



***Oral health Knowledge among Public
Preparatory Schools Students in Benghazi City***

By

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الالكترونية او ميكانيكية بطريقة التصوير او التسجيل او المسح من دون الحصول على إذن كتابي من المؤلف
أو إدارة الدراسات العليا والتدريب جامعة بنغازي



Department of preventive and community dentistry

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Benghazi City**

**By
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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

الافتاء

إلى روح والدي رحمه الله

إلى والدي الخالدة

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Abstract

Background: Oral health is an integral part of general health , oral health knowledge is considered to be an essential prerequisite for health related practices, so, the first step in establishing a good oral habits is to provide relevant knowledge to children and adolescents to rise their awareness of how to prevent oral disease, an adequate oral health knowledge during adolescence period improve attitudes and behaviors toward dental health.

Objective: The scope of this study is to assess the level of oral health knowledge among adolescents students aged between 12-15 attending public preparatory schools in Benghazi, Libya.The main objective of the study is: To compare between female and male students in oral health knowledge level in association to the level of their parents education.

Methods: A cross sectional descriptive study was used in this research that analyzed data from a representative sample at a specific time by using a modified questionnaire, rate of response was 89.3%,the questionnaire included two parts, demographic and information about oral health, statistical analyses and chi square test were used and statistical significant was set as $p=0.05$.

Results: In the total sample, 45.8% of participants were males and 54.2% of participants were females, study analyses showed that students who were interested to get information about oral health 95%, also study analyses showed that students who were interested to get information about oral health were significantly of 97.2% in females, whilst 93.2% in males, also the results showed that the ninth grade of age fifteen have more knowledge about the importance of oral health.

Conclusion: It can be concluded from this study that females adolescents tend to visit dentist more than males, The study revealed that females engage better in oral hygiene behavior and possess a greater interest in oral health than do males, Parents help and encouragement about oral health self-care had a significant relationship with higher proportion in females, and the overall knowledge of adolescents was good.

Key word: Oral health knowledge among adolescents.

Chapter One

Introduction

1.1 Introduction

Oral health is an integral part of general health , and Oral health status has a direct impact on general health and conversely general health influences oral health. Oral health knowledge is considered to be an essential prerequisite for health related practices, also there is an association between increased knowledge and better oral health, because individuals who assimilate oral health knowledge most probably has a sense of personal control over their oral health and they are more likely to adopt self – care practice. There is a strong evidence between Oral health knowledge and better oral health practice by giving adequate information, motivation and practice of oral health measures to individuals , and explain that people with more positive attitudes towards their oral health are influenced by better knowledge in taking care of their teeth ⁽¹⁾ .

The Term knowledge is used to mean the confident understanding theoretical or practical of subject with the ability to use it for a specific purpose.

The knowledge is usually derived from information, and information when believed translates into action.

Therefore, the first step in establishing a good oral habits is to provide relevant knowledge to children and adolescents to rise their awareness of how to prevent oral disease ⁽²⁾ .

One of the essential component of primary health care is oral health services, and the rates of utilizing these services are higher for adolescents than for adult age group, because adolescence is a period when oral hygiene practices generally decline, while poor dietary habits and high caloric intake abound ⁽³⁾ .

Oral health care during adolescence period is important for several reasons including the eruption of permanent dentition which increases the number of tooth surfaces that may decay , and also results in increased early periodontal disease , thus adolescents may be at greater risk for dental disease during development period when they are establishing oral care habits .

So, it is important to review the knowledge of oral health of adolescents, even though they are educated with the objectives of including healthy life styles practices to last for a lifetime ⁽⁴⁾.

An adequate oral health knowledge during adolescence period improve attitudes and behaviors toward dental health, and enhances adolescents self – esteem, because pleasing esthetics afforded by good oral health help them to be more welcomed by others, and adolescents who hold favorable oral health related beliefs overtime have better oral health in their later years than those who do not, this implies that changing beliefs should result in changes in behaviors ⁽⁵⁾.

The weakness of experience of adolescents in oral health and health decisions with the difficulty to determine their needs, priorities and expectations represents the possibility of having positive interactions with health professionals and their own environment this would stimulate their interest on the search for knowledge and maintenance of healthier habit ⁽⁶⁾.

As adolescents became aware that good oral health is essential , the demand for dental services will turn into an effective desire for oral health care , and oral health professional started to provide programs of prevention and oral health education as well as opportunities for treatment in the office , home , school and community ⁽⁷⁾.

Developing oral health promotion programs that include oral health knowledge and dental health education within a school setting with collaboration between oral health professionals, trained teachers, and community could play a significant part in oral health promotion for adolescents ⁽⁸⁾.

During the past two decades a dramatic reduction in the prevalence of dental caries has taken place in children and adolescents of most western industrialized countries and this is primarily ascribed to changing living conditions, adoption of healthy lifestyles, improved self-care practices, effective use of fluorides and establishment of preventive oral care programs.

In contrast increasing levels of dental caries have been observed in several developing countries especially in those where preventive programs have not been implemented ⁽⁹⁾.

The World Health Organization global strategy for prevention and control of oral disease is a new strategy for managing prevention and control through strengthening the work of oral health programs for improving oral health globally especially in developing countries by linking with other technical and national public health programs of disease prevention and health promotion, as well as facing the major challenge which is translating knowledge into action programs for oral health of adolescents ⁽¹⁰⁾.

Low oral health knowledge leads to poor oral health, poor oral health has been linked to some behavioral and sleeping problems in adolescents, also can affect chewing and digestion of food, therefore affect quality of life ⁽¹¹⁾.

Poor oral health in adolescents could be attributed to several factors mainly lack of oral health awareness and over consumption of refined carbohydrate , those who suffer from this problems are twelve times more likely to have restricted activity days than those who do not which may reduce their performance at school , and success in later life ⁽¹²⁾ .

Parents undoubtedly play a role in maintaining the oral health of their children in case if they have good knowledge and attitudes toward oral health, but there are many factors emerged as significant factors influencing parents knowledge and attitudes such as socioeconomically, environmental, deprivation, ethnicity, cultural and educational status ⁽¹³⁾ .

Oral health knowledge varied with the gender and culture, this has been revealed by several epidemiologic studies showed that girls exhibited better oral health knowledge than boys as well as the role of education level in preventive measures ⁽¹⁴⁾ . The assessment of current knowledge of adolescents is very essential in order to improve their oral health knowledge ⁽¹⁵⁾ .

A multi-disciplinary approaches are needed for effective oral health education like school health programs included training teachers who can be used as oral health educators, when they have a good knowledge of oral health⁽¹⁶⁾. In addition to oral awareness programs and oral-dental screening for early identification and prevention of oral dental problems ⁽¹⁷⁾ .

This kind of approaches can be done by an ideal schools setting to deliver oral health education and preventive service to achieve oral health promotion and encourage a shift from mechanical to behavioral aspects of treatment.

Schools based approaches are more efficient than community based ones, perhaps, school aged adolescents are in particular need of preventive measures to develop a health orientated model of care.

In Benghazi city, the relationship of adolescents with health services and their knowledge of oral health is not well explored, due to lack of oral health education and insufficient preventive measures, so the oral health status of those adolescents is not good always .

The Study and the analysis of oral health knowledge allow to provide information that would play a role in education and motivation of adolescents, to instill appropriate oral health behavior by developing behavior modification strategies.

1.2 Aim of study

The aim of this study is to assess the level of oral health knowledge among adolescents students aged between 12-15 attending public preparatory schools in Benghazi, Libya.

The objective of the study is:

To compare between female and male students aged 12-15 in oral health knowledge level in association to the level of their parents education.

1.3 Research Problem

The study endeavors to answer the following research questions: What is the adolescents knowledge about oral health?

To answer the key question, this study seeks to answer following sub-questions:

- 1- What is the knowledge on oral health among preparatory schools students in Benghazi, Libya?
- 2- What is the level of knowledge in association to oral health among the gender?
- 3- How do their food habits affect oral health?
- 4- How many times do they visit the dentist?
- 5- How many students brush their teeth regularly and how long do they brush their teeth?

In addition, Oral health is an important component of our health, but it is often neglected. People generally put less importance on care aimed at maintaining their oral health, especially in developing countries.

Therefore, this study aimed at assessing the extent to which students from preparatory schools in Benghazi, Libya maintain their oral hygiene and the impact of this and their food habits on oral health. The research was also expected to help our understanding how consciously they considered their oral health.

The main reasons of the study include:

1. The need to study the knowledge on oral health among Libyan's adolescents and what services they provide.
2. To put emphasis on the public sector because they are the first to spreads the knowledge on oral health among Libyan students.

Chapter Two

Literature Review

2.1 Literature Review

Studies analyzing the need for health related information were done in Germany by Pieper et al. (2015), resulted that knowledge about information needs is still scarce. assuming the importance of comprehensive information to enable people to participate in health-related decisions ⁽¹⁸⁾ .

In a study done by Elyasi, et al.(2015), on the impact of sense of coherence on oral health behaviors a more favorable oral health behaviors was observed among those with a stronger sense of coherence suggesting that the sense of coherence can be determinant of oral health related knowledge and behaviors including tooth brushing frequency, daily smoking, and dental attendance ⁽¹⁹⁾ .

A study by De.lugt-lustig KH, et al.(2014), on the effect of oral health care education on knowledge , attitude and skills of care home nurses , reported that oral health care education may have a positive effect on care home nurses, oral health care knowledge and attitude and on care home resident oral hygiene where any effect on care home nurses oral hygiene care skills could not be found ⁽²⁰⁾ .

In a study done in Tanzania by Carneiro et al.(2011), on oral health knowledge and practices among secondary school students, 93.4% were reported to have an acceptable level of practices and sugary food consumption, 98.1% of the participants had adequate knowledge on the importance of dental checkups, however there was no statistical significant difference observed between ages or sex, 4.3% of the students reported, the use of other items for cleaning like tooth picks ⁽²¹⁾ .

