



Evaluation of Good Oral Practices among Students: A Cross-Sectional Study

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Authors' contributions

This work was carried out in collaboration among all authors. Authors MSI and MZI designed the study, performed the initial statistical analyses and wrote the protocol. Authors SUDK and MSI wrote the first draft of the manuscript. Authors MSI and MZI managed refined analyses. Authors SUDK and MSI revised the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

Objective: The objective of the study was to determine the good oral practices (GOP) among university students.

Materials and Methods: A cross-sectional study was conducted using a convenience sampling method. A self-developed and pre-validated tool was used to collect data from students studying at a university in Malaysia. The Statistical Package for Social Science (SPSS) Version 24.0 was used to analyze the data.

Results: A total of 324 respondents had participated in the study. The respondents were from four different faculties; pharmacy 118 (36.4%), medicine 81 (25.0%), business 67 (20.6%), and biotechnology 58 (18.0%).

Conclusion: The final year students had more good practices towards good oral practices. The unmarried students also had more good practices towards oral health.

Keywords: Good oral practices; GOPs; practice; students; university.

1. INTRODUCTION

Good oral health is essential for good appearance and overall good health [1]. Various severe conditions, such as respiratory diseases, are directly related to oral health [2]. Tooth cavities and gingiva diseases may contribute to many diseases [3]. If the cavities are not treated properly, it may lead to pain and severe infections in the body [1]. Good oral health may comprise the process of maintaining our teeth free from cavities by regular brushing and avoiding gingiva disease [4]. Poor oral health not only can decrease quality of life and appearance but can also cause sleeping disorders in children [5]. Poor oral health may also produce digestion problems for food because they are important for chewing and swallowing of food [6]. Oral health is essential for all ages of life to keep teeth more robust ever before [7].

Poor oral health can be linked to the gastric problems such as stomach ulcers, intestinal cancer, and cardiac diseases [8]. Keeping the teeth clean can help to decrease the bad breath. Bad breath is usually produced by plaque and is considered as the first indication of gum diseases [9]. The brushing of teeth is considered a requirement for reducing the quantity of bacterial plaque in the mouth [10]. Oral infections and disorders are obviously associated with good behavior [11]. Many oral disorders can be vetoed if appropriate awareness is provided to improve the behavior of the people of a community. Proper knowledge about oral health is the first requirement for adequate oral health practice [12].

Various studies have been conducted to evaluate the knowledge of oral health and oral practices for adults and old people [12-14], but still, there is a lack in the literature to evaluate the knowledge and practices of university students. The university students are considered as the most educated people of the community. Therefore, the good knowledge of university students should be reflected in their good oral practices. The current study was carried out to appraise the good oral practices of university students regarding their overall oral health.

2. METHODOLOGY

A cross-sectional observational study was carried out in a private university for evaluating the oral health practices of university students in Malaysia. A reliable and validated questionnaire was self-administered for the current study data collection. A Convenience sampling technique was adopted for sample size calculation from different faculties of a private university in Malaysia. Different oral health practice-related questions were asked from the participants. All the participants were asked to understand the questions entirely before answering. All the respondents were asked to give the answers based on their daily practices. The answer options were divided into 'yes' and 'no' format to make ease for respondents to answer the questions. All the collected data in the form of information for individuals were strictly confidential and used for clinical research only.

Statistical Package for Social Science (SPSS) was used to performed data analyses and statistical presentations. The normality of the data was checked, and the data was found as categorical data. Therefore, categorical data were analyzed by Chi-square and Fisher exact test to find the p-value. For the quantitative measure of the magnitude of statistical significance, the effect size was calculated by Phi ϕ , Cramer's V test. A value of $P < 0.05$ was considered statistically significant for the current study.

3. RESULTS

A total of 324 respondents had participated in the current study. The respondents were from Pharmacy, Medicine, Business, and Biotechnology faculties of a private university in Malaysia. The demographic characteristics of the respondents were as follow in Table 1.

