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Dental Health among Adult Saudi Nationals in Buraydah Qassim

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Abstract: ***Objective: to search for better understanding on the dental health among adult Saudi Arabian people in Buraidah Qassim .Methods: The questionnaire was distributed to a random sample of a total of 250 adult Saudi patients from King Fahad Specialist Hospital in Buraidah Qassim and this hospital is under Ministry of Health. Result: In this study More than 50% of the patients who visited the dental clinic are aged 19 to 40 years old, 66 % (165) females compared to males 34% (85). The findings indicates that More than half (56%) claimed of cleaning their teeth once a day which is less than the recommended frequency of brushing, there was no significant differences on perceived oral health status of patients across their gender and location. 69.6% patients claimed of pain and discomfort in the teeth or mouth during the past 12 months but no significant association between sex and pain discomfort. There were no significant associations between and among sex, location, educational level and last visit of the patients to the dental clinics. Conclusion: The dental health level of adult Saudi patient in BuraydaQassim is average and needs to be improved, oral health teaching like seminars and outreach program should be conducted to prevent complications regarding their conditions.***

Keywords: Dental health, oral health, oral disease, oral cavity

1. Introduction

Oral health is a being free from disorders or diseases that involve the oral cavity [17]. Dental health is often neglected as part of the integral body. Hence, there are numerous people who died due to untreated oral diseases. These diseases arise because of some factors like poor oral hygiene, unhealthy diet and harmful intake of alcohol and tobacco.

Globally, almost 100% and 60% to 90% have dental cavities for adults and school children, respectively. Additionally, it is also found that 15-20% of adult ages 35-44 years old have gum disease. The upsurge of oral diseases is profound in underprivileged populace [16]. In the study of [7], conducted to 10,735 Saudi Arabian people, they found that 16.3%, 85.0% and 52% never brush their teeth, not using floss or never use Miswak respectively.

Dental health practices are greatly needed to reduce the incidence of oral diseases that affects the quality of life among Saudis. Poor oral hygiene is documented by previous studies and clearly a need for oral health education in Saudi Arabia. Ministry of Health in the Kingdom of Saudi Arabia should press oral health programs among its citizens to decrease and eradicate oral diseases that affect the general health of the populace.This study aim to search for better understanding on the dental health among adult Saudi Arabian people in BuraidahQassim that can lead to reduction or elimination of dental problems and oral diseases.

2. Methodology

The study will be framed in quantitative descriptive design.The participants of the study were recruited from King Fahad Specialist Hospital in BuraidahQassim. This hospital is under Ministry of Health and has dental clinic. Inclusion criteria included was adult Saudi National who seeks dental care.A purposive sampling technique was utilized in the study. Samples of 250 adult Saudi Nationals, meeting the eligibility criteria were included in the study. Participants of the study were selected based on the purpose of the sample.The researchers used the modified questionnaire adapted from Oral Health Questionnaires for Adults from World Health Organization. This tool was composed of 15 major questions with sub questions. To test for the validity and reliability of the instruments, five (5) initial questionnaires/survey forms was disregarded to assess the weaknesses of the instruments. In data analysis application of **frequency and percentage** was initially made to determine the patients' profiles. Percentage was calculated by dividing the frequencies for each of the options by the number of population and multiplying by 100. T-test and ANOVA were used to check significant difference among the variables. To determine any relationships between and among the variables, the **Pearson's Product Moment Correlation** was applied. All the data were processed using the Microsoft Excel Program and SPSS (Statistical Package for Social Sciences) Version 20.0.

The researchers requested permission from the hospital authorities prior to data gathering. Hospital research protocols and research ethics were strictly followed in pursuing the study. Written consent was secured first to the participants before starting the study. All information were taken from the participants were considered highly confidential and no part of this study will divulge the identities of the participants or their families.

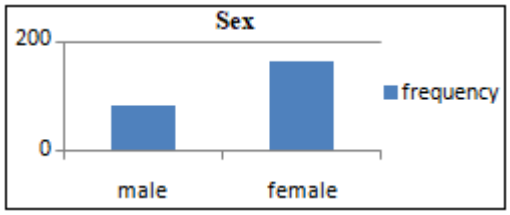
3. Result

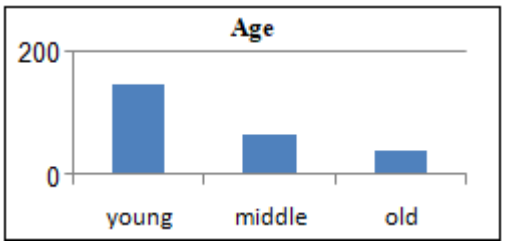
In the study, 250 patients participated andmost of them were females with 66 % (165) compared to males with only 34% (85). Patients from urban areas with 60.4% (151) seek more dental care compared to periurban and rural clients with 22.8% and 16.8%, respectively.More than 50% of the participants came from young adult aged 19 to 44 years old visited the dental clinic often compared to middle and old adults