A study by R.O owino et al.(2011), on oral health knowledge among an adolescent has been done in the rural and urban Morogoro city, to find out the knowledge on oral hygiene and oral disease , this study showed that school

teenagers had partial knowledge about oral diseases and good knowledge of basic oral hygiene measures necessary to maintain proper oral health ⁽²²⁾ .

In study done by Okemwa. K.A et al.(2010), on oral health knowledge and oral hygiene practices among school children in Uasin-Gichu district 42% brush their teeth, about 48% brushed their teeth at least twice daily, female students brushed more frequently than male students, use of tooth paste was reported by 39.9% of the students less than half of the students knew the causes of the teeth decay and how to prevent it ⁽²³⁾ .

A study by Gavião (2008), on oral health related quality of life in children done in Brazil (2008) reported that children and parents do not necessarily share similar views about child oral health related quality of life, some of parents may have limited knowledge about their children oral health ⁽²⁴⁾ .

A study by Hugoson. A et al.(2005), in Jonköping , Sweden during Thirty years (1973 – 2003) on dental care habits and knowledge of oral health showed that during the period between (1973-2003) there was an increase in the percentage of individuals treated by the public dental service in comparison to private practice ⁽²⁵⁾ .

In Study done by Richard G.watt and A .sheiham on health policy inequalities in oral health in (1999), showed that improvements in oral health that have occurred over the last thirty years have been largely a result of fluoride tooth pastes and social, economic and environmental factors and oral health inequalities will only be reduced through the implementation of an effective and appropriate oral health promotion policy ⁽²⁶⁾ .

In study done by E.J kay, D.locker (1996), about dental health education effectiveness were reported that dental health intervention have a small positive but temporary effect on plaque accumulation and no discernible effect on caries increment and a consistent positive effect on knowledge levels ⁽²⁷⁾ .

Chapter Three

Methodology

3.1 Study design

This study is a cross-sectional study.

3.2 Duration of study

This study was conducted from March 2017 to January 2018 in Benghazi, Libya.

3.3 Study population and sampling

The population of the current study consists of public preparatory schools students in Benghazi city, the number of the schools were eighty two distributed in seven areas, forty two school was selected randomly for this study. The total number of the students attending these schools in (2016-2017) was (25570), the males students number was (11861), and females students number was (13709). One public preparatory school for boys , and one for girls were simple random chosen from each area. The grades were randomly chosen and the students were systematically alternative chosen.

3.4 Sample size

The sample size was determined by a sample size calculation according to Krejcie –Morgan ⁽²⁸⁾. A 95% confidence interval and significance level of 5% was used.

$$n = \frac{\chi^2 NP(P - 1)}{d^2(N - 1) + \chi^2(1 - P)} \cong 2743^1$$

Where:

n: Sample size calculation

N: Population size study

χ^2 : Chi-square with one degree freedom and $\alpha=5\%=0.05$

Prevalence of dental knowledge, P= 50%=0.5

d: The error rate allowed=2.5%=0.025.

¹ Equation of Krejcie –Morgan and It is known as the American Partnership for Education.

3.5 Data collection method

This study was based on a questionnaire, the survey questionnaires distributed for chosen sample students. Therefore, the total sample of the questionnaire survey was 2450 to whom questionnaires were distributed. Then the sampling strategy does not seem to be a critical issue except for taking into consideration the non-response or missing information for the sample students, so the response rate was 89.3% (2450 out of 2743 students). The approval from authorities from Benghazi university and ministry of education were provided and the permission for participation was delivered to schools principles.

3.6 Questionnaire design

The aim of the questionnaire survey in this study is to evaluate oral health knowledge for students included eighteen questions. The questionnaire was given to the students with explaining the purpose of the study and they were requested to complete it and return it back ,also they have been told that they have the right to refuse or with draw from the participation. Hence, it requires constructing the questionnaire (see Appendix I) in such way so that it is specific enough to reveal answers to the questions, yet general enough to allow respondents not to reveal any sensitive information. A closed-ended question, a selection of answers from which the respondent is asked to select one.

3.7 Structure of the Questionnaire

The questionnaire (see Appendix I) developed for this study is divided into two parts, first part (section A) is for respondent's background information and includes school name, grade, gender, age, address, and his/her level of parents education. The second part (section B) is the main part of the questionnaire, aims to gather respondents' knowledge about oral health on eighteen statements. The knowledge on aspects of oral health focused on influence of oral health on general health, importance of oral hygiene, diet effect, etiology of dental caries, ideal daily tooth brushing, duration and frequency⁽²⁹⁻³⁰⁾ (see the Appendix I).

3.8 Pre Testing and the Pilot Study

A pilot study was done to pre-test the questioner to assess the acceptability of the questions and avoid potential misunderstanding of the questions and according to the results the appropriate adjustment were made. The pre-testing of the survey questionnaire for this study obtained some valuable comments and ideas about the questionnaire's content, wording, and sequence; and hence, some modifications were required regarding the wording and scaling of certain questions, but not on any key content of the questionnaire. The questionnaire in this research went through a number of developmental stages before final distribution. In the first stage, the questionnaire was modified from WHO⁽²⁹⁻³⁰⁾.

3.9 Test of Reliability

The equivalence measure of reliability for this study was done to focus on the internal consistence or internal homogeneity of the set of statements, which formed the statements in the questionnaire as mentioned above. In this study, the co-efficient alpha score (or Cronbach's Alpha) ⁽³¹⁾, is used to measure the reliability the survey questionnaire. The alpha coefficients in thirty cases as pilot study for eighteen statements are more than 72%. These results indicate that the data obtained from questionnaire survey are reliable and suitable for further analysis.

3.10 Statistical methods

Chi-square test of proportions was used to compare differences in proportions between the groups, All analyses were performed by excel 2010, and using SPSS version 23 and statistical significance was set as $\alpha = 0.05$.

Chapter Four

Results

4.1 Profile of Respondents

It is important to introduce the background of respondents participating in the survey to understand the level of the respondents. Therefore, this study aimed to explore the knowledge on oral health of preparatory schools students in Benghazi, Libya and to maintain their oral hygiene and the relationship of this and their food habits on oral health. The gender, age of students, classes parents education levels of the questionnaire survey respondents are presented in the following table in order to facilitate a better understanding on their background.

Table 4.1 states that 1122 (45.8%) of respondents participating in the survey were males and 1328 (54.2%) were females. This table presents that 202(8.2%) of respondents participating in the survey are aged 12 years, followed by 662(27.0%) of age from 13 years and most participants were in the age 14 years of about 828(33.8%), whereas758(30.9%) from age 15 years. This indicates that most of the respondents from adolescents.

The Table also shows that (33.4%) (or 818 out of 2450) of the respondents participating in seventh grade, while (34.2%) (or 837 out of 2450) in eighth grade. It is also notable that (32.4%) (or 795 out of 2450) of the respondents participating in the survey are in the ninth grade.

Educational qualification of the parents is an important indicator about respondent's background. This table shows that the majority of parents' participating have obtained a Bachelor's Degree or obtained Master's degree of about 943(38.5%), and 949(38.7%) for both parents.

Table 4.1: Description of the samples according to the demographic background of respondents

Variables	Classification	Numbers of respondents	Percentage
Gender	Male	1122	45.8
	Female	1328	54.2
	Total	2450	100.0%
Age	12 years	202	8.2
	13 years	662	27.0
	14 years	828	33.8
	15 years	758	30.9
	Total	2450	99.9%
Grade	Seventh grade	818	33.4
	Eighth grade	837	34.2
	Ninth grade	795	32.4
	Total	2450	100.0%
Father Education Level	No education	210	8.6
	Primary school	124	5.1
	Preparatory school	592	24.2
	Secondary school	581	23.7
	University or higher education	943	38.5
	Total	2450	100.0%
	Mother Education Level	No education	182
Primary school		215	8.8
Preparatory school		543	22.2
Secondary school		561	22.9
University or higher education		949	38.7
Total		2450	100.0%

4.2 Demographic characteristics

Table 4.2 shows the distribution of students according to their grade with gender. This distribution is quite sensible because different grades were same for male or female. Therefore, there was no evidence to suggest that more females than males in different grades, which was not statistically significant in difference (p-value = 0.603).

Table 4.2: Corss-tabalation of students between grades and gender

Class	Gender		Total
	Male	Female	
Seventh grade	364	454	818
	44.5%	55.5%	100.0%
Eighth grade	393	444	837
	47.0%	53.0%	100.0%
Ninth grade	365	430	795
	45.9%	54.1%	100.0%
Total	1122	1328	2450
	45.8%	54.2%	100.0%
$\chi^2 = 1.011$			df=2
			p-value=0.603

Table 4.3 and Figure 4.1 show distribution of students according to their school grade with age. This distribution is different in level classes according to age. Therefore, this difference could be considered as students repeat many times in the same class. The results suggest that there were statistically significant (p-value =0.000) that differ to the responses provided by the three class groups.