Practice question 1: I brush my teeth twice a day.

The majority of the response of respondents to question 1 answered 'Yes' as shown in Table 2.

Table 1. Demographic information of respondents (N=324)

Variables	N	%
Faculty		
Pharmacy	118	36.4
Medicine	81	25.0
Biotechnology	67	20.6
Business	58	18.0
Year		
Pre-final	169	52.2
Final	155	47.8
Place		
Hosteller	216	66.7
Non-Hosteller	108	33.3
Gender		
Male	90	27.8
Female	234	72.2
Age (Years)		
18-20	32	9.8
21-25	281	86.7
>25	10	3.5
Marital Status		
Single	322	99.4
Married	2	0.6
Race		
Malay	8	2.4
Chinese	231	71.3
Indian	82	25.4
Others	3	0.9

Table 2. Practice of respondents to question 1

Variables	Yes N (%)	No N (%)	P value	*Effect size
Faculty			0.005	0.126
Pharmacy	117(99.2)	1 (0.8)		
Medicine	69 (85.2)	12 (14.8)		
Biotechnology	67 (100)	0 (0.0)		
Business	55 (94.8)	3 (5.2)		
Year			0.541	-
Pre-final	165(97.6)	4 (2.4)		
Final	143(92.3)	12 (7.7)		
Place			0.032	0.016
Hosteller	209(96.8)	7 (3.2)		
Non-Hosteller	98 (91.6)	9 (8.4)		
Gender			0.009	0.114
Male	79 (88.8)	10 (11.2)		
Female	228(97.4)	6 (2.6)		
Age			0.769	-
18-20	31 (96.9)	1 (3.1)		
21-25	266(94.7)	15(5.3)		
>25	10(100.0)	0 (0.0)		
Marital Status			<0.001	-0.012
Single	306(95.0)	16 (5.0)		
Married	2 (100.0)	0 (0.)		
Race			0.051	0.011
Malay	8 (100.0)	0 (0.0)		
Chinese	226(97.8)	5 (2.2)		
Indian	71 (86.6)	11 (13.4)		
Others	3 (100.0)	0 (0.0)		

*Chi square test, **Fisher exact test *Phi and Cramer's v

The statistically significant and weak positive association was observed in faculty ($p=0.005$), place of living ($p=0.032$), gender ($p=0.009$), and residence ($p<0.001$) variable. Statistically significant and weak negative association were observed in marital status ($p<0.001$) variable of question 1. There was no statistical significance seen in any other variable.

Practice question 2: I use mouthwash after every meal.

The majority of the response gotten from the respondents in question 2 showed to have answered with 'No'.

The statistically significant and weak positive association were observed in faculty ($p=0.018$), year of education ($p=0.021$), and gender ($p=0.002$). Statistically significant and weak negative association were observed in the marital status ($p<0.001$) variable of question 2. There was no statistical significance seen in any other variable.

Practice question 3: I floss my teeth every day.

Majority of the response gotten from the respondents in question 3 showed to have answered with 'No'.

The statistically significant and weak positive association were observed in faculty ($p=0.048$), year of education ($p=0.018$), and place of living ($p=0.011$). Statistically significant ($p=0.029$) and weak negative association was observed in marital status variable of question 3. There was no statistical significance seen in other any variable.

Practice question 4: I use toothpaste with fluoride.

The response from the respondents to question 4 majority had showed to have selected the answer 'Yes'.

The statistically significant and weak positive association were observed in year of education ($p=0.021$) variable. Statistically significant and weak negative association were observed in marital status ($p=0.010$) variable of question 4. There was no statistical significance seen in any other variable.

Practice question 5: I change my toothbrush regularly.

Majority of the response gotten from the respondents in question 5 showed to have answered with 'Yes' instead of 'No'.

The statistically significant and weak positive association were observed in faculty ($p=0.040$), year of education ($p=0.033$), gender ($p=0.005$) and age ($p=0.041$) variable. Statistically significant and weak negative association were observed in marital status ($p=0.002$) variable of question 5. There was no statistical significance seen in other any variable.

