

## **Awareness and Practices of Oral Hygiene among Female Undergraduates in a Malaysian University**

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### **Abstract**

*The aim of this study is to evaluate the extent of awareness and practices of oral hygiene among undergraduate female students in a residential college of a university at Malaysia and to assess the need for awareness programs about oral hygiene. The study was carried out using a self-administered questionnaire. Hundred undergraduate female Malay students were selected as sample through convenience sampling. The results indicated that a majority of the respondents used toothpaste and toothbrush as primary tools for cleaning their teeth twice a day and was found that they had never used Miswak (a wooden teeth-cleaning stick made from tree twigs). They had adequate knowledge about periodontal and gingival health and were aware of the importance of visiting dentist regularly; however, most of them visited dentists when having a toothache. They had*

*also reported need for organizing oral hygiene awareness programs by college administration and showed adequate oral hygiene knowledge and practices. Nevertheless, few inadequate practices were also identified which were being considered under oral hygiene along with lack of awareness programs being organized in college for which recommendations are suggested.*

**Keywords:** awareness, females, oral hygiene, practices

### **Introduction**

Many countries around the globe have been conducting health education and awareness programs in their educational organizations in order to provide awareness on personal hygiene, oral hygiene, suitable nutrition and environmental sanitation (Sarkar, 2013). Mouth serves as a mirror of the body (Grewal and Kaur, 2007) and therefore, has a direct impact on general health (Togoo, Yaseen, Zakirulla, Nasim, Al-Zamzami, 2012). Parents at home observe the oral hygiene and eating habits of their children; however, children residing in hostels may neglect the oral hygiene as an important issue. Unhealthy eating habits, such as frequent intake of sweets and cold drinks are common in college residential students. This can be one of the major causes of oral diseases (Jameel, Khan and Kamaruddin, 2014). Furthermore, factors such as place of inhabitation can sometimes block access to dental care (Rowden, Paschal, Hawley & Hsiao, 2011) little is known about the conditions of oral health care among German-speaking Mexican Mennonites, a distinctive cultural subgroup of migrant farm laborers. The purpose of this study was to examine the oral health practices, perceived oral health status, and barriers to obtaining dental care among a

community of Low German-speaking Mexican Mennonites residing in Southwest Kansas. Interviews were conducted with a sample of 25 individuals, with questions addressing access/barriers to care, oral health practices, and perceived oral health status. The most frequently identified barriers to dental care were limited finances, lack of adequate health/dental insurance, and limited awareness of available dental services. Although the majority of participants reported experiencing no problems related to language or scheduling dental appointments, the results also indicated low utilization levels of oral care services. Findings suggest that: (1. Thus, oral health problems have a significant impact on general health (Rowden, Paschal, Hawley & Hsiao, 2011) little is known about the conditions of oral health care among German-speaking Mexican Mennonites, a distinctive cultural subgroup of migrant farm laborers. The purpose of this study was to examine the oral health practices, perceived oral health status, and barriers to obtaining dental care among a community of Low German-speaking Mexican Mennonites residing in Southwest Kansas. Interviews were conducted with a sample of 25 individuals, with questions addressing access/barriers to care, oral health practices, and perceived oral health status. The most frequently identified barriers to dental care were limited finances, lack of adequate health/dental insurance, and limited awareness of available dental services. Although the majority of participants reported experiencing no problems related to language or scheduling dental appointments, the results also indicated low utilization levels of oral care services. Findings suggest that: (1 and students, due to oral disease, may not be able to give proper time and energy to their studies (Togoo, Yaseen, Zakirulla, Nasim & Al-Zamzami, 2012) .

Residential colleges should be viewed as part of educational environment and not merely residences allocated to students

(Parameswaran and Bowers, 2014) and in doing so, colleges should organize health programs for residential student (White, Kolble, Carlson, Rn, & Lipson, 2010). Guo et al. (2014) reported that health literacy and oral health are associated with each other and recommended that education on oral health should be based on the needs of the students. Similarly, audience friendly materials should be designed to increase information regarding oral hygiene and its related practices (Guo et al., 2014).

A study conducted in Saudi Arabia on general practices regarding oral hygiene showed these practices differed across gender (Almas et al., 2003). Among females, 90% felt that dental caries was due to the wrong method of tooth brushing, 98% considered sugary drinks and 72% considered irregular tooth brushing as the main factors of tooth decay and gum diseases. Moreover, 33.5% females brushed three times a day and 48% preferred brushing as a method of teeth cleaning. Another study, which was conducted in the rural area of southern Saudi Arabia, described that adequate level of oral health knowledge was present among 9-12 year old school students but oral hygiene practices were of significantly low level (Togoo, Yaseen, Zakirulla, Nasim, & Al-Zamzami, 2012). They also recommended that oral health education programs are required to improve hygiene practices among students.