Table 4.3: Corss-tabalation of students between grades and Age

class	Age				Total
	12	13	14	15	
Seventh grade	187	493	101	37	818
	22.9%	60.3%	12.3%	4.5%	100.0%
Eighth grade	13	156	553	115	837
	1.6%	18.6%	66.1%	13.7%	100.0%
Ninth grade	2	13	174	606	795
	0.3%	1.6%	21.9%	76.2%	100.0%
Total	202	662	828	758	2450
	8.2%	27.0%	33.8%	30.9%	100.0%
$\chi^2 = 2059.23$ $df=6$ $p\text{-value}=0.000$					

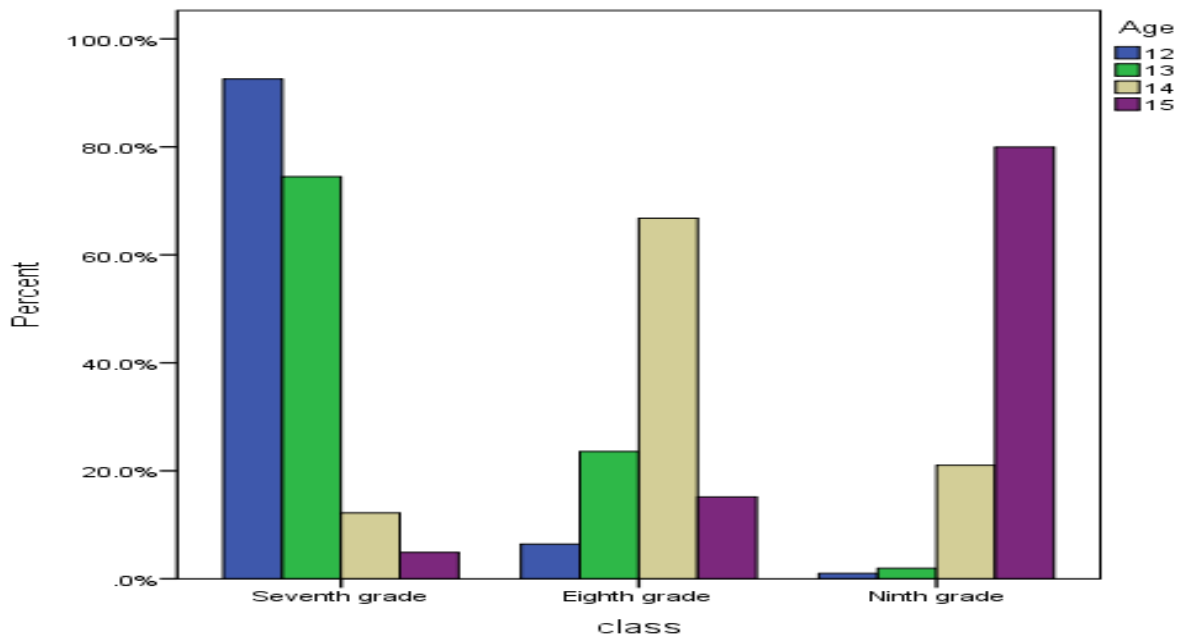


Figure 4.1: Bars plot students according to grade with age

4.3 Knowledge about Oral health among students with regard of gender

Table 4.4 compare female and male dental students' preventing oral disease. Since males and females have different psychological behaviors, it is possible that their oral health knowledge might be different as well. It has been found that females engage in better oral health care for preventing oral disease. In general, this result suggested that most of the students know the importance of oral health care for preventing oral disease, which was statistically significant (p-value=0.01) in association.

Table 4.4: Importance of oral health care for preventing oral disease

Gender	Yes	No	Total
Male	1069	53	1122
	95.3%	4.7%	100.0%
Female	1297	31	1328
	97.7%	2.3%	100.0%
Total	2366	84	2450
	96.6%	3.4%	100.0%
$\chi^2 = 10.486$ $df=1$ $p\text{-value}=0.001$			

Gender differences in knowledge about dental caries caused by bacteria were shown in Table 4.5 and Figure 4.2 that about 896(79.9%) of males and 1130(85.1%) of females answered yes, whilst 226(20.1%) of males answered no and 198(14.9%) of females did so. The percentage of this student’s knowledge about dental caries caused by bacteria among males was much lower than that of females (p-value=0.01).

Table 4.5: Student’s knowledge about dental caries caused by bacteria according to gender

Gender	Yes	No	Total
Male	896	226	1122
	79.9%	20.1%	100.0%
Female	1130	198	1328
	85.1%	14.9%	100.0%
Total	2026	424	2450
	82.7%	17.3%	100.0%
$\chi^2 = 11.637$			df=1
			p-value=0.001

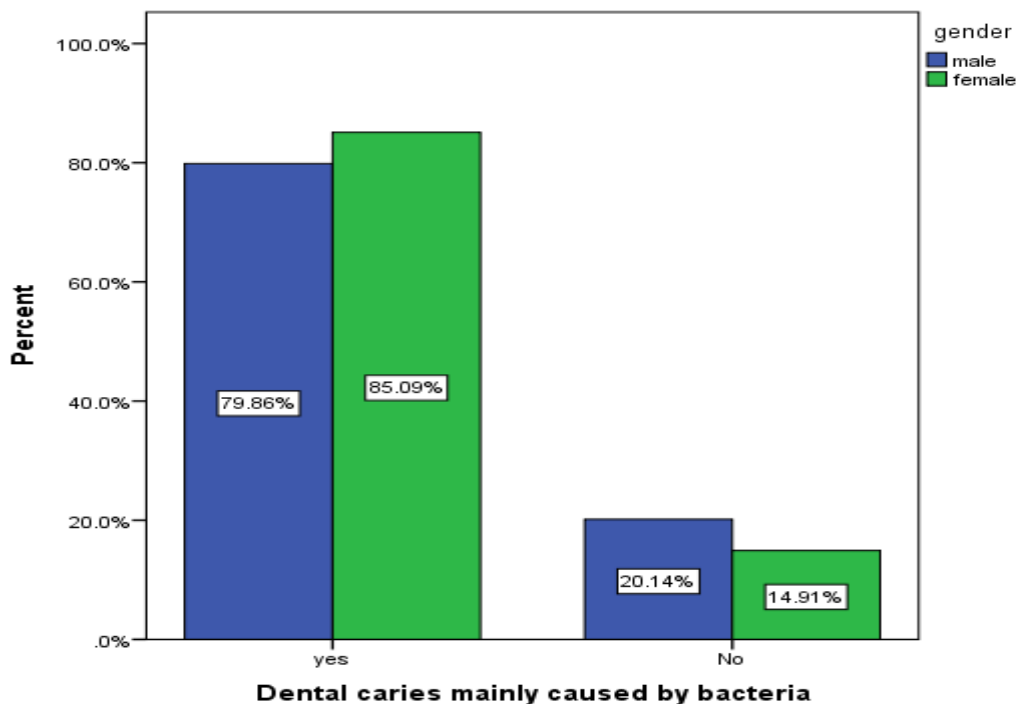


Figure 4.2: Bars plot of dental caries caused by bacteria according to gender

Table 4.6 shows that gender differences were also found with respect to bleeding gingiva, which more female students know that gum bleeding means an inflamed gum (gum disease) compared to males (females 1212, 91.0% - males 959, 85.5%); (p-value=0.000).

Table 4.6: Bleeding Gum means that inflamed gum according to gender

Gender	Yes	No	Total
Male	959	163	1122
	85.5%	14.5%	100.0%
Female	1212	116	1328
	91.3%	8.7%	100.0%
Total	2171	279	2450
	88.6%	11.4%	100.0%
$\chi^2 = 20.223$ $df=1$ $p\text{-value}=0.000$			

Table 4.7 and Figure 4.3 show the proportion of individuals with knowledge about every painful tooth should be removed. Painful tooth was the most common dental problem among students, where 841(75.0%) answered yes of male and 281(25.0%) answered no, while 854(64.3%) female answered yes and about 474(36%) answered no. The knowledge about every painful tooth should be removed among participants has significantly (p -value=0.000) contributed to achieving the oral health knowledge.

Table 4.7: Knowledge about every painful tooth should be removed by gender

Gender	Yes	No	Total
Male	841	281	1122
	75.0%	25.0%	100.0%
Female	854	474	1328
	64.3%	35.7%	100.0%
Total	1695	755	2450
	69.2%	30.8%	100.0%
$\chi^2 = 32.344$			df=1
			p-value=0.000

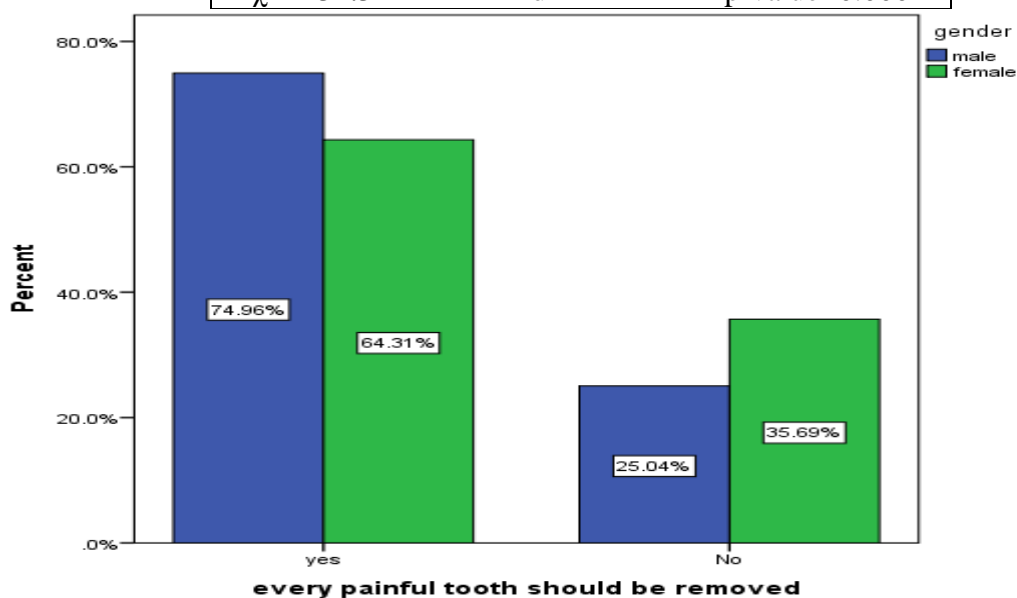


Figure 4.3: Bars plot of painful tooth should be removed by gender

Consumption of sweet foods was mentioned, 1008(89.8%) of male answered yes and 114(10.2%) answered no, whereas 1239(93.3%) of female answered yes and about 89(6.7%) answered no of those who developed dental caries (see Table 4.8), so their participation in the questionnaire survey has significantly contributed (p-value=0.002) in attaining the objective of the oral health knowledge.