4. DISCUSSION

The current study was the first-ever study in any Malaysian university on good oral practices assessment of university students. The findings of the present study proved that the medical students of the university had a more negative practice (14.8%) as compared to the other students (6.0%) when the question was asked about the brushing of the teeth twice a day. The statistically significant and weak positive association were observed in faculty variable ($p=0.005$). A total of 14.8 % of medical students were from the point of view that there is no need to brush the teeth twice in a day. Nevertheless, most of the students were agreed to brush the teeth twice a day. The probable reason behind could be the appearance of the students. All the students wanted to have clean teeth in university life. The findings of current study were in line with the finding a study conducted in China, where most of the students had proper knowledge and positive behavior about good oral health [14].

The results of the present study showed that the final year students had a more positive practice (31.6%) as compared with the pre-final year students (18.3%) when the question was asked about the use of mouthwash after every meal. The possible reason behind could be the knowledge of the respondents. The final year students may have better knowledge as compared to the pre-final year students. Similar results reported for the response when the question was asked about the floss of teeth every day. The final year students had better practice as compared with the prefinal year students. The previous studies reported that knowledge is directly affecting the good practice of the respondents [15]. The finding of current study is similar with the finding of a study conducted in Kuwait, according to which the knowledge is directly effecting on the behaviors and practices of the students [16].

Table 3. Practice of respondents to question 2

Variables	Yes N (%)	No N (%)	P value	*Effect size
Faculty			0.018	0.064
Pharmacy	13 (11.0)	105(89.0)		
Medicine	20 (24.7)	61 (75.3)		
Biotechnology	17 (25.4)	50 (74.6)		
Business	30 (51.7)	28 (48.3)		
Year			0.021	0.013
Pre-final	31 (18.3)	138(81.7)		
Final	49 (31.6)	106(68.4)		
Place			0.081	-
Hosteller	48 (22.2)	168(77.8)		
Non-Hosteller	32 (29.9)	75 (70.1)		
Gender			0.002	0.132
Male	27 (30.3)	62 (69.7)		
Female	53 (22.6)	181(77.4)		
Age			0.769	-
18-20	6 (18.8)	26 (81.2)		
21-25	74 (26.3)	207(73.7)		
>25	0 (0.0)	10(100.0)		
Marital Status			<0.001	-0.027
Single	79 (24.5)	243(75.5)		
Married	1 (50.0)	1 (50.0)		
Race			0.061	-
Malay	0 (0.0)	8 (100.0)		
Chinese	55 (23.8)	176(76.2)		
Indian	25 (30.5)	57 (69.5)		
Others	0 (0.0)	3 (100.0)		

*Chi square test, **Fisher exact test #Phi and Cramer's v

Table 4. Practice of respondents to question 3

Variables	Yes N (%)	No N (%)	P value	*Effect size
Faculty			0.048	0.073
Pharmacy	27 (22.9)	91 (77.1)		
Medicine	19 (23.5)	62 (76.5)		
Biotechnology	21 (31.3)	46 (68.7)		
Business	36 (62.1)	22 (37.9)		
Year			0.018	0.056
Pre-final	41 (24.3)	128(75.7)		
Final	62 (40.0)	93 (60.0)		
Place			0.024	0.011
Hosteller	56 (25.9)	160(74.1)		
Non-Hosteller	46 (43.0)	61 (57.0)		
Gender			0.383	-
Male	31 (34.8)	58 (65.2)		
Female	72 (30.8)	162(69.2)		
Age			0.769	-
18-20	7 (21.9)	25 (78.1)		
21-25	93 (33.1)	188(66.9)		
>25	3 (30.0)	7 (70.0)		
Marital Status			0.029	-0.004
Single	102(31.7)	220(68.3)		
Married	1 (50.0)	1 (50.0)		
Race			0.055	-
Malay	0 (0.0)	8 (100.0)		
Chinese	70 (30.3)	161(69.7)		
Indian	33 (40.2)	49 (59.8)		
Others	0 (0.0)	3 (100.0)		