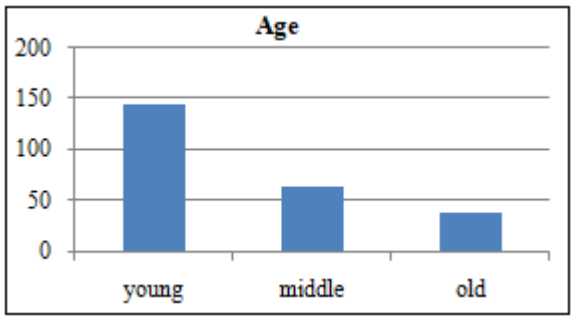
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Table 1: Patients' gender, location and age

Gender	Frequency	Percentage
Male	85	34
Female	165	66
Location		
Urban	151	60.4
Periurban	57	22.8
Rural	42	16.8
Age		
19-40 years old (Young adult)	146	58.4
40-65 years old (Middle adult)	65	26.0
65 years and above (Old adult)	39	15.6



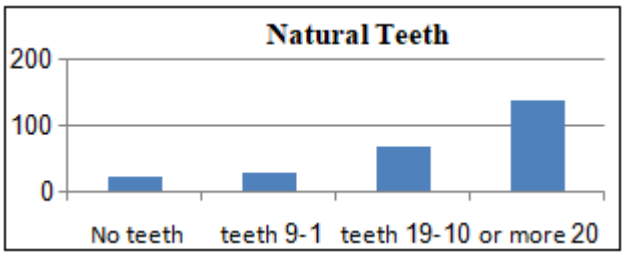


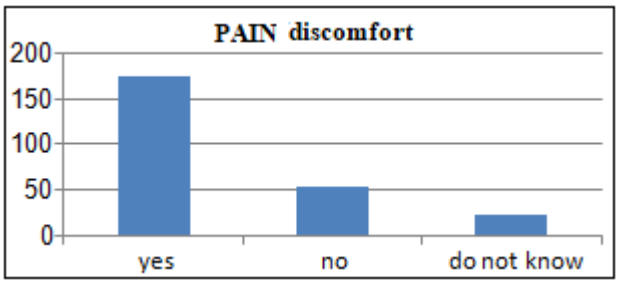


Most of the participants of the study have 20 teeth or more with 54.4% and only 8.4% have no natural teeth. There were 69.6% patients claimed of pain and discomfort in the teeth or mouth during the past 12 months while 9.2% were not aware of the presence of pain and discomfort in their mouth.

Table 2: Patients' number of natural teeth and pain or discomfort in the teeth or mouth during the past 12 months

Number of Natural Teeth	Frequency	Percentage
No natural teeth	21	8.4
1-9 teeth	26	10.4
10-19 teeth	67	26.8
20 teeth or more	136	54.4
Pain or discomfort in the teeth or mouth during the past 12 months		
Yes	174	69.6
No	53	21.2
Do not know	23	9.2

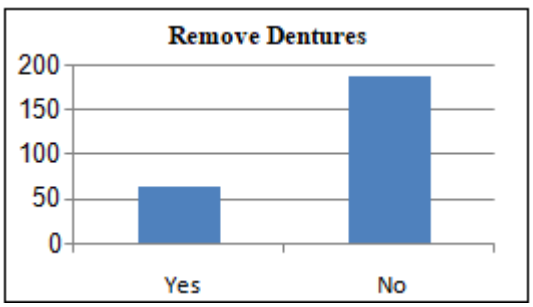


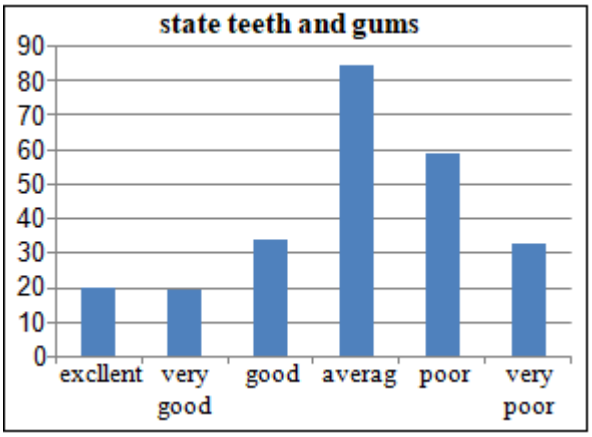


Used of dentures among subjects of study was not evident because 74.8% stated of not using removable false teeth. Clients teeth and gums condition were perceived only as average (34%) followed by poor (23.6%), good (13.6%) and only few claimed excellent (8%) on their teeth and mouth conditions.