Table 4.8: Eating too much sweet food causes dental caries by gender

Gender	Yes	No	Total
Male	1008	114	1122
	89.8%	10.2%	100.0%
Female	1239	89	1328
	93.3%	6.7%	100.0%
Total	2247	203	2450
	91.7%	8.3%	100.0%
$\chi^2 = 9.573$ $df=1$ $p\text{-value}=0.002$			

Gender differences in dental knowledge about poor oral health cause decay and periodontal disease are shown in Table 4.9 Female has more knowledge of about 1196(90.1%) know that poor dental conditions cause decay and periodontal disease than male of about 956(85.2%). It should be noted that a significant portion of respondents (9.9% of female-14.8% of male) selected the “NO” option. Hence, the result of comparison between male and female to examine the significance of yes or no answer was statistically significantly (p-value=0.000).

Table 4.9: Poor oral health cause decay and periodontal disease according to gender

Gender	Yes	No	Total
Male	956	166	1122
	85.2%	14.8%	100.0%
Female	1196	132	1328
	90.1%	9.9%	100.0%
Total	2152	298	2450
	87.8%	12.2%	100.0%
$\chi^2 = 13.419$ $df=1$ $p\text{-value}=0.000$			

A source of learning about an oral health is provided from parents, dentist and from different media. Table 4.10 and Figure 4.4 demonstrate that gender differences in the source of learning provided from different aspects, such as learning from parents were of about 560(50%) of male, followed by 362(32.3%) from dentist and of about 200(18%) from different media, while learning from parents were of about 545(44.8%) of female, 374(28.2%) from dentist and of about 359(27%) from different media. The results suggest that there is statistically significantly association (p-value=0.000) gender differences with from different aspects.

Table 4.10: The source of learning about oral health by gender

Gender	From parents	From dentist	From different media	Total
Male	560	362	200	1122
	49.9%	32.3%	17.8%	100.0%
Female	595	374	359	1328
	44.8%	28.2%	27.0%	100.0%
Total	1155	736	559	2450
	47.1%	30.0%	22.8%	100.0%
$\chi^2 = 29.368$ $df=2$ $p\text{-value}=0.000$				

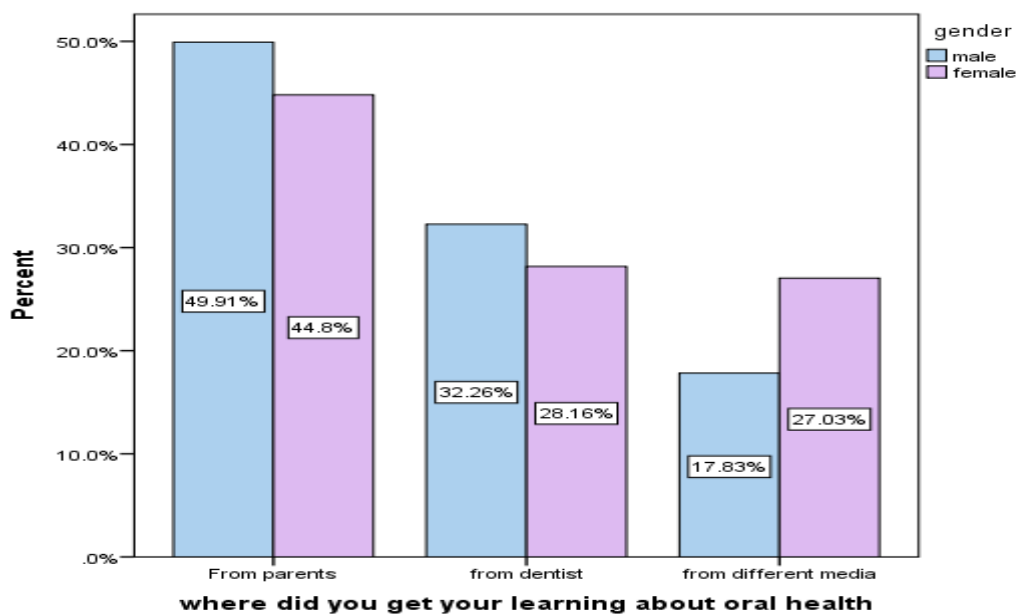


Figure 4.4: Bars plot of the source of learning about oral health by gender

Table 4.11 shows that males 776(69.2%) tend to visit dentists more reason than females843 (63.5%), hence among the treatment options could be tooth extraction, whereas females checkup394 (about 30%) tend to visit dentists more than males273(24.3%), as well as esthetic females slightly more than males. The results suggest that there is statistically significantly association (p-value=0.009) gender differences with respect to visit dentists.

Table 4.11: The reasons of visiting dentist by gender

Gender	Pain	Check up	Esthetic	Total
Male	776	273	73	1122
	69.2%	24.3%	6.5%	100.0%
Female	843	394	91	1328
	63.5%	29.7%	6.9%	100.0%
Total	1619	667	164	2450
	66.1%	27.2%	6.7%	100.0%
$\chi^2 = 9.445$ $df=2$ $p\text{-value}=0.009$				

Table 4.12 and Figure 4.5 illustrate that gender differences in the reasons for not visiting dentist. The reasons behind not visiting dentist given by the students may include: firstly, that most of the students have no pain, such as males 807 (about 72%) which was more than females 868 (65.4%), and the percentage of the fear of dental treatment was less in males 184 (16.4%) than females 353 (26.6%). Cost of dental treatment in males 131 (11.7%) more than females 107 (8.1%) for not visiting dentist. Therefore, the responses reflect that there is a statistically significant association for not visiting dentist among genders.

Table 4.12: The reasons for not visiting dentist by gender

Gender	No pain	Fear of dental treatment	Cost of the treatment	Total
Male	807	184	131	1122
	71.9%	16.4%	11.7%	100.0%
Female	868	353	107	1328
	65.4%	26.6%	8.1%	100.0%
Total	1675	537	238	2450
	68.4%	21.9%	9.7%	100.0%
$\chi^2 = 40.795$ $df=2$ $p\text{-value}=0.000$				

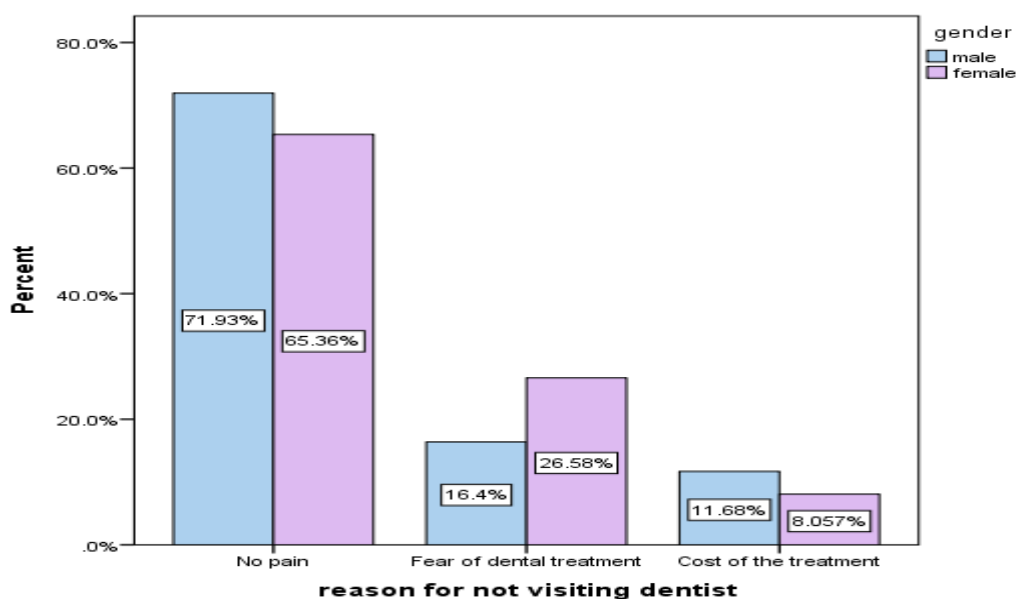


Figure 4.5: Bars plot of the reasons for not visiting dentist by gender

Table 4.13 shows brushing teeth started before schooling or after schooling, according to gender. From this table and as well as the graph the majority of students started brushing teeth before schooling (males 988, 88.1% - females 1206,90.8%), while only a minority started after schooling (males 134,11.9% - females 122,9.2%). Therefore, the test results suggest that significant difference exists in the responses of the before and after schooling according to gender of respondents.

Table 4.13: Brushing teeth started

Gender	Before schooling	After schooling	Total
Male	988	134	1122
	88.1%	11.9%	100.0%
Female	1206	122	1328
	90.8%	9.2%	100.0%
Total	2194	256	2450
	89.6%	10.4%	100.0%
$\chi^2 = 4.937$ df=1 p-value=0.026			

The frequency of tooth brushing according to gender. As shown in Table 4.14 the majority of students brushes twice a day or more (males 840,75%-females1141, 86%), whilst once a day 194(17.3%) of males and 134(10.1%) of females. The analyses showed that participants who did not clean or seldom brush were 88(7.8%) of males and 53(4.0%) of females. Therefore, it can be inferred from the test results that the differences observed in the response were statistically significant.

Table 4.14: Frequency of tooth brushing by gender

Gender	Twice a day or more	Once a day	Seldom or no brush	Total
Male	840	194	88	1122
	74.9%	17.3%	7.8%	100.0%
Female	1141	134	53	1328
	85.9%	10.1%	4.0%	100.0%
Total	1981	328	141	2450
	80.9%	13.4%	5.8%	100.0%
$\chi^2 = 48.420$ $df=2$ $p\text{-value}=0.000$				

Table 4.15 shows the respondent answer about oral health condition and gum problems. 74.1% of males reported that their teeth condition was very good and good compared to 71.3% of the females. 17.2 % of males had average whereas 16.8% of females had this. 3.8% of males reported that their teeth condition was poor and very poor compared to 4.4% of the females. About 5.0% of males and 7.6% of females answered (don't know). However, the findings were statistically significant (p-value =0.031) and could have been by chance.