*Chi square test, **Fisher exact test #Phi and Cramer's v

Table 5. Practice of respondents to question 4

Variables	Yes N (%)	No N (%)	P value	#Effect size
Faculty			0.059	-
Pharmacy	111(94.1)	7 (5.9)		
Medicine	62 (76.5)	19 (23.5)		
Biotechnology	58 (86.6)	9 (13.4)		
Business	48 (82.8)	10 (17.2)		
Year			0.047	0.071
Pre-final	141(83.4)	28 (16.6)		
Final	138(89.0)	17 (11.0)		
Place			0.492	-
Hosteller	185(85.6)	31 (14.4)		
Non-Hosteller	93 (86.9)	14 (13.1)		
Gender			0.512	-
Male	77 (86.5)	12 (13.5)		
Female	201(85.9)	33 (14.1)		
Age			0.273	-
18-20	29 (90.6)	3 (9.4)		
21-25	240(85.4)	41 (14.6)		
>25	9 (90.0)	1 (10.0)		
Marital Status			0.010	-0.025
Single	278(86.3)	44 (13.7)		
Married	1 (50.0)	1 (50.0)		
Race			0.066	-
Malay	7 (87.5)	1 (12.5)		
Chinese	200(86.6)	31 (13.4)		
Indian	69 (84.1)	13 (15.9)		
Others	3 (100.0)	0 (0.0)		

*Chi square test, **Fisher exact test #Phi and Cramer's v

Table 6. Practice of respondents to question 5

Variables	Yes N (%)	No N (%)	P value	#Effect size
Faculty			0.040	0.098
Pharmacy	104(88.1)	14 (11.9)		
Medicine	69 (85.2)	12 (14.8)		
Biotechnology	56 (83.6)	11 (16.4)		
Business	46 (79.3)	12 (20.7)		
Year			0.033	0.085
Pre-final	136(80.5)	33 (19.5)		
Final	139(89.7)	16 (10.3)		
Place			0.672	-
Hosteller	181(83.8)	35 (16.2)		
Non-Hosteller	93 (86.9)	14 (13.1)		
Gender			0.005	0.103
Male	70 (78.7)	19 (21.3)		
Female	204(87.2)	30 (12.8)		
Age			0.041	0.089
18-20	25 (78.1)	7 (21.9)		
21-25	241(85.8)	40 (14.2)		
>25	9 (90.0)	1 (10.0)		
Marital Status			0.002	-0.110
Single	274(85.1)	48 (14.9)		
Married	1 (50.0)	1 (50.0)		
Race			0.761	-
Malay	7 (87.5)	1 (12.5)		
Chinese	197(85.3)	34 (14.7)		
Indian	69 (84.1)	12 (15.9)		
Others	2 (66.7)	1 (33.3)		

*Chi square test, **Fisher exact test #Phi and Cramer's v

The findings of the current study showed that the unmarried students had a more positive practice (86.3%) as compared with the married students (50.0%) when the question was asked about the use of toothpaste with fluoride. The reason behind could be the number of students in each category. The number of unmarried students was more in the study as compared to married students. The number of students is directly affecting the results of studies. The finding of current study are similar to the finding of a study conducted in Malaysia on root canal treatment in oral health, according to which the unmarried students had better knowledge as compared with the married students [17].

Similarly, the results of the present study presented that the female students had better practice (87.2%) as compared to the male students (78.7%) when the question was asked about the change of toothbrush regularly.

5. CONCLUSION

The present study described mixed answers regarding the good oral practices among different students in a private university in Malaysia. The final year students had more good practices towards good oral practices. The unmarried students also had a more good practices towards oral health.

CONSENT AND ETHICAL APPROVAL

The ethical approval of the present study was taken from the university research and ethical committee. The pre consent form was signed from all the willing participants of the current study.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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