In an Indian city, Bengaluru, a study was conducted to analyse the oral hygiene knowledge, attitude and practices among college students from different disciplines through the survey method (Gopikrishna, Bhaskar, Kulkarni, Jacob & Sourabha, 2016). It was found that the majority of the students used tooth brushing as a method to clean their teeth. In addition, the students considered

dental caries as an important factor affecting their aesthetics, health and body; however, their visit to dentist was due to pain only. They also suggested that oral health education and programs are essential in improving students' oral hygiene knowledge, attitude and practices (Gopikrishna, Bhaskar, Kulkarni, Jacob & Sourabha, 2016).

Despite the fact that oral hygiene awareness and oral health educational programs are very important, there is a lack of systematic study on assessing oral hygiene knowledge and practices of students living in residential colleges. To my knowledge, this is the first study in Malaysia on knowledge and practice of oral hygiene. Furthermore, identifying the need for oral hygiene, awareness programs would also be considered as an additional gain. The purpose of this study was to investigate knowledge and practices of oral hygiene among undergraduate female students in a residential college in Malaysia. In addition, oral hygiene awareness activities and needs for organizing such activities by college administration were also assessed.

### **Methodology**

The focus of the study was to investigate knowledge and practices of oral hygiene among undergraduate female students. Survey design was used as research method for this study. This design is used when researchers want to describe trends in a large population (Creswell, 2012). Moreover, all students of the residential college (RC) were considered as population of the study, while the sample constituted (N=100) female undergraduate students for the study. Convenience sampling technique was used to collect data from students. In convenience sampling, the researcher selects those

participants who are available and willing to participate in the study and the sample can provide useful information to achieve research objectives (Creswell, 2012). For the current study, convenience sampling was used because students had different timings for class and recreational activities; therefore, it was difficult to collect data at the same time.

Data were collected through an adapted version of Oral Health Knowledge and Practices Questionnaire (OHKPQ) by Togoo, Yaseen, Zakirulla, Nasim, and Al-Zamzami (2012) with proper permission. The OHKPQ consisted of three parts; the first part had three questions related to oral hygiene practices, the second part was related to awareness of periodontal and gingival health, and the third part constituted of four questions about attitudes towards professional dental care. Besides, one additional part was added in the questionnaire covering four questions about oral hygiene awareness activities and need of programs in colleges. Experts from the field of dentistry validated the questionnaire and anonymity and confidentiality were assured through consent forms. Moreover, to achieve a satisfactory response, the questionnaire was self-administrated. The Statistical Package for Social Science (SPSS 22.0.) was used for data analysis and descriptive statistics (frequencies) were obtained.

## **Results**

The purpose of this quantitative study was to investigate knowledge and practices of oral hygiene among undergraduate female students as well as to identify the need of oral hygiene awareness programs in Malaysia residential collage. For this purpose, hundred

(N=100) undergraduate female students participated in the study belonging to Malay Muslim community. Table 1 shows frequencies of oral hygiene knowledge of the undergraduate female students.

Table 1

*Knowledge, Attitude and Practices of Oral Hygiene among Undergraduate Female Students*

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<b>Oral hygiene practices</b>	
<b><u>Questions</u></b>	<b>Frequency</b>
<b>Which one of the following do you use as a primary tooth cleaning aid?</b>	
Toothbrush and paste	96
Miswak ( wooden teeth cleaning stick)	2
Dental floss	1
Toothpicks	1
<b>How often do you brush your teeth?</b>	
Once daily	16
Twice daily	68
After each meal	15
Rarely	1
<b>How often do you use Miswak?</b>	
Daily	2
Twice a week	1
Once a week	2
Once in month	10
Never	85

**Awareness of periodontal and gingival health**

**Bleeding from gums indicate which one of the following?**

Gum disease due to poor oral hygiene	63
General illness	11
Don't know	26

**Does Sugary diet cause dental decay?**

Yes	75
No	4
Don't know	21

**Do soft drinks affect dental health?**

Yes	75
No	5
Don't know	20

**Attitudes towards professional dental care**

**How often do you visit the dentist?**

Regularly/once in 6 months	18
When in pain	64
Never	18

**Is regular visit to the dentist necessary?**

Yes	65
No	26
Don't know	9

**Reason for your last dental visit**

Toothache	54
Parents' advice	13
Dentists advice	11
Another reason-----	22

**Reasons for not visiting the dentist**

Fear	17
No clinic nearby	15
No specific reason	68

Results show that 96% respondents used toothbrush and paste, 2% respondents used *Miswak* as primary aid for tooth cleaning, while dental floss and toothpicks were the least used (1%) as primary aid for tooth cleaning. Similarly, 68% respondents brushed twice a day while 16% respondents brushed once in a day in



order to clean their teeth. About 15% respondents brushed after each meal while 1% respondent brushed rarely. Moreover, the majority of the respondents (85%) have never used *Miswak* and only 1% respondent uses *Miswak* twice a week while 2% respondents use once a week and 10% respondents use *Miswak* once in a month.

