructions were given to the students about how to fill the form. Total numbers of 600 survey forms were delivered to the schools’ administrating office, 150 for each school, with specific instructions that students are not to be helped and then it was distributed to the students, answered and collected on the same day for each school.

**Statistical Analysis**

Only fully answered surveys were included in the statistics, total number of 486, 192 male (39.5%) and 294 female (60.5%), the data entry was done using Microsoft excel 2007, and data analysis was done via SPSS v.19.

**Results:**

A total of 486 subjects responded fully to this survey. The demographic data is represented below: (**table-1**)

**TABLE - 1**

The survey questionnaire was divided into 5 sections.

1. Oral hygiene behavior
2. Parental supervision and care
3. Oral health knowledge
4. Dental care attitude
5. General knowledge

Regarding the oral hygiene behavior over all 75% (37% male and 63% female) of students brush their teeth regularly and the remaining 25% (58% male and 42% female) did not brush at all.

Out of the students who brush daily 41% (38.5% male and 61.5% female) brush twice daily and 34% (42.6% male and 57.4% female) brush once. Among the students who brush once daily, 73% (37.5% male and 62.5% female) brush in the morning and 27% (75% male and 25% female) brush in evening.

For the students who brush twice daily, 81% (42.1% male and 57.9% female) use toothbrush with paste. Furthermore, 56.8% (41% male and 59% female) brush for 1 minute and 43.2% (35% male and 65% female) brush for more than 2 minutes.

68% of the subjects received advise from their parents, but without any supervision. For the remaining 24.7% there was no parental advice or care. The data collected showed positive relationship between oral care and educational level with significance difference between the genders, female students having better oral hygiene behavior than the male students.

When asked about oral cavity and its structures, 10% possessed correct knowledge about oral structures, 50% exhibited incorrect information and 40% did not know anything, with 2:1 male to female ratio. About oral health knowledge 55.7% of the students have general idea about oral health knowledge with no significance difference between the genders. 35.6% students exhibited wrong information while remaining 8.7% have no knowledge about oral hygiene.

Regarding the general knowledge of students, they were asked about some basic questions and they were supposed to respond by agreeing or disagreeing with the statement. Summarized data is shown in **table-2.**

**TABLE-2**

When we asked the students about their dental care attitude. The students were assessed on these points:

1. Dental Visit:

Only 23% of the students go for regular dental visits. 11% do not visit a dentist and 77% visit the dentist if they experience any pain.

1. Frequency

40% of the students visited a dentist within last 6 month, 21% visited more than 6 months back and 38% can’t recall when they went for their last dental visit.

1. Treatments:

The most frequent dental treatment was for fillings (36%), extractions (30%) and for orthodontic and RCT share the same percentage (17%).

1. Reason not to Visit a Dentist

36% responded because of absence of pain, the fear of the needle makes. While the sound of hand-piece prevents 20% of students from going to a dental visit, with a ratio of 3:1 (female to male). Remaining student mentioned that they don’t go for a dental visit because they feel there is no need for it.

**Discussions:**

This study was conducted on a study group comprising of school going children of age between 12-18 years to evaluate the oral health behavior. The sample consisted 486 students, 192 male (39.5%) and 294 female (60.5%). Out of which 204 were from intermediate school (41.97%) and 282 (58.02%) were in secondary school.

In many published articles, the value of regular brushing as a means of prevention of oral health problems is signified [17,18]. Published in many scientific papers toothbrush is one of the most used oral disease preventive measure [7,8, 19, 20]. In our short study all of the population was between 12-18 years of age and similar finding that 75% brushed their teeth and majority used toothpaste also.

Many published papers and studies in the literature suggests that dental floss which is one of the preventive measures is hardly used among various population of the world [8, 18, 21]. This study showed the same pattern, out of 75% students who used brush as the sole mean for oral hygiene maintenance, majority (88.88%) didn’t use dental floss.

A dentist was consulted or visited by 77% of the population in this study when they were in pain. The reason behind this could be because of the non-awareness of the role of the regular dental check-ups in the prevention of dental disease.

Only small percentage 20.16% of the participants performs the major intervention procedures and visit dentist regularly. This is also validated by the participant’s knowledge on how to avoid dental problems. 8.7% mentioned brushing and visiting the dentist are all together the best methods of avoiding diseases.

Majority of the participants in this short study had the idea about brushing as a primary mean for good oral health but their knowledge was limited regarding the other preventive oral health measures. Hence, there is a dire need to increase manifold the efforts to educate and spread knowledge of proper oral health care and prevention of oral/dental diseases.

**Conclusion:**

The results of this short study exhibited a general good behavior regarding oral health attitude but limited knowledge and awareness about oral health care. Female students overall showing better results than male students. Also higher education level exhibited better oral health knowledge and attitude. Furthermore, there is a need for overall knowledge enhancement related to attitude, knowledge and behavior about oral health maintenance.

There is a need among the school going children to be addressed about proper oral hygiene maintenance, the technique used for it, the advantages and disadvantages of those techniques.

Furthermore, there is need for overall knowledge enhancement related to attitude, knowledge and behavior about oral health maintenance with more focus on males.

**Clinical Significance:**

This study presented an inside about the knowledge and attitude and behavior among the Saudi population. Based on this data we can plan an appropriate public awareness program for the youth of Saudi Arabia to make them more aware of oral health and try to lower down the DMFT score.

**Further Studies:**

In future, detail surveys should be done in all parts of Saudi Arabia and comparison should be made. This will help to formulate a health awareness program, leading to better oral health and reduce the disease burden in the kingdom.

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