Table 4.15: The description of the health of teeth and gum by gender

Gender	Very good	Good	Average	Poor	Very poor	Don't know	Total
Male	592	239	193	30	12	56	1122
	52.8%	21.3%	17.2%	2.7%	1.1%	5.0%	100.0%
Female	714	232	223	38	20	101	1328
	53.8%	17.5%	16.8%	2.9%	1.5%	7.6%	100.0%
Total	1306	471	416	68	32	157	2450
	53.3%	19.2%	17.0%	2.8%	1.3%	6.4%	100.0%
$\chi^2 = 12.269$ $df=5$ $p\text{-value}=0.031$							

4.4 Knowledge on oral health among age group

Table 4.16, this result suggested that majority of students know the importance of oral health care for preventing oral disease, which was statistically significant in association (p-value =0.043).

Table 4.16: Importance for preventing oral disease of students according to age group

Age group	Yes	No	Total
12	194	8	202
	96.0%	4.0%	100.0%
13	629	33	662
	95.0%	5.0%	100.0%
14	804	24	828
	97.1%	2.9%	100.0%
15	739	19	758
	97.5%	2.5%	100.0%
Total	2366	84	2450
	96.6%	3.4%	100.0%
$\chi^2 = 7.664$ $df=3$ $p\text{-value}=0.043$			

Age groups differences in knowledge about dental caries caused by bacteria were shown in Table 4.17 that about 161(79.7%) of 12 year and 555(83.8%) of 13 year answered yes, 705(85.1%) of 14 year followed by 605(79.8%) of 15 year whilst 41(20.3%) of 12 year answered no and 107(16.2%), 123(14.9%) and 153(20.2%)of 13 year, 14 year and 15 year respectively did so. The percentage of student’s knowledge about dental caries were statistically significantly (p-value=0.021).

Table 4.17: Student’s knowledge about dental caries caused by bacteria according to age group

Age	Yes	No	Total
12	161	41	202
	79.7%	20.3%	100.0%
13	555	107	662
	83.8%	16.2%	100.0%
14	705	123	828
	85.1%	14.9%	100.0%
15	605	153	758
	79.8%	20.2%	100.0%
Total	2026	424	2450
	82.7%	17.3%	100.0%
$\chi^2 = 9.732$ $df=3$ $p\text{-value}=0.021$			

Table 4.18 illustrates that the age group differences in the regular teeth brushing protect from decay and bleeding gum. The analyses showed that the majority of the participants who answered yes to regular tooth brushing protect from decay and bleeding gum compared to participants who answered no to regular tooth brushing for all ages. There was significant association in regular teeth brushing between differences ages (p-value=0.014).

Table 4.18: Regular teeth brushing protect from decay and gum bleeding by age group

Age	Yes	No	Total
12	195	7	202
	96.5%	3.5%	100.0%
13	633	29	662
	95.6%	4.4%	100.0%
14	785	43	828
	94.8%	5.2%	100.0%
15	699	59	758
	92.2%	7.8%	100.0%
Total	2312	138	2450
	94.4%	5.6%	100.0%
$\chi^2 = 10.636$ $df=3$ $p\text{-value}=0.014$			

Table 4.19 and Figure 4.6 show the proportion of individuals with knowledge about every painful tooth should be removed, according to age. Dental decay (caries) is the most common oral disease in the world, most of the people go to dentist when severe pain arises and when caries destroy maximum part of crown of the tooth. The analyses showed that 146(72.3%) answered yes of age 12 year and 56(27.7%) answered no, similar result found of age 13 year, while age 14 year and 15 year have approximately same result for yes and no answer. the knowledge about of every painful tooth should be removed among participants have significantly (p-value=0.040).

Table 4.19: knowledge about every painful tooth should be removed by age group

Age	Yes	No	Total
12	146	56	202
	72.3%	27.7%	100.0%
13	483	179	662
	73.0%	27.0%	100.0%
14	554	274	828
	66.9%	33.1%	100.0%
15	512	246	758
	67.5%	32.5%	100.0%
Total	1695	755	2450
	69.2%	30.8%	100.0%
$\chi^2 = 6.301$ $df=3$ $p\text{-value}=0.040$			

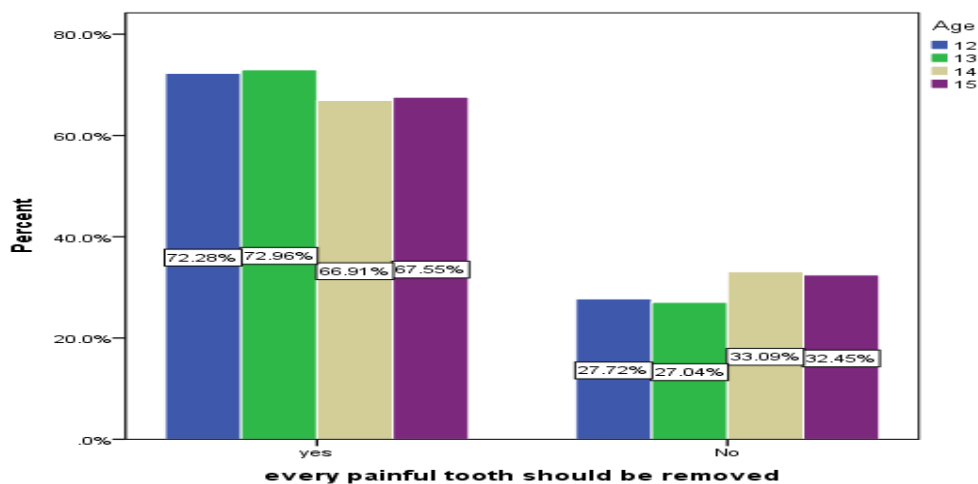


Figure 4.6: Bars plot of painful tooth should be removed by age group

Fluoride tooth paste is essential for preventing dental caries and also for good oral health. As shown in Table 4.20 the proportion of 12 year, 13 year, 14 year and 15 year of the knowledge about fluoride tooth paste strengthens the teeth and prevent dental caries by age was significantly association (p-value=0.001).

Table 4.20: knowledge about fluoride tooth paste strengthens the teeth and prevent dental caries by age

Age	Yes	No	Total
12	181	21	202
	89.6%	10.4%	100.0%
13	593	69	662
	89.6%	10.4%	100.0%
14	735	93	828
	88.8%	11.2%	100.0%
15	633	125	758
	83.5%	16.5%	100.0%
Total	2142	308	2450
	87.4%	12.6%	100.0%
$\chi^2 = 15.596$ $df=3$ $p\text{-value}=0.001$			

Table 4.21 shows that the knowledge about gingivitis and oral health, most of the participants answered yes to the facts about oral health could help preventing teeth loss and gingivitis by age group. These also reported a significantly association (p-value=0.033) among those who answered yes and no.

Table 4.21: knowledge about facts about oral health could help preventing teeth loss and gingivitis by age

Age	Yes	No	Total
12	177	25	202
	87.6%	12.4%	100.0%
13	570	92	662
	86.1%	13.9%	100.0%
14	752	76	828
	90.8%	9.2%	100.0%
15	663	95	758
	87.5%	12.5%	100.0%
Total	2162	288	2450
	88.2%	11.8%	100.0%
$\chi^2 = 8.744$ $df=3$ $p\text{-value}=0.033$			

A source of learning about an oral health is provided from parents, dentist and from different media. Table 4.22 shows that age group differences in the source of learning provided from different aspects, such as learning from parents were of about 108(53%) of age 12 year, followed by 67(33.2%) from dentist and of about 27(13.4%) from different media, while learning from parents were of about 327(49.4%) of age 13 year, 220(33.2%) from dentist and of about 115(17.4%) from different media. Age 14 year and 15 year have approximate same results of the source of learning provided from different aspects. The results suggest that there is statistically significantly association (p-value=0.000).

Table 4.22: The source of learning about oral health by age

Age	From parents	From dentist	From different media	Total
12	108	67	27	202
	53.5%	33.2%	13.4%	100.0%
13	327	220	115	662
	49.4%	33.2%	17.4%	100.0%
14	384	232	212	828
	46.4%	28.0%	25.6%	100.0%
15	336	217	205	758
	44.3%	28.6%	27.0%	100.0%
Total	1155	736	559	2450
	47.1%	30.0%	22.8%	100.0%
$\chi^2 = 33.604$ $df=6$ $p\text{-value}=0.000$				

Table 4.23 shows that age 12 year 141(69.8%) tend to visit dentists more frequently because of pain than checkup 51(25.2%) and esthetic 10(5.0%). whereas age 13 year and 14 year tend to visit dentists (66.0% and 64.1%) more than checkup for both ages (of about 29%), as well as esthetic (of 4.7% and 6.6%). Age 15 year 510(67.3%) tend to visit dentists more frequently of pain than checkup180 (23.7%) and esthetic68 (9.0%). The results suggest that there is statistically significantly association (p-value=0.007) age group differences with respect to visit dentists .

Table 4.23: The reasons of visiting dentist by age

Age	Pain	Check up	Esthetic	Total
12	141	51	10	202
	69.8%	25.2%	5.0%	100.0%
13	437	194	31	662
	66.0%	29.3%	4.7%	100.0%
14	531	242	55	828
	64.1%	29.2%	6.6%	100.0%
15	510	180	68	758
	67.3%	23.7%	9.0%	100.0%
Total	1619	667	164	2450
	66.1%	27.2%	6.7%	100.0%
$\chi^2 = 17.788$ df=6 p-value=0.007				

Table 4.24 illustrates that age group differences in the reasons for not visiting dentist. The reasons behind not visiting dentist given by the students may include: firstly, that most of students have no pain, fear of dental treatment or cost of dental treatment. Most of the participants in this study have no pain rather than other options. Therefore, the responses reflect that there is statistically significantly association for not visiting dentist among age group.