About awareness of periodontal and gingival health, 63% respondents said that the poor oral hygiene is the main cause of bleeding from teeth, while 11% respondents said that general illness is the cause behind bleeding from teeth. In addition, 26% respondents were not aware of the causes of bleeding from teeth. Furthermore, 75% respondents reported that sugary diet causes dental decay, 4% said sugary diet does not cause dental decay and 21% did not know about that. However, 75% respondents said soft drinks affect dental health, 5% were of the view that soft drinks did not affect dental health, and 20% did not know about it.

Attitudes of the respondents towards professional dental care showed that majority of the respondents (64%) visited a dentist when they were in pain, 18% had never been to a dentist, and only 18% went to the dentist once in six months. In response to a question about the importance of regular visits to dentists, 65% respondents said that regular visits to a dentist were necessary; according to 26% it was not necessary to visit a dentist on regular basis, while 9% did not know whether visiting dentists was necessary or not. Furthermore, the reason of last visit to a dentist of 54% respondents was toothache, 13% of the respondents last visited the dentist due to parents' advice, and 11% visited on the advice of dentist himself, while 22% visited dentists due to other reasons. Additionally, a majority of respondents had no specific reason for not visiting the

dentist, 17% did not visit dentist because of fear, while 15% had no clinic nearby to visit.

Table 2 below presents the data about the need for programs on oral hygiene awareness in selected residential college.

Table 2

*Oral Hygiene Awareness in the Selected Residential College*

<b>Oral hygiene awareness activities and needs</b>	
<u>Questions</u>	<u>Frequency</u>
<b>Have you ever seen any poster on awareness of oral hygiene in your residential college?</b>	
Yes	7
No	86
Don't know	7
<b>Have you ever attended any talk on oral hygiene arranged by your residential college administration?</b>	
Yes	2
No	95
Don't know	3
<b>Do awareness programs give up-to-date information on oral hygiene?</b>	
Yes	36
No	31
Don't know	33
<b>Awareness programs need to be arranged by your residential college administrators.</b>	
Once in a week	3
Once in a month	35
Once in a year	49
Never	13

In response to questions about oral hygiene awareness activities and need in RC, the majority of respondents (86%) had never seen any poster on oral hygiene in RC, 7% had seen posters

on oral hygiene, and 7% did not know whether there were posters or not. 95% of the respondents said that they had never attended any talk on oral hygiene organized by their RC administration, 2% said yes they had attended and 3% responded that they did not know about it.

In response to questions about the need of awareness programs, 36% responded that awareness programs give up-to-date information on oral hygiene, 31% respondents thought that they did not give up-to-date information on oral hygiene, while 33% respondents did not have any particular opinion about it. In addition to that, 45% respondents said that the RC administration needs to organize oral hygiene programs at least once a year, 35% respondents said that it should be arranged once in a month, 3% respondents said once in a week should be sufficient for such program while 13% said that RC administration should never organize oral hygiene programs.

## **Discussion**

Oral health literacy programs play an important role in providing awareness about oral health and controlling oral disease (Naidu et al.); therefore, the present study was conducted in order to investigate about knowledge, attitude and practices of oral hygiene in a residential college of a Malaysian university and the need to organize awareness programs. The results indicated that the majority of the respondents used toothpaste and brush as primary tool for cleaning their teeth, while dental floss was used sparingly, which is in compliance with the previous studies (Almas, 2003; Gopikrishna, Bhaskar, Kulkarni, Jacob & Sourabha, 2016; Mudathir, & Awooda, 2013; Naidu et al., 2014;

Togoo, Yaseen, Zakirulla, Nasim & Al-Zamzami, 2012). Nevertheless, majority of the respondents had never used Miswak indicating that either the respondents were not aware of Miswak or they intentionally preferred toothbrush to Miswak. This is similar to what has been reported previously (Farsi, Farghaly & Farsi, 2004), but contradictory with few of the studies (Almas, 2003; Togoo, Yaseen, Zakirulla, Nasim, Al-Zamzami, 2012). Further, it can also be concluded from the studies that Miswak is more frequently used by males as compared to females (Almas, 2003; Mudathir & Awooda, 2013). Other than the religious obligation in Islam, Miswak should be encouraged along with toothbrush on daily basis keeping in view the multiple scientific advantages attached to it (Mudathir & Awooda, 2013).

