



Faculty of Medicine and Health Sciences

**KNOWLEDGE, ATTITUDE AND PRACTICE OF ORAL
HYGIENE AMONG UNIMAS UNDERGRADUATE STUDENTS IN
RAFFLESIA COLLEGE**

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Bachelor of Nursing with Honours

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KNOWLEDGE, ATTITUDE AND PRACTICE OF ORAL HYGIENE
AMONG UNIMAS UNDERGRADUATE STUDENTS IN RAFFLESIA
COLLEGE

This graduation exercise is submitted in partial fulfilment of requirement for the
degree of Bachelor of Nursing (with Honours)

Faculty of Medicine and Health Sciences

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2023

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Final Year Project Report

Masters

PhD

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Here I present my first final year project for four years studying in Bachelor of Nursing with Honours.

ABSTRACT

Background: Oral health is essential as it play major roles in our daily life to chew, talk and socialize with people. Maintenance of oral health can be achieved by implementing the practice of oral hygiene. **Objectives:** The objectives were to assess the level of knowledge of oral hygiene in relation to oral health, attitude towards oral hygiene, the practice of oral hygiene as well as to investigate the relationships between knowledge, attitude and practice. **Methods:** A descriptive cross-sectional study was carried out by using self-administered questionnaire, which targeted to UNIMAS undergraduate students who stay in Rafflesia College. The sampling method was simple random sampling. There were six questions to assess the knowledge of oral hygiene, 11 questions to assess the attitude and nine questions to assess the practice of oral hygiene. Data analysis was done by using SPSS to perform descriptive analysis and Spearman's correlation coefficient test. **Results:** 340 students participated in the study (250 females, 90 males). The level of knowledge of oral hygiene was grouped into two, 62.6% ($n = 213$) students in 'poor knowledge' group whereas 37.4% ($n = 127$) in 'good knowledge' group. Secondly, 48.5% ($n = 165$) students were grouped into 'positive attitude' group whereas 51.5% ($n = 175$) in 'negative attitude' group. Third, 35.6% ($n = 121$) students were grouped into 'adequate practice' group whereas 64.4% ($n = 219$) in 'inadequate practice' group. The correlation between the three variables revealed weak positive relationships, which knowledge-attitude ($r_s = 0.214$), knowledge-practice ($r_s = 0.124$) and attitude-practice ($r_s = 0.141$). **Conclusion:** The results suggested that the knowledge and practice of oral hygiene were inadequate but the attitude was fair.

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List of Acronyms

| | |
|--------|--|
| UNIMAS | Universiti Malaysia Sarawak |
| SPSS | Statistical Package for Social Science |
| UAE | United Arab Emirates |
| FCSIT | Faculty of Computer Science and Information Technology |
| FCSHD | Faculty of Cognitive Sciences and Human Development |
| FEB | Faculty of Economics and Business |
| FENG | Faculty of Engineering |
| FACA | Faculty of Applied and Creative Arts |
| FMHS | Faculty of Medicine and Health Sciences |
| FRST | Faculty of Resource Science and Technology |
| FSSH | Faculty of Social Sciences & Humanities |
| FBE | Faculty of Built Environment |
| FLC | Faculty of Language and Communication |

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Chapter 1: Introduction

1.0 Introduction

This chapter presents related information regarding the title of the study, which it includes background of the study, statement of the problem, research questions and objectives, hypotheses and the significance of the study. The definition of the terms that outline the title are also included too in this chapter.

1.1 Background of the study

An estimation of close to 3.5 billion people over the world, approximately half of the population suffer from one or other form of oral diseases (World Health Organization [WHO], 2022). Oral diseases are not only focusing on the faciomaxillary region but they also reflect on an individual's overall health, physically and mentally. A new definition developed by the Fédération Dentaire Internationale (FDI), now known as FDI World Dental Federation, oral health consists of many different aspects which it “includes the ability to speak, smile, smell, taste, touch, chew, swallow, and convey a range of emotions through facial expressions with confidence and without pain, discomfort, and disease of the craniofacial complex” (Glick et al., 2016, p. 793). Good oral health can be achieved and maintained through the habits of oral hygiene. Oral hygiene is performed by regular habit of brushing teeth, flossing the teeth as well as regular visits to a dentist in order of keeping the oral or in a simple term, mouth stay healthy (HarperCollins, n.d.). On the other hand, poor oral hygiene is not only affecting the oral cavity, but it can be a risk factor that led to systemic diseases (Hussain et al., 2014). It can affect the quality of life of an individual as poor oral health can cause discomfort and pain. Therefore, knowledge, attitude and practice of oral hygiene are important to be assessed.