Table 4.24: The reasons for not visiting dentist by age group

Age	No pain	Fear of dental treatment	Cost of the treatment	Total
12	135	48	19	202
	66.8%	23.8%	9.4%	100.0%
13	412	196	54	662
	62.2%	29.6%	8.2%	100.0%
14	592	158	78	828
	71.5%	19.1%	9.4%	100.0%
15	536	135	87	758
	70.7%	17.8%	11.5%	100.0%
Total	1675	537	238	2450
	68.4%	21.9%	9.7%	100.0%
$\chi^2 = 36.724$ $df=6$ $p\text{-value}=0.000$				

Table 4.25 shows oral health condition and gum disease. Age 12yr less description of the health of teeth and gum than the other group ages. Most of the participants in this study have reported that their teeth condition was very good and good compared to other options. However, the findings were statistically significant (p-value= 0.046) and could have been by chance.

Table 4.25: The description of the health of teeth and gum by age group

Age	Very good	Good	Average	Poor	Very poor	Don't know	Total
12	113	37	32	4	4	12	202
	55.9%	18.3%	15.8%	2.0%	2.0%	5.9%	100.0%
13	350	130	126	10	6	40	662
	52.9%	19.6%	19.0%	1.5%	.9%	6.0%	100.0%
14	467	132	132	29	13	55	828
	56.4%	15.9%	15.9%	3.5%	1.6%	6.6%	100.0%
15	376	172	126	25	9	50	758
	49.6%	22.7%	16.6%	3.3%	1.2%	6.6%	100.0%
Total	1306	471	416	68	32	157	2450
	53.3%	19.2%	17.0%	2.8%	1.3%	6.4%	100.0%
$\chi^2 = 24.683$ $df=15$ $p\text{-value}=0.046$							

According to Table 4.26 the high percentages of yes answer in all of education-mother level, and Level of education-mother was significantly associated (p-value= 0.020).

Table 4.26: Level of mother education and the importance of the state of student's teeth

Level of education-mother	Yes	No	Total
No education	176	6	182
	96.7%	3.3%	100.0%
Primary school	211	4	215
	98.1%	1.9%	100.0%
Preparatory school	539	4	543
	99.3%	.7%	100.0%
Secondary school	556	5	561
	99.1%	.9%	100.0%
University – Higher education	942	7	949
	99.3%	.7%	100.0%
Total	2424	26	2450
	98.9%	1.1%	100.0%
$\chi^2 = 11.616$ $df=4$ $p\text{-value}=0.020$			

Table 4.27 shows the proportion of individuals with knowledge about every painful tooth should be removed, according to level of education-mother. About of 1695(69.2%) answered yes and 755(30.8%) answered no. The knowledge about of every painful tooth should be removed among participants according to level of education-mother have significantly (p-value=0.000) contributed to achieving the oral health knowledge.

Table 4.27: knowledge about every painful tooth should be removed according to level of mother education

Level of education-mother	Yes	No	Total
No education	141	41	182
	77.5%	22.5%	100.0%
Primary school	167	48	215
	77.7%	22.3%	100.0%
Preparatory school	381	162	543
	70.2%	29.8%	100.0%
Secondary school	400	161	561
	71.3%	28.7%	100.0%
University – Higher education	606	343	949
	63.9%	36.1%	100.0%
Total	1695	755	2450
	69.2%	30.8%	100.0%
$\chi^2 = 27.192$ $df=4$ $p\text{-value}=0.000$			

A source of learning about an oral health is provided from parents, dentist and from different media. Table 4.28 shows that Level of education-mother differences in the source of learning provided from different aspects, such as learning from parents were about 1155(47.1%) in total, followed by 736(30.0%) from dentist and about 559(22.8%) from different media. The results suggest that there is statistically significantly association (p-value=0.021).

Table 4.28: The source of learning about oral health according to level of mother education

Level of education-mother	From parents	From dentist	From different media	Total
No education	81	57	44	182
	44.5%	31.3%	24.2%	100.0%
Primary school	96	84	35	215
	44.7%	39.1%	16.3%	100.0%
Preparatory school	248	168	127	543
	45.7%	30.9%	23.4%	100.0%
Secondary school	256	177	128	561
	45.6%	31.6%	22.8%	100.0%
University – Higher education	474	250	225	949
	49.9%	26.3%	23.7%	100.0%
Total	1155	736	559	2450
	47.1%	30.0%	22.8%	100.0%
$\chi^2 = 18.063$ $df=8$ $p\text{-value}=0.021$				

Oral health self-care according to level of education-mother as shown in Table 4.29 about 2186(89.2%) in total of students answered most of the time, while about 264(10.8%) in total of students answered seldom or no encouragement. Therefore, it can be inferred from the test results that the differences observed in the response were statistically significant association (p-value=0.002).

Table 4.29: Oral health self-care according to level of education-mother

Level of education-mother	Most often time	Seldom or no encouragement	Total
No education	159	23	182
	87.4%	12.6%	100.0%
Primary school	186	29	215
	86.5%	13.5%	100.0%
Preparatory school	475	68	543
	87.5%	12.5%	100.0%
Secondary school	489	72	561
	87.2%	12.8%	100.0%
University – Higher education	877	72	949
	92.4%	7.6%	100.0%
Total	2186	264	2450
	89.2%	10.8%	100.0%
$\chi^2 = 16.535$ $df=4$ $p\text{-value}=0.002$			

Table 4.30 on the Survey of oral diseases, data have consistently shown that all of education-father level answered yes 2424(98.9%) in total of state of student's teeth of their sons. Level of education-father was significantly associated (p-value =0.015).

Table 4.30: Level of father education and the importance of the state of student's teeth

Level of education-father	Yes	No	total
No education	203	7	210
	96.7%	3.3%	100.0%
Primary school	122	2	124
	98.4%	1.6%	100.0%
Preparatory school	588	4	592
	99.3%	.7%	100.0%
Secondary school	577	4	581
	99.3%	.7%	100.0%
University – Higher education	934	9	943
	99.0%	1.0%	100.0%
Total	2424	26	2450
	98.9%	1.1%	100.0%
$\chi^2 = 12.394$ df=4 p-value=0.015			

Table 4.31 shows the proportion of individuals with knowledge about every painful tooth should be removed, according to level of education-father. About of 1695(69.2%) answered yes and 755(30.8%) answered no, this result consistent of level of education-mother in total. The knowledge about every painful tooth should be removed among participants according to level of education-father have significantly (p-value=0.000) contributed to achieving the oral health knowledge .

Table 4.31: knowledge about every painful tooth should be removed according to level of father education

Level of education-father	Yes	No	total
No education	164	46	210
	78.1%	21.9%	100.0%
Primary school	91	33	124
	73.4%	26.6%	100.0%
Preparatory school	422	170	592
	71.3%	28.7%	100.0%
Secondary school	419	162	581
	72.1%	27.9%	100.0%
University – Higher education	599	344	943
	63.5%	36.5%	100.0%
Total	1695	755	2450
	69.2%	30.8%	100.0%
$\chi^2 = 26.604$ $df=4$ $p\text{-value}=0.000$			

The result showed that students interested to get information about oral health were of 95.4%, whereas participants who were not about 4.6%.

Table 4.33: would you like to have more information about oral health in general

would you like to have more information about oral health		
	Frequency	Percent
yes	2337	95.4
No	113	4.6
Total	2450	100.0

The result showed that students interested to get information about oral health were significantly of 97.2% in females, whilst 93.2% in males.

Table 4.34: would you like to have more information about oral health in gender

would you like to have more information about oral health			
gender		Frequency	Percent
male	yes	1046	93.2
	No	76	6.8
	Total	1122	100.0
female	yes	1291	97.2
	No	37	2.8
	Total	1328	100.0

Chapter Five

Discussion

5.1 Discussion

Although oral health is an important issue, people from developing countries often neglect it since they have lack knowledge and education about oral health, especially in adolescent. In addition, oral health care is considered expensive and unaffordable for poor people. Oral health is a widely researched topic for people in developed countries, Therefore, this work is about oral health knowledge among preparatory Schools students in Benghazi , Libya.

In the total sample, 1122(45.8%) of participants were males and 1328(54.2%) of participants were females (for more details see Table 4.1).

The results of this study revealed that there was no significant association between the grade and gender (p-value =0.603,Table 4.2).

The distribution of the students between the students grades and age have highly significant association (p-value =0.000), especially in ninth grade of age fifteen(Table 4.3). This might happen in this age because they have more knowledge about important of oral health care,

The study further revealed that the knowledge about the importance of oral health care for preventing oral disease of gender was highly significant (p-value =0.001) of females compared to males(Table 4.4). In particular, the female knowledge about presence of bacteria was a cause of dental caries of about 1130(85.1%),(p-value=0.001,Table 4.5). The majority of students were knowledgeable about gingival bleeding means inflamed gingiva as another significant association 1212(91.3%),(p-value=0.000,Table 4.6).

Pain is the most common symptom for which people seek dental or medical care. In this study, The students showed negative response to the question of every painful tooth should be removed and the higher percentage was yes answer in male 841(75 %) than in female 854(64.3%),(p-value=0.000,Table4.7).

High consumption of sugar is one of the risk factor for tooth decay (dental caries), food habits (about sweetened drinks, sugar, sweet food intake... etc.) is very harmful for causes oral health. In this study, most of the students were satisfactory reacted positively about consuming too much sweet food, while low percentage of the students reacted negatively of about 203(8.3%),(p-value=0.002,Table4.8) which is consistent with the results of a study done in Tanzania on oral health knowledge and practices among secondary school students reported that students had acceptable level of knowledge about sugary food consumption ⁽²¹⁾ .

poor oral health causes decay and lead to periodontal disease, which was high in females than males in this study, also learning about oral health was significant, but it was higher in proportion of males than proportion of females and differs according to the source.