Table 3: Presence of removable dentures and state of the teeth and gums of the patients

Presence of Removable Dentures	Frequency	Percentage
Yes	63	25.2
No	187	74.8
State of the Teeth and Gums		
Excellent	20	8.0
Very Good	19	7.6
Good	34	13.6
Average	85	34.0
Poor	59	23.6
Very Poor	33	13.2



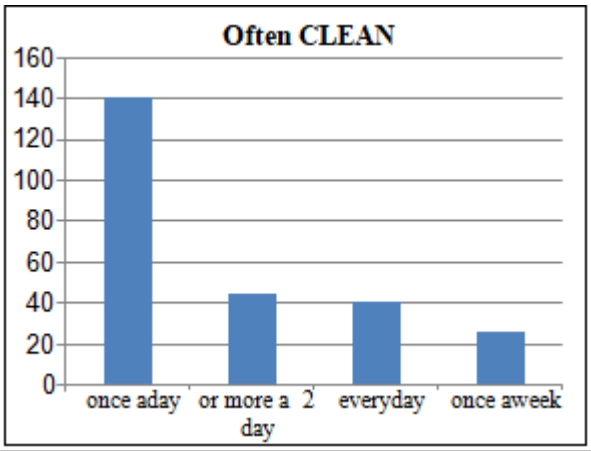


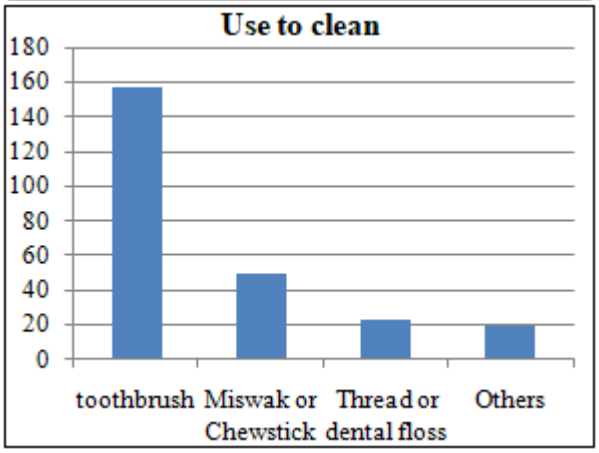
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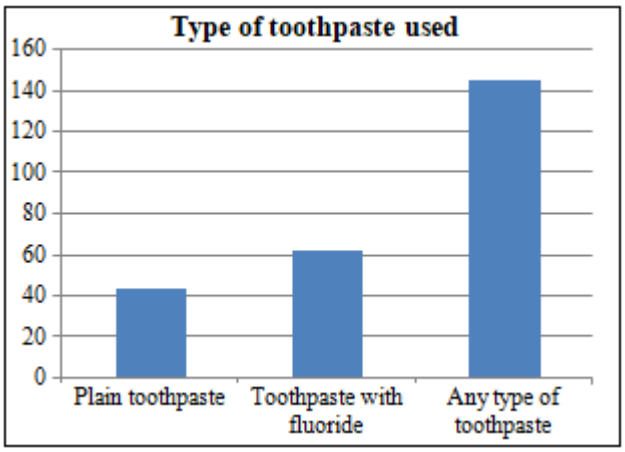
More than half (56%) claimed of cleaning their teeth once a day while 2 or more times of a day and everyday scored 17.6 % and 16 %, respectively. Using toothbrush to clean their teeth was apparent with 62.8 % followed by miswak or chewstick with 20% and only 9.2% claimed of using dental floss to clean their teeth. The participants of the study were not particular on the type of toothpaste they used because more than half (58%) stated of using any type of toothpaste while 24.8% were specific to type of toothpaste with fluoride.

Table 4: Patients' often to clean the teeth, use to clean the teeth and type of toothpaste

Often to clean the Teeth	Frequency	Percentage
Once a day	140	56.0
2 or more times a day	44	17.6
Everyday	40	16.0
Once a week	26	10.4
Use to clean the teeth		
Toothbrush	157	62.8
Miswak or Chewstick	50	20.0
Thread or dental floss	23	9.2
Others	20	8.0
Type of toothpaste used		
Plain toothpaste	43	17.2
Toothpaste with fluoride	62	24.8
Any type of toothpaste	145	58.0