1.2 Problem statement

Oral diseases are described as chronic diseases as the disease processes are progressive and cumulative in nature. All over the world, dental caries, gum diseases, tooth loss and oral cancers are the most prevalent non-communicable oral diseases although these diseases can be prevented. These diseases cause bad impacts to the health, social and economy as well as humans at all stages of life (WHO, 2022). The repeated experiences from the bad effects of oral diseases affect an individual's self-confidence and self-esteem thus leading to reduced social interaction and social isolation (WHO, 2022).

Moving on to the narrower population, which is university students, the prevalence of dental caries and periodontitis was 58.9% and 13.2% respectively among university students in Universiti Sains Islam Malaysia (Jaafar & Malik, 2021). Besides, poor knowledge of oral hygiene in relation to oral health had been reported in a study done by Madan et al. (2021). Out of 510 undergraduate students, 97% were unaware about any association between oral diseases and systemic diseases. In addition, 90% of them never use floss as their teeth cleaning aid. A good knowledge regarding oral health is crucial to perform proper and healthy oral practice. However, from a study that was done across several universities in UAE (United Arab Emirates), despite that the students had good knowledge on the basic oral health measures but their oral practices were still poor (Zakaria, Nasreen & Bassam, 2021).

Next, moving on to smaller population which is UNIMAS undergraduate students, throughout the researcher's observation, most students visit to dentist whether governmental or private dental clinic due to toothache which is caused by dental caries. In addition, toothache is commonly experienced by an individual and it is perceived as the

most intense of pain (WHO, 2022). Therefore, this study aims to assess the knowledge, attitude and practice of oral hygiene among UNIMAS undergraduate students in Rafflesia College.

1.3 Research questions and research objectives

1.3.1 Research questions

There were four research questions in this study;

1. What is the level of knowledge of oral hygiene among UNIMAS undergraduate students in Rafflesia College?
2. What is the attitude towards oral hygiene among UNIMAS undergraduate students in Rafflesia College?
3. What is the practice of oral hygiene among UNIMAS undergraduate students in Rafflesia College?
4. Are there any relationships between the level of knowledge, attitude and practice of oral hygiene among UNIMAS undergraduate students in Rafflesia College?

1.3.2 Research objectives

There were four research objectives in the study;

1. To assess the level of knowledge of oral hygiene among UNIMAS undergraduate students in Rafflesia College.
2. To assess the attitude towards oral hygiene among UNIMAS undergraduate students in Rafflesia College.

3. To assess the practice of oral hygiene among UNIMAS undergraduate students in Rafflesia College.
4. To examine the relationships between the level of knowledge, attitude and practice of oral hygiene among UNIMAS undergraduate students in Rafflesia College.

1.4 Hypotheses

Null hypothesis (H_0): There is no relationship between knowledge, attitude and practice of oral hygiene among UNIMAS undergraduate students in Rafflesia College.

Alternative hypothesis (H_a): There are relationships between knowledge, attitude and practice of oral hygiene among UNIMAS undergraduate students in Rafflesia College.

1.5 Significance of the study

The study was significant as it could determine the level of knowledge, attitude and practice of oral hygiene among UNIMAS undergraduate students. Besides, the study could also increase awareness regarding the importance of oral hygiene to oral health, through health promotion among community of all ages to prevent oral diseases.

1.6 Operational definition of terms

There was a total of four definition of terms which started with conceptual definitions and followed by operational definitions, which ‘knowledge’, ‘attitude’, ‘practice’ and ‘oral hygiene’ included.

1.6.1 Knowledge

Knowledge was defined as “awareness, understanding, or information that has been obtained by experience or study, and that is either in a person’s mind or possessed by people generally” (Cambridge University Press, n.d.). In this study, knowledge was operationally defined as the obtained awareness or information in relation to oral hygiene among UNIMAS undergraduate students in Rafflesia College, which assessed by a questionnaire adapted and modified from Rasouli-Ghahroudi et al. (2016). There were six questions to measure the knowledge of oral hygiene in relation to oral health. The first three questions were single choice questions which different answers were provided whereas another three questions were provided with answers ‘yes’, ‘no’, and ‘don’t know’. The correct answer and ‘yes’ response were given 1 point whereas 0 was attributed to wrong answer, ‘no’, and ‘I don’t know’ response for each question. Total score was ranged from 0 to 6. Categorization was made manually by using ‘visual binning’ feature in SPSS after the total score was calculated. The total score of knowledge was divided into two groups, ‘poor knowledge’ group (total score ≤ 5) and ‘good knowledge’ group (total score > 6).