The respond of the students to the question “why do you usually visit dentist”, had a significant difference in proportion of females more than in proportion in males, Possible reasons for this would include the following; females tend to visit dentists more frequently than males, hence among the treatment options could be tooth extraction.

The majority of the respondents have knowledge about starting brushing teeth was significant different in proportion higher of female 1206(90.8%) than in proportion of males, as well as the frequency of the tooth brushing(Tables4.13-4.14), these finding are also supported by Okemwa . K.A et al. on oral hygiene practices among school children in Vasni – Gichu district reported that female's student brushed more frequently than males. ⁽²³⁾ .

Parents help and encouragement about oral health self-care had a significant relationship between parents and students (p-value=0.002),(Table 4.29), these result were in disagreement with a study done in Brazil 2008

reported that children and parents do not necessarily share similar views about child oral health, and some parents have limited knowledge and care about their children oral health⁽²⁴⁾.

Comparison of students according to gender how to describe the health of their teeth and gum from very good to very poor between males and females was significantly. Females engage in better oral hygiene behavior, possess a greater interest in oral health and perceive their own oral health to be better than do males.

Regarding the distribution of students according to age there was significant difference that the students of age fifteen showed the higher and lower percentage of the important of oral disease in compare to other age group, as another statistical significant difference about the knowledge of the cause of dental caries mainly by bacteria the student aged fourteen showed the higher and lower percentage 705(85.1%) and 123(14.9%) in compare to other age group (p-value=0.021, Table 4.17). Overall, there was a lack of oral health related knowledge in all age groups and both genders. Oral health related life style practices did not differ between boys and girls except for the cleaning behavior.

The knowledge about regular teeth brushing can protect from decay and gingival bleeding was significantly high in students aged twelve 195(96.5%) with (p-value=0.014) in compare to other age group (Table 4.18). These finding were close to the study done in "Rural Nepal" 2011 by Manoj Humagai in regular teeth brushing and awareness of gingival bleeding⁽³²⁾.

The response to the question of every painful tooth should be removed was statistical significant difference and the higher and lower percentage was in age thirteen in compare to other age group (Table 4.19).

The knowledge about using fluoride tooth paste strengthens the teeth and prevent dental caries was significant and high, and both twelve and thirteen ages were equals in compare to other age group (Table4.20).This was consistent with a study done in China 2003 by Zhu L.et al⁽³³⁾.

The reaction of students to the question about the knowledge of the facts about oral health could help preventing teeth loss and gingivitis was significant and slightly differs between ages, the higher percentage of yes answer was in age fourteen as well as the lower percentage of no answer with (p-value=0.033) in compare to other age group (Table 4.21).

The Age twelve showed the significant values in response to the learning about oral health from parents , dentist or different media where (p-value=0.00,Table 4.22).

Significantly about reason of visiting dentist, a few difference between ages in positive and negative response . The reason of visiting and not visiting dentist was significant (Tables 4.23-4.24).

A few student reacted very poor in the description of the health of their teeth and gingiva while other evaluations differ between ages (Table4.25).

According to the distribution of the students is association with the level of mother education, It was significantly that the majority of students had mother educational level of preparatory school and university or higher education with same high and low percentage (99.3% -7%) in knowledge of the importance of state of the teeth with (p-value=0.020,Table 4.26), while in response to the painful tooth should be removed the higher and lower values were within primary school educational level.

Significantly the higher percentage was in higher education level and lower percentage was in primary school level in the source of learning about oral

health but in reason for not brushing the no educational level of mother was statistically significant in both high and low percentage .

Parents help and encouragement about oral health self-care was statistically significant in university–higher education level of mothers with percentage 877(92.4%) with (p-value=0.002,Table 4.29) .The significant association of parents education was consistent with a study done in India 2016 by Wahengbam et al.⁽³⁴⁾ .

Regarding level of father education the state of teeth is in a great importance was significant and the values of positive and negative response were equals in students of preparatory and secondary fathers level of education (p-value 0.015,Table 4.30).

It was significant that student who their father had no educational level showed highest and lowest percentage in response to the question of every painful tooth should be removed (p-value=0.000,Table 4.31).

Another significant in the source of the learning about oral health where the student of higher fathers educational level showed 478(50.7%)from parents while students no fathers educational level showed 38(18.1%) from different media (p-value=0.004,Table 4.32). For supporting these finding ,a comparison between this study and a study done in Qatar (2016), by Mohamed sultan ⁽³⁵⁾ . Some results were nearly consistent and compatible in many aspects, for example: the overall response rate was 96% , and parents were the most popular source of oral health knowledge followed by dentists and media.

Study analyses showed that students interested to get information about oral health were of 2337(95.4%), whereas participants who are not 113(4.6%),(Table 4.33). Study analyses showed that students interested to get information about oral health were significantly of 1291(97.2%) in females, whilst 1046(93.2%) in males(Table 4.34).

Chapter six

Conclusion and Recommendation

6.1 Conclusion

According to the results of this study there was 95.4% of students interested to get information about oral health, while 4.6% of them did not.

Also, study analyses showed that students who were interested to get information about oral health were significantly of 97.2% in females, while in males were 93.2% in comparing with females.

The results showed that the ninth grade of age fifteen have more knowledge about important of oral health care, whereas there was no significant association between the grade and gender.

It can be concluded from this study that females tend to visit dentist more than males.

The study revealed that females engage in better oral hygiene behavior and possess a greater interest in oral health better than males do.

Parents help and encouragement about oral health self-care was significant relationship between parents and students with higher proportion was in females 90.7%.

6.2 Recommendation

1. More information, motivation and practice of oral health measures should be given to the students to improve their attitudes.
2. The oral health education programs should be established in schools curriculum in order to inform students and teachers about beneficial of oral health.

3. More oral health programs for improving oral health like prevention and control of oral disease should be done in schools setting emphasizing on the importance of regular dental visits as a part of preventive measures.
4. More studies should be conducted in other regions for comparison.

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Appendices

Appendix I

Questionnaire about oral

Health knowledge among preparatory

Schools students in Benghazi , Libya

Section A :- Demographic background

1- Name of the school (Appendix-II) :

2- Grade :

3- Gender : male female

4- Age :

Level of parents education :

mother

father

No education

primary shcool

preparatory school

secondary school

university – higer education

Section B : knowledge about oral health

1-Do you know that ,The state of the teeth is a great important to us

Yes

No

2- Do you know that oral health care is important for preventing oral disease

Yes

No

3- Do you know that Dental caries mainly caused by bacteria

Yes

No

4- Is bleeding Gum means inflamed gum

Yes

No

5- Do you know that Regular teeth brushing can protect from decay and bleeding gum

Yes

No

6- Every painful tooth should be removed

Yes

No

7- Do you know that Consuming too much sweet food causes dental caries

Yes

No

8- Do you know that Using fluoride tooth paste strengthens the teeth and prevent dental caries

Yes

No

9- If you knew the facts about oral health you could help preventing teeth loss and gingivitis .

Yes

No

10- Do you know that Poor oral health cause decay and periodontal disease

Yes No

11- Where did you get your learning about oral health

From parents from dentist from different media

12- Why do you usually visited dentist

pain checkup esthetic

13- Reason for not visiting dentist

No pain
 Fear of dental treatment
 Cost of the treatment

14- Brushing teeth started

before schooling after schooling

15- Frequency of tooth brushing

twice a day or more
 once a day
 seldom or no brush

16- Parents help and encouragement about oral health self-care

Most often time
 Seldom or no encouragement

17- How would you describe the health of your teeth and gum

very good good average
 poor very poor don't know

18- Would you like to have more information about oral health

Yes

No

Thanks for your participation

استبيان عن: المعرفة بصحة الفم خاص بطلبة المدارس الاعدادية

العامّة بمدينة بنغازي

الجزء الاول :

1- اسم المدرسة :

2- الصف :

3- الجنس : ذكر أنثي

4- العمر :

5- المستوى التعليمي للوالدين

الاب		الام
<input type="checkbox"/>	لا يوجد	<input type="checkbox"/>
<input type="checkbox"/>	تعليم ابتدائي	<input type="checkbox"/>
<input type="checkbox"/>	تعليم اعدادي	<input type="checkbox"/>
<input type="checkbox"/>	تعليم ثانوي	<input type="checkbox"/>
<input type="checkbox"/>	تعليم جامعي -عالي	<input type="checkbox"/>

الجزء الثاني

1- هل تعلم ان صحة وسلامة الأسنان هو شيء مهم بالنسبة لنا

لا نعم

2- هل تعلم ان العناية بصحة الفم تعتبر مهمة لمنع حدوث أمراض الفم

لا نعم

3- تسوس الاسنان غالبا يحدث بواسطة بكتيريا

لا نعم

4- نزيف اللثة يعني لثة ملتهبة

لا نعم

5- هل تعلم ان تنظيف الاسنان بانتظام بالفرشاه والمعجون يمكن ان يحميها من التسوس ويمنع نزيف

اللثة

لا نعم

6- السن التي تسبب الالم يجب ان تزال (تخلع)

لا نعم

7- هل تعلم ان الافراط في أكل السكريات يسبب تسوس الاسنان

لا نعم

8- هل تعلم ان استخدام معجون الاسنان الذي يحتوي علي مادة الفلوريد يقوي الاسنان ويمنع

