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Oral Health Knowledge and Attitude Among Students of King Abdulaziz University Jeddah Saudi Arabia

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ABSTRACT

Maintenance of oral health and positive attitudes has an integral role in the success of dental treatment and has a direct effect on the prognosis. This study aimed to determine if dentists have more dedication to their oral health than non-dentists, as there is limited data surrounding this topic in Saudi Arabia. An electronic survey was conducted to collect the data from anonymous participants in both dental and non-dental fields. Main contents of survey questions were brushing, flossing, washing, fillings, crowns, extractions, orthodontics, halitosis, gum status, toothache and checkups. Chi square and Monto Carlo tests were used to analyze the results which detected significant differences on extractions, orthodontic appliance, halitosis and gum status for dental students with corresponding scores of (18.9%, 64.9%,16.2%, 20.3% respectively) whereas non-dental students scored (33.6%, 45.8%, 29.8%, 40.5% respectively). With P-value of 0.025 for extractions, 0.009 for orthodontic appliance, 0.031 for halitosis, and 0.006 for gum status. The most prevalent problem was orthodontics. A significant difference was found between dental and non-dental students in terms of tooth brushing and flossing (75.7% VS 55.8% and 71.5% VS 23% respectively) (p = 0.046, P< 0,001 respectively). Missing tooth and halitosis were higher among males than females (50% VS 25.3% and 50% VS 22% respectively) with significant difference (p=0.011, 0.003 respectively). we highly recommend more oral hygiene health education programs especially for non-dental students. Further research is needed to assess oral health problems based on clinical examination and comprehensive detailed interviews to overcome internal validity errors that might occur in an electronic based survey.

KEY WORDS: DENTAL, ORAL, HEALTH, ATTITUDE, SAUDI ARABIA.

INTRODUCTION

Attitudes of dental students towards oral hygiene affect their habits and help improvements of oral health of their society and patients (Sasanka et al., 2020). Good oral health depends on proper oral hygiene which helps in improving the quality of life (Halawany, 2012). It affects appearance, allows people to perform their daily activities without psychological or social limitations (Shah and El Haddad, 2015). Oral health relies on many factors such as personal attitudes, behaviors and knowledge. Dentists should be a role model for oral health attitudes and practices to their communities (Mekhemar et al., 2020). Dentists have a great role in this by providing prevention, treatment and helping people change their behavior and attitudes towards oral hygiene (Moheet and Farooq, 2013). However, poor oral health awareness was reported among Saudi dental students (Baseer and

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Rahman, 2014). In addition, gingival diseases were found to be highly prevalent among dental students (Ahmad et al., 2019). There is an observed need to increase oral health awareness, positive attitudes and correct practices of dental students (Ahmad et al., 2019). Therefore, teaching students the skills needed for good oral health is as important as giving them knowledge (Halawany et al., 2015). In literature, the focus was mainly on treatment of the oral diseases rather than prevention, (Levin and Shenkman, 2004, Glick et al., 2012, Al-Nasser and Lamster, 2020).

The aims of this study are to increase awareness of oral hygiene importance to both dental and non-dental students, determine the most prevalent oral health problems among the groups in order to formulate a targeted community service. This in addition to assessing oral hygiene, attitudes and compliance among dental students and non-dental students and among female dental students or male ones in King Abdul-Aziz University Jeddah Saudi Arabia.

MATERIAL AND METHODS

This comparative cross-sectional study included 206 students at King Abdul-Aziz University Jeddah KSA. Electronic database search was done using Google Scholar and PubMed to gather background information and data related to the research question and determine the gap of knowledge. Then, formulating an anonymous electronic survey with multiple choice questions for dental and non-dental students to answer during the period from 29/01/2020 to 31/08/2020, followed by data analysis and segregation of the results. Arabic language was chosen for this survey to avoid any possibilities of language barriers, followed by data analysis and segregation from the survey. Students were stratified according to specialty and gender. Data were analyzed using the statistical package for the social sciences (SPSS), version 25. Categorical variables were presented as numbers and percentage. Results were compared using Chi-square test, Monto Carlo test and Fisher Exact test. All tests were 2-tailed, and a p-value of <0.05 was considered statistically significant.