Moreover, majority of the respondent brushed twice or after each meal, which showed that their oral hygiene practices were acceptable because cleaning teeth twice has been recommended by most of the dentists; nonetheless, using it after each meal has been proven to be the best (Carneiro, Kabulwa, Makyao, Mrosso & Choum, 2011). These results match with previous literature ( Almas, 2003; Tangade, 2011; Togoo, Yaseen, Zakirulla, Nasim & Al-Zamzami, 2012), but are contradictory to some studies (Carneiro, Kabulwa, Makyao, Mrosso & Choum, 2011), which reported that the majority of respondents brushed once only.

The most common oral diseases in adults are periodontal diseases, such as gingivitis and a periodontal, in which the bacteria embeds in dental plaque and grows in the periodontal tissues causing swelling of the gingiva. The gingiva gets fragile and prone to bleeding on brushing, which leads to bone loss and associated dental diseases including tooth decay (Jameel, Kamaruddin & Khan,

2014). Carbohydrate rich diet and carbonated drinks enhance the life of bacteria within the periodontal diseases and may lead to tooth decay (Jameel, Kamaruddin and Khan, 2014). The results of this study showed that a majority of the respondents knew the symptoms and causes of periodontal diseases. Few previous studies have been reported with similar results, where majority of the participants had adequate level of understanding about tooth and periodontal diseases (Carneiro, Kabulwa, Makyao, Mrosso and Choum, 2011; Tangade, 2011; Togoo, Yaseen, Zakirulla, Nasim, & Al-Zamzami, 2012) while others have reported inadequate level of understanding by respondents (Almas, 2003; Mudathir & Awooda, 2013) and underscored the need for conducting oral health educational programs. General medical problems like, diabetes, cancer and HIV AIDs may lead to periodontal diseases. This study showed lack of knowledge among the respondents with regards to the relationship of these diseases with the periodontal problems.

The majority of respondents were aware about the importance of regular visits to the dentists, but only few visited the dentist biannually. Most of the people visited their dentist when they were in pain. Similarly, the last visit of more than half of the respondents was due to toothache. They showed no specific reason for not consulting the dentists. This indicated that the respondents would go to the dentist only when they were in pain and although they knew that they had to visit the dentist biannually, but they were unaware of its importance. Similar studies have been conducted in Saudi Arabia and Tanzania revealing the same results with different participants (Almas, 2003; Carneiro, Kabulwa, Makyao, Mrosso and Choum, 2011; Farsi, Farghaly and Farsi, 2004; Tangade, 2011). In contrast to a study conducted in India, the respondents did not

visit the dentist biannually but were well aware of the importance of visiting the dentist twice a year (Tangade, 2011).

Most of the oral hygiene awareness programs are organized and arranged in schools (Tangade, 2011); however, other organizations like colleges and universities were over looked. Gopikrishna, Bhaskar, Kulkarni, Jacob and Sourabha, (2016) suggest that irrespective of the age and level of students, they need oral hygiene awareness programs. The participants indicated that even though the college administration arranged a few activities regarding oral hygiene, yet there is a dire need to organize more such activities. Regarding frequency of organizing such programs, less than half of the respondents were in favor of organizing such activities once in a year. The respondents demanded frequent and up to date knowledge of such programs and were interested in participating in such awareness programs.

Most of the study respondents showed good oral hygiene, as they had been attending awareness programs in schools (Tangade, 2011) and also been following the media playing its role in oral hygiene awareness programs (Mudathir, and Awooda, 2013). Further, it was also concluded from the results that such educational institutions need countless programs to be organized annually in collaboration with the dentistry department. Additionally, companies selling oral hygiene products should be involved in giving awareness through talks, posters and product samples.

## **Conclusion and Recommendations**

Although the sample of the study was quite small, yet it revealed very important results. One of the main limitations of this study was convenience-sampling technique that may have affected the results; however, researchers have used this sampling technique previously (Carneiro, 2011) prevention, and signs of dental caries, 760 (96.8%).

The majority of the respondents were aware about the importance of regular visits to the dentists, but few visited the dentist biannually and the rest visited when required. The results also indicated that the majority of the respondents used toothpaste and brush as a primary tool for cleaning their teeth, while dental floss and Miswak was used sparingly. The students felt that more awareness raising programs should be arranged at university and college level. A major hitch with such researches is that respondents are unwilling to give knowledge that is unaccepted by society and this could reduce the reliability of the results.

Researchers could consider including all students in the university to get a clearer picture of the problem. A comparative study between male and female respondents (Almas,2003; Tangade, 2011) and between different levels of students is suggested (Naidu, 2014). In addition to this, other demographic variables like socio-economic status, age, area (rural and urban) can also be included to see the relationship between oral hygiene knowledge and practices. Moreover, questions about main source of gaining information about oral hygiene (Mudathir and Awooda, 2013) and deeper understanding of dental caries (Tangade, 2011) could be included in the questionnaire for future studies.

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