تسوسها

لا نعم

9- لو عرفت الحقائق عن صحة الفم قد تستطيع منع فقدان الاسنان والتهاب اللثة

لا نعم

10- هل تعلم ان الحالة الصحية السيئة للفم تسبب تسوس الاسنان وامراض اللثة

لا نعم

11- من اين حصلت علي معلومات عن صحة الفم

من والديك من طبيب الاسنان من وسائل الاعلام المختلفة

12- لماذا تزور طبيب الاسنان عادة

بسبب الالم الفحص الدوري المنتظم تجميلياً

13- سبب عدم زيارتك لطبيب الاسنان

لاجود للالم الخوف من علاج الاسنان لما قد يسببه من ألم

التكلفة المرتفعة لعلاج الاسنان

14- تنظيف الاسنان بالفرشاة والمعجون يبدأ

في عمر ما قبل المدرسة من عمر ما بعد المدرسة

15- عدد مرات تنظيف الاسنان

مرتين يومياً

مره في اليوم

نادراً او لا يوجد

16- مساعدة وتشجيع الوالدين للأهتمام الشخصي بصحة الفم

أغلب الاحيان نادراً أو لا يوجد

17- كيف تصنف الحالة الصحية لإسنانك ولثتك

جيد جداً

جيد

متوسط

سيئة

سيئه جداً

لا أدري

18- هل ترغب بالحصول علي المزيد من المعلومات علي العناية بصحة الفم

لا نعم

شكراً للمشاركة

Appendix II

Schools involved in the study

Schools	NO.of students	Percent
Tolitala	60	2.4
Haraer Libya	60	2.4
Alkali alarabi	60	2.4
albashaer	60	2.4
alfihae	59	2.4
24December	61	2.5
Mosab bin omair	58	2.4
Aboubaker alsadik	61	2.5
Othman bin afan	59	2.4
Shohdaa Jandoba	59	2.4
Shohdaa Alzintan	58	2.4
Gortaba	61	2.5
Tagrift	60	2.4
Khaled bin walid	59	2.4
Tarq bin ziad	60	2.4
Ghrnata	59	2.4
Ebin khaldon	50	2.0
Yousef bouker	61	2.5
Shohdaa Alfwyhat	61	2.5
Bodrisa	59	2.4
alwifia	52	2.1
Rayat alastglal	60	2.4
Alsida hajer	61	2.5
Noor almarifa	59	2.4
Omar abdelaziz	61	2.5
Osama bin zaid	59	2.4
Alamel	62	2.5
Altakdam	60	2.4
Amna bint wahb	60	2.4
Zhrt almadaen	60	2.4
alkahera	55	2.2
Shohdaa alhani	54	2.2
Shohdaa binina	90	3.7
Alsomod	60	2.4
Alkarama	59	2.4
Sokina bint alhosin	58	2.4
Alastglal	61	2.5
Alshomok	59	2.4
Barqa	59	2.4
Alnoaqia bnat	59	2.4
Om habiba	57	2.3
Total	2450	100.0



السادة المحترمون / مديري المؤسسات التعليمية

عن طريق السادة المحترمون / مديري مكاتب الخدمات التعليمية

تحية طيبة وبعد ،،،

نغتنم ،،، فرصة هذا الكتاب للإشارة بمجهوداتكم السخية التي تبذلونها لأجل النهوض بالعملية التعليمية وأهتماماً منا بالجانب الصحي لابنائنا الطلاب .

علية ،،، نامل منكم التعاون التام مع الطيبة/ نجلاء عوض السعيطي وتقديم يد العون والسماح لها بالدخول لإجراء الأحصائيات والأستبيانات على طب الفم الوقائي وطب المجتمع المتعلق بطلبة الشق الثاني من التعليم الاساسي .

ولكم منا فائق الاحترام والتقدير

والسلام عليكم

رافع محمد التاورغي
مدير مكتب النشاط المدرسي
بشؤون التربية والتعليم بنغازي



صور لكل من :

1- السيد/ رئيس قسم الصحة المدرسية

2- السادة / رؤساء وحدات النشاط المدرسي بالمناطق

3- للحفظ

ك/// الفضلى ط/// الفضلى



Index: 759 الرقم الإشاري

Date: 2016-12-21 الموافق

التاريخ

السادة المحترمين / اسراء الدارس من الإعدادية بمدينة بنغازي

بسم التوبة

تفيم كلية طب وجراحة الفم والأسنان وقسم الدراسات العليا بالكلية بان
السيدة **د. نجلاء عويضي المسعيطي** مسجلة بقسم الدراسات العليا لغرض نييل
درجة الماجستير فسي تخصص طب الفم الوقائي وطب المجتمع، وهي بمسند إجسراء
دراسات وأبحاث ميدانية على طلبة الدارس الإعدادية العادة.

عليه نأمل من سيادتكم الموافقة بالاذن للدكتور **نجلاء عويضي المسعيطي** للدخول الى
المدارس الإعدادية بمدينة بنغازي وإجراء الإحصائيات والاستبيان من طلاب المدارس.

نشكركم على حسن تعاونكم

وكل مناهجكم والتقدير

د. محفوظ فرج العاني

وكيل الكلية للشؤون العلمية المكلف



-
- ملف المصادر
- ملف المعني
- قسم الدراسات العليا



Index: 759 الرقم الإشاري Date: 2016 12 21 الموافق التاريخ

السيد المحترم / وكيل وزارة التعليم العالي - بنغازي

بمما التلبية

تفيد كلية طب وجراحة الفم والأسنان وقسم الدراسات العليا بالكلية بان
السيدة **د. نجلاء عوض السعيطي** مسجلة بقسم الدراسات العليا لغرض نيل
درجة الماجستير في تخصص طب الفم الوقائي وطب المجتمع، وهي بصدد إجراء
دراسات وأبحاث ميدانية على طلبة المدارس الإعدادية العامة.

عليه نأمل من سيادتكم الموافقة بالاذن للدكتورة **نجلاء عوض السعيطي** للدخول الى
المدارس الإعدادية بمدينة بنغازي وإجراء الإحصائيات والاستبيان من طلاب المدارس.

نشكركم على حسن تعاونكم

ولكم منا جزيل الشكر والتقدير

د. محفوظ فرج العاتني

وكيل الكلية للشؤون العلمية المكلف



- ملف الصادر
- ملف المعني
- قسم الدراسات العليا

الملخص العربي

المقدمة:

صحة الفم هي جزء لا يتجزأ من الصحة العامة، وايضا لها تأثير مباشر على صحة الجسم، كما تعتبر المعرفة بصحة الفم والأسنان شرطا أساسياً للممارسات المتعلقة بالصحة، مع وجود علاقة بين زيادة المعرفة وصحة الفم، لأن الأفراد الذين لديهم المعرفة بصحة الفم والأسنان على الأرجح لديهم الشعور بالسيطرة الشخصية على صحتهم ويعتبرون هم اكثر من يمارس العادات الصحية السليمة.

ويمكن رفع مستوى المعرفة بصحة الفم والممارسات الصحية من خلال إعطاء الدافع والمعلومات الكافية للأفراد مع شرح مواقف أكثر ايجابية تجاه صحتهم .

المعرفة بصحة الفم والأسنان خلال فترة المراهقة هي مهمة لعدة أسباب منها بروز الأسنان الدائمة التي تزيد من عدد من أسطح الأسنان التي قد تصاب بالتسوس او الزيادة في أمراض اللثة في وقت مبكر، وبالتالي قد يكون المراهقون أكثر عرضة لأمراض الأسنان خلال فترة النمو، وأيضا لأن فترة المراهقة هي فترة تتناقص فيها ممارسات النظافة الفموية وتكثر العادات الغذائية السيئة وتناول المأكولات ذات السعرات الحرارية العالية.

نظرا لقلة المعلومات حول المعرفة بصحة الفم لدى المراهقين في مدينة بنغازي، فإن هذه الدراسة تعترم تقديم البيانات التي من شأنها أن تلعب دورا في تعليم وتحفيز المراهقين.

هدف الدراسة:

الهدف من هذه الدراسة هو تقييم مستوى معرفة طلاب المدارس الاعدادية العامة في مدينة بنغازي بصحة الفم، كذلك المقارنة بين الذكور و الاناث من حيث مستوى المعرفة بالتوافق مع المؤهل العلمي للوالدين.

منهجية الدراسة:

تم جمع البيانات من طلاب المدارس الاعدادية العامة في مدينة بنغازي من خلال تطوير استمارة الاستبانة وفقا لمعايير منظمة الصحة العالمية ، والتي قسمت إلى جزئيين رئيسيين هما: البيانات الديموغرافية عن المشاركين في الدراسة -مثل النوع والعمر، في حين خصص القسم الثاني لأهمية صحة الفم.

تم استخدام أسلوب العينة العشوائية البسيطة لاختيار المدارس الاعدادية العامة في مدينة بنغازي، حيث بلغ العدد (42) مدرسة من إجمالي عدد المدارس البالغ عددها حوالي 82 مدرسة، لذا فان نسبة تمثيل العينة للمجتمع حوالي 51%. حيث بلغ عدد الطلبة الكلي لجميع المدارس لسنة (2016م-2017م) حوالي (25570)، وتم توزيع عدد (2450) استبانة عشوائياً على طلبة العينة.

نتائج الدراسة:

لتحقيق أهداف الدراسة وتحليل البيانات التي تم تجميعها، تم استخدام العديد من الأساليب الإحصائية المناسبة باستخدام الحزمة الإحصاء للعلوم الاجتماعية SPSS، وقد اظهرت النتائج 45.8% من الطلبة المشاركين في الدراسة من فئة الذكور و 54.2% من فئة الاناث، وأن ما نسبته 95% من الطلاب المشاركين لديهم الاهتمام او الرغبة للحصول على المعرفة عن صحة الفم والاسنان، بينما 5% من الطلاب المشاركين ليس لديهم الرغبة للحصول على المعرفة بصحة الفم والاسنان.

كما اظهرت النتائج ان الاناث هن اكثر اهتماما بصحة الفم من الذكور.

وعليه فانه: يجب التركيز على اعطاء اكبر قدر ممكن من المعلومات عن صحة الفم واهميته بالنسبة لصحة الجسم عن طريق برامج التوعية الصحية في حلقات النقاش المدرسية او في المناهج الدراسية، اضافة الى التركيز على فائدة زيارة طبيب الاسنان.



المعرفة بصحة الفم ضمن طلبة المدارس الاعدادية العامة في مدينة بنغازي

إعداد

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