Table 1. Oral hygiene and oral health according to dental specialty (n = 206)

		Dental students (n=74)		Non dental students (n=131)		P-value
		N	%	N	%	
Brushing	Not daily	3	4.1%	9	7.0%	0.046*
	Once	9	12.2%	28	21.7%	
	Twice	56	75.7%	72	55.8%	
	More than twice	6	8.1%	20	15.5%	
Floss	I don't	17	23.0%	93	71.5%	<0.001*
	Once	51	68.9%	29	22.3%	
	Twice	4	5.4%	6	4.6%	
	More than twice	2	2.7%	2	1.5%	
Missing tooth	I didn't	60	81.1%	87	66.4%	0.058**
	1-2	12	16.2%	28	21.4%	
	3-4	1	1.4%	13	9.9%	
	5-6	0	0.0%	2	1.5%	
	>6	1	1.4%	1	0.8%	
Orthodontics	Yes , currently	6	8.1%	11	8.4%	0.022*
	Yes, in the past	42	56.8%	49	37.4%	
	Never	26	35.1%	71	54.2%	
Halitosis	Yes	11	14.9%	39	29.8%	0.016**
	No	62	83.8%	92	70.2%	
Gum	Excellent	57	77.0%	72	55.0%	0.006**
	Bleeding during brushing	15	20.3%	53	40.5%	
	Bleeding mostly	0	0.0%	3	2.3%	

Note. All variables are summarized as number and percentage
The test of significance was carried out at 0.05 level
*Chi- Square test was used
**Monto Carlo test was used
Significant results are in bold

Ethical considerations: the study was approved by Research Ethics Committee of the Faculty of Dentistry (REC-FD) Consent was governed automatically by participating in the survey, as it was declared before taking it.

RESULTS AND DISCUSSION

Out of 206 participants, 88.3% were females, (86.4%) with average age of 20-30 years old. Descriptive data are shown in table 1 with 73.3% postgraduate and 63.6% were non dental students. In regard of oral hygiene measures, a significant difference was found between dental and non-dental students in terms of tooth brushing and flossing (p = 0.046, P< 0,001 respectively). However, no significant difference was found between dental and non-dental students comparing the oral and tooth conditions. In regards of dental visits and compliance, the dental students showed higher compliance than the non-dental students (Table 1).

The most common oral health problem among both dental (64.9%) and non- dental students (45.8%) was malocclusion followed by bleeding on brushing (p= 0.009 and p=0.006 respectively) (Table 2, fig.1).

Table 2. Prevalence of the most common Oral health problems in dental students and non-dental students (n=205)

	Dental students (n=74)	Non dental students (n=131)	P-value
Fillings	82.4%	75.6%	0.254*
Crowns	13.5%	9.9%	0.434*
Missing tooth	18.9%	33.6%	0.025*
Orthodontics	64.9%	45.8%	0.009*
Halitosis	16.2%	29.8%	0.031*
Bleeding during brushing	20.3%	40.5%	0.006**
Bleeding mostly	0.0%	2.3%	
Receding gum	2.7%	2.3%	
Toothache	17.6%	26.7%	0.137*

Note. All variables are summarized as percentage
The test of significance was carried out at 0.05 level
*Chi- Square test was used
**Monto Carlo test was used
Significant results are in bold

When comparing between both genders, missing tooth and halitosis were higher among males than females (50% VS 25.3% and 50% VS 22%) with significant difference (p=0.011, 0.003) (Table 3, fig 2).

This comparative cross-sectional study was conducted at King Abdul-Aziz University including 206 dental specialty and non-dental specialty students. This study assesses the knowledge and attitudes towards oral Health among Dental Students and Non-dental Students. To summarize our findings, dental specialty students had better attitudes towards oral hygiene and health, having less oral health problems than non-dental specialty students. Female students also had better oral attitudes with less prevalence of oral problems than males. As regard to oral health and attitudes among dental specialty students, our findings supported the conclusions of Gufran and colleagues. Most of our dental students reported brushing their teeth twice daily. In 2015, Gufran and fellows reported that 82% of their subject students brushed their teeth twice daily (Gufran et al., 2015).

Most of our students who reported not brushing their teeth on a daily basis were of a non-dental specialty. In addition, flossing was higher among dental students suggesting better oral health and attitudes among them. This corresponds to the findings of Santhosh Kumar et al., who found that dental students had a better attitude towards oral health and a better behavior when compared to pharmacy students (S. Kumar et al., 2012). Also another study showed that dental students had better knowledge, attitude and practice than medical students (H. Kumar et al., 2017).

In addition, a study by Baseer found a significant difference between dental hygiene behaviors among government and private universities students which was supported with a difference between the clinical and preclinical dental education (Baseer et al., 2013). In fact, knowledge among dental students is not satisfactory and they need more awareness about oral self-hygiene practice which is the same as what a study by Lavanya et al. concluded (Lavanya & Nallamilli, 2014).Regarding the prevalence of oral health problems in dental students and non-dental students, missing tooth, halitosis, bleeding on brushing and spontaneous bleeding were more frequently reported among non-dental students. This collaborates what Ahmad and colleagues reported in 2019; a study that documented a high prevalence of gingival diseases among all study subjects (Ahmad et al., 2019).