1.6.2 Attitude

Attitude was defined as “the way you feel about something or someone, or a particular feeling or opinion” (Cambridge University Press, n.d.). In this study, attitude was operationally defined as the way the UNIMAS undergraduate students in Rafflesia College feel, think and behave towards oral hygiene, which assessed by a questionnaire adapted and modified from Samosir et al. (2018). Attitude was measured by 11 questions with five-point Likert’s scale. Each question item was given a score, ranging from 1 point = strongly disagree, 2 points = disagree, 3 points = neither agree nor disagree, 4 points = agree and 5 points = strongly agree. The total score for attitude is ranged from 11 to 55. Categorization was made manually by using ‘visual binning’ feature in SPSS after the total score was calculated. The total score for attitude was divided into two groups, ‘negative attitude’ group (total score ≤ 50) and ‘positive attitude’ group (total score > 51).

1.6.3 Practice

Practice was defined as “something that is usually or regularly done, often as a habit, tradition, or custom” (Cambridge University Press, n.d.). In this study, practice was operationally defined as routine or habit that were done by the UNIMAS undergraduate students in Rafflesia College to keep their oral clean and hygienic. Practice of oral hygiene was assessed via questionnaire adapted and modified from Rasouli-Gharudi et al. (2016). Practice was measured by nine question items, which eight question items were single choice questions, one question was multiple choice question. The correct practice was given a score of ‘2’, the least correct practice was given a score of ‘1’, and the wrong practice was given a score of ‘0’. The final score of oral hygiene practice was ranged from

0 to 18. Categorization was made manually by using ‘visual binning’ feature in SPSS after the total score was calculated. The total score of practice was divided into two groups, ‘inadequate practice’ group (total score \leq 13) and ‘adequate practice’ group (total score $>$ 14).

1.6.4 Oral hygiene

Oral hygiene was defined as “The state or practice of keeping the mouth cavity in a healthy condition, as by a regular programme of brushing and flossing the teeth combined with periodic examinations by a dentist” (HarperCollins, n.d.).

1.7 Summary

This chapter discusses the background of the study, which oral health is being emphasized including the risk factors that affect the oral health. Oral hygiene is focused as the main topic for the maintenance of oral health. This chapter also discusses the problem statement which oral diseases are becoming major problem worldwide and this scenario is existing too among the population of university students. Followed by research aims, research questions and objectives, significance of the study is included too in this chapter. The next chapter will focus on the literature review which is related to the study.

Chapter 2: Literature review

2.0 Introduction

Oral health could be maintained with the practice of oral hygiene. Oral hygiene is described as a routine to keep the oral cavity healthy by performing regular habits of brushing teeth, flossing as well as dental check-up (HarperCollins, n.d.). In this literature review, the findings regarding oral hygiene focused on university students. The inquiry questions for this review included what the level of knowledge of oral hygiene is, how is the attitude, practice among university students towards oral hygiene and the relationship between knowledge, attitude and practice of oral hygiene. The literature review was done by using Google Search Engine, Google Scholar and PETARY's online sources to search for articles and research papers. Few keywords were used to search for the articles, such as "Knowledge of oral hygiene among university students", "Knowledge of oral hygiene", "Oral health". Year of publication was used to filter and choose the relevant articles that were related to the research title. A total of seven out of 11 journal articles that were dated from 2015 to 2022 have been reviewed and sorted by objectives based on the findings. The literature review included objective 1: Level of Knowledge of oral hygiene in relation to oral health, objective 2: Attitude towards oral hygiene, objective 3: Oral hygiene practice and objective 4: Relationship between Knowledge, Attitude and Practice of oral hygiene.

2.1 Discuss and critique the literature

2.1.1 Knowledge of oral hygiene in relation to oral health

The concept of relationship between oral health and general health was mostly asked from the studies. The concept was asked with questions such as “oral health is closely related to the general health of the individual”, “does health of the mouth and dentition impact the health of the body?” (Gopikrishna et al., 2016; Tadin et al., 2022). Among all the articles that have been reviewed, mostly the findings showed that the knowledge level regarding relationship between oral health and general health among university students were similar except for a recent study done by Madan et al. (2021).

A study done by Kakkad et al. (2015) among engineering students in North Bangalore showed that 93% ($n = 465$) of the students thought that oral health is important for overall health. The result was similar to a study done by Tadin et al. (2022) in University of Split, Croatia which 92.5% ($n = 1000$) of the students agreed that oral health is closely related to the general health of individual. Besides, 71.7% ($n = 357$) of university students from four different faculties felt that the dental health brought impact to the body health (Gopikrishna et al., 2016). On the other hand, the result is different in a study done by Madan et al. (2021). Most of the university students (97%, $n = 494$) were not aware of the association between oral diseases and systemic diseases.