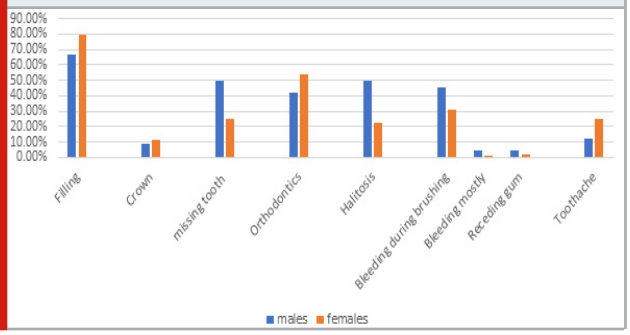
On the other hand, our study reported an unexpected higher prevalence of orthodontics among students of dental specialty. Similarly a study by Wagle et al. concluded that dentists had better oral health than general population and that the prevalence of decayed and unfilled teeth was lower among dentists, (Wagle et al., 2014).When it comes to gender-based oral health comparison among our sample, the prevalence rates of not brushing teeth daily, not using floss and halitosis were higher among males than females. Furthermore, the prevalence rates of missing tooth and halitosis were higher among male subjects than females. Therefore, we can conclude that females are more committed to oral health and hygiene. This could be a result of their concern about how their mouth and teeth look. This was similar to the findings of a study by Kumar et al. where they found that females had better knowledge and oral health practices than males (Kumar et al., 2017).

Table 3. Oral Health and attitude in dental students according to gender (n = 74)

		Males (N=24)		Females (N=182)		P-value
		N	%	N	%	
Brushing	Not daily	5	21.7%	7	3.9%	0.006*
	Once	5	21.7%	32	17.7%	
	Twice	11	47.8%	118	65.2%	
	More than twice	2	8.7%	24	13.3%	
Floss	I don't	19	79.2%	92	50.8%	0.072*
	Once	5	20.8%	75	41.4%	
	Twice	0	0.0%	10	5.5%	
	More than twice	0	0.0%	4	2.2%	
Missing tooth	I didn't	12	50.0%	136	74.7%	0.064*
	1-2	8	33.3%	32	17.6%	
	3-4	3	12.5%	11	6.0%	
	5-6	0	0.0%	2	1.1%	
	>6	1	4.2%	1	0.5%	
Orthodontics	Yes, currently	3	12.5%	14	7.7%	0.267**
	Yes, in the past	7	29.2%	84	46.2%	
	Never	14	58.3%	84	46.2%	
Halitosis	Yes	12	50.0%	39	21.4%	0.030*
	No	12	50.0%	142	78.0%	
Gum	Excellent	11	45.8%	119	65.4%	0.205*
	Bleeding during brushing	11	45.8%	57	31.3%	
	Bleeding mostly	1	4.2%	2	1.1%	
	No	21	87.5%	136	74.7%	
Checkup	Yes, every 6 months	3	12.5%	42	23.2%	0.689*
	Yes, once per year	5	20.8%	28	15.5%	
	No, only during pain	13	54.2%	91	50.3%	
	Never	3	12.5%	20	11.0%	

Note. All variables are summarized as number and percentage
The test of significance was carried out at 0.05 level
*Monto Carlo test was used
**Fisher exact test was used
Significant results are in bold

Figure 2: Prevalence of the most common Oral health problem according to gender.



Similarly another study by Jaber et al. found that male students had good knowledge but poor practice toward oral health, (Jaber et al., 2017). Our paper showed the difference in oral health and attitudes, prevalence of oral problems among dental and non-dental students, female and male dental students. Thus, we highly recommend more oral hygiene health education programs especially for non-dental students.

We obtained our data using an online survey which has some limitations such as possibility of inaccurate information as the survey is in the form of multiple-choice questions.

The survey could be answered by the same person twice as it was anonymous which could affect the integrity of the results. Limited number of questions were used as increasing the questions might bore the participant which could affect the accuracy of the results. Non-dental students might provide us with non-accurate answers because they are not keen in the dental field. Dental and

non-dental students could be biased either to their side or against which could affect the integrity of the results. Respondents may not feel comfortable providing answers that present themselves in an unfavorable manner.

CONCLUSION

Dental specialty students had better attitude towards oral hygiene, oral health and having less oral health problems than non-dental specialty students, so we highly recommend more oral hygiene health education programs especially for non-dental students. Female students were showing more positive attitude than males with the prevalence of oral health problems were more among male students. During literature search, we found limited data on oral health and attitudes of dental students in Saudi Arabia. About eleven studies conducted in Saudi Arabia were found, none of them was in Jeddah or King Abdulaziz University specifically. Further research is needed to assess oral health problems based on clinical examination and comprehensive detailed interviews to overcome internal validity errors that might occur in an electronic based survey.

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