Besides, there are many ways to take care of oral health in order to prevent oral diseases. Most students (91.8%, $n = 998$) believed that proper oral hygiene can prevent dental caries and periodontal diseases (Tadin et al., 2022). However, 27.7% ($n = 138$) of

students believed that toothbrushing and flossing were able to prevent gingivitis whereas 45.6% ($n = 227$) students did not know the prevention for gingivitis (Gopikrishna et al., 2016). In addition, 56% ($n = 280$) of students had an awareness that fluoride could prevent dental caries (Kakkad et al., 2015). In another study conducted by Jaber et al. (2017), 63% ($n = 320$) of the students knew that poor oral health lead to gum disease and 59.1% ($n = 300$) of students knew that gum disease can be prevented by using toothbrush and paste. More than half of the female students (63%, $n = 63$) in a residential college knew that the main cause of gum bleeding is due to poor oral hygiene (Waheed et al., 2017). On the other hand, 60% ($n = 306$) of the students did not aware the cause of gum bleeding (Madan et al., 2021).

2.1.2 Attitude towards oral hygiene

Importance of regular visit to dentist is one of the questions that addressing the attitude of university students towards maintenance of oral health through oral hygiene. Majority of students (81.5%, $n = 414$) believed that regular visits to dentist were important (Jaber et al., 2017), similar with a study done by Waheed et al. (2017), which 65% ($n = 65$) of female students agreed that regular visits to dentist were necessary. It is recommended to visit dentist twice every six months for dental check-up. However, it was found that the university students would visit to dentist when they had problem. 64% ($n = 64$) of the students visited dentist when they were in pain (Waheed et al., 2017). Besides, 43.8% ($n = 219$) students thought that one should visit dentist when there is a problem (Kakkad et al., 2015).

2.1.3 Oral hygiene practice

There were differences in the frequency of brushing. Half of the students (53%, $n = 270$) brushing their teeth once per day whereas only 44% ($n = 224$) of them brushing teeth twice per day (Madan et al., 2021). In another study done by Kakkad et al. (2015), 67% ($n = 335$) students brushed their teeth twice per day whereas 30.8% ($n = 154$) brushed once per day. Most students (85.7%, $n = 932$) brushed their teeth several times per day (Tadin et al., 2022). On the other hand, among the male students in Qassim University, only 24% ($n = 121$) of them brushed teeth twice per day whereas 68% ($n = 68$) of female students brushed teeth twice per day respectively (Jaber et al.; Waheed et al., 2017). Another study done by Bashiru and Anthony (2014) reported that 90% ($n = 324$) students brushed teeth once a day. Moving on to the use of teeth cleaning aids, toothbrush and toothpaste was the most common teeth cleaning aids by 60.9% ($n = 303$) of students, only 2.6% ($n = 12$) and 4.6% ($n = 22$) used dental floss and mouthwash respectively (Gopikrishna, 2016). In a study done by Madan et al. (2021), 94% ($n = 479$) students used toothbrush and toothpaste as the main cleaning aid, however 40% ($n = 204$) never use mouthwash, and only 2% ($n = 10$) students used floss. Lack of usage of dental floss was also found in another study, which only 6% ($n = 30$) of students used dental floss in addition to toothbrush in their oral hygiene measures (Kakkad et al., 2015). Study done by Tadin et al. (2022) found that only 26.7% ($n = 290$), 15.3% ($n = 166$) and 20.9% ($n = 227$) of students used dental floss, interdental brush and mouthwash respectively.

2.1.4 Relationship between knowledge, attitude and practice of oral hygiene

High knowledge of oral hygiene possesses a good practice of oral hygiene. It was found that students that were grouped in high knowledge group used oral hygiene aids more frequently such as dental floss, interdental brushes, and mouth rinses (Tadin et al., 2022). In a study done by Jaber et al. (2017), 36.2% ($n = 183$) students had both good knowledge and positive attitudes. Besides, 33.7% ($n = 171$) students had both good knowledge and good practices. A minority of students had good knowledge with negative attitudes (17.5%, $n = 88$) and poor practices (23%, $n = 116$). The relationships between knowledge, attitude and practice towards oral health were done too by Lakshmi et al. (2020). The three variables depicted positive linear relationships in which the higher the knowledge, the more positive the attitude towards oral health, thus better the practice of maintaining oral health. Besides, the higher the knowledge, the better the practice too to maintain oral health.

2.1.5 Conclusion

The findings for knowledge and practice had differences among the studies. As could be seen for the level of knowledge of oral hygiene, a study done by Madan et al. (2021) showed majority of the university students did not aware of the association between oral health and general health. Besides, most of the studies also showed small percentages of university students using dental hygiene aids, especially dental floss. This could be due to lack of awareness regarding oral health. In a poor country like India, the practice of oral hygiene is low among the society and the oral health education is still poor. It is believed that many children do not practice a proper practice of oral hygiene, which they rely on