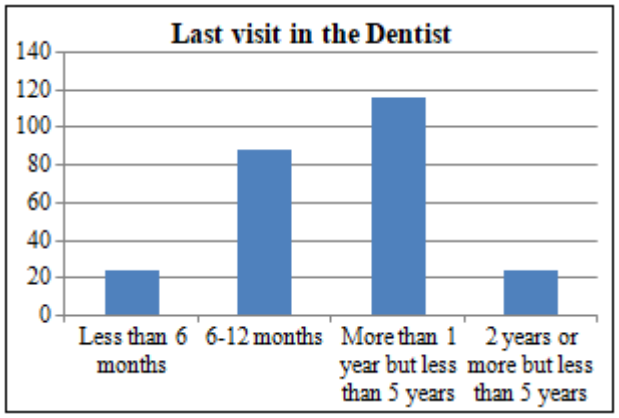


Most of participants' of the study last visited the dentist more than 1 year but less than 5 years with 46 % and during the last 6 to 12 months period there were 35.2% patients visited the dentist. Surprisingly, there were only 9.2% clients seek dental care for less than 6 months and 2 years or more but less than 5 years period.

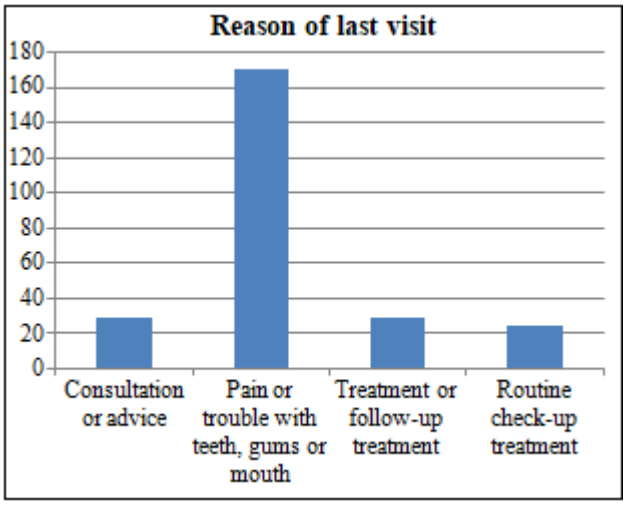
The reason for the last visit of the clients were pain or trouble with teeth, gums or mouth for most of the patient with 68% while dental consultation or advice and treatment or follow-up treatment scored 11.2%. Routine check-up for the patients only had 9.6%.

Table 5: Patients' last visit in the dentist and reason of last visit

Last visit in the Dentist	Frequency	Percentage
Less than 6 months	23	9.2
6-12 months	88	35.2
More than 1 year but less than 5 years	115	46.0
2 years or more but less than 5 years	24	9.6
Reason of last visit		
Consultation or advice	28	11.2
Pain or trouble with teeth, gums or mouth	170	68
Treatment or follow-up treatment	28	11.2
Routine check-up treatment	24	9.6



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The clients fairly often experienced of difficulty in biting and chewing foods in the last 12 months. Difficulty with speech or trouble in pronouncing words were rarely experienced by the patient with 1.66 average weighted mean. Dry mouth, feeling of tension and sleep interruption due to appearance and problems with teeth were fairly often experienced by the patients.

Feeling of embarrassment, preventing to smile and decrease participation in social activities due to appearance of the teeth were occasionally experienced by the patients.The overall mean for problems experienced by the patients for the last 12 months was 2.43 with corresponding value of "Sometimes".

Table 6: Experienced problems during the past 12 months

Indicator	Average Weighted Mean	Descriptive Equivalent
A. Difficulty in biting foods	2.85	Fairly often
B. Difficulty chewing foods	2.70	Fairly often
C. Difficulty with speech or trouble pronouncing words	1.66	No
D. Dry mouth	2.71	Fairly often
E. Felt embarrassed due to appearance of teeth	1.98	Sometimes
F. Felt tense because of problems with teeth or mouth	3.06	Fairly often
G. Have avoided smiling because of teeth	2.27	Sometimes
H. Had sleep that is often interrupted	2.52	Fairly often
I. Have reduced participation in social activities	2.14	Sometimes
Overall Mean	**2.43**	**Sometimes**

Most of the participants consumed fresh fruits every day with 63.6% while 28.4% have it on several times a week. Foods like biscuits, cakes, cream cakes, sweet pies, buns, jams, honey, sweets and candy were only eaten by the patients multiple times a week with 60.4%, 56.4%, 61.6% and 56.4%, respectively. More than half of the patients consumed chewing gum containing sugar several times a month with 55.2%. Drinks like lemonade and soft drinks were consumed by most of the participants every day with 56.4%. Unexpectedly, all of the 250 subject of the study drink tea and coffee with sugar.

Table 7: Type of food and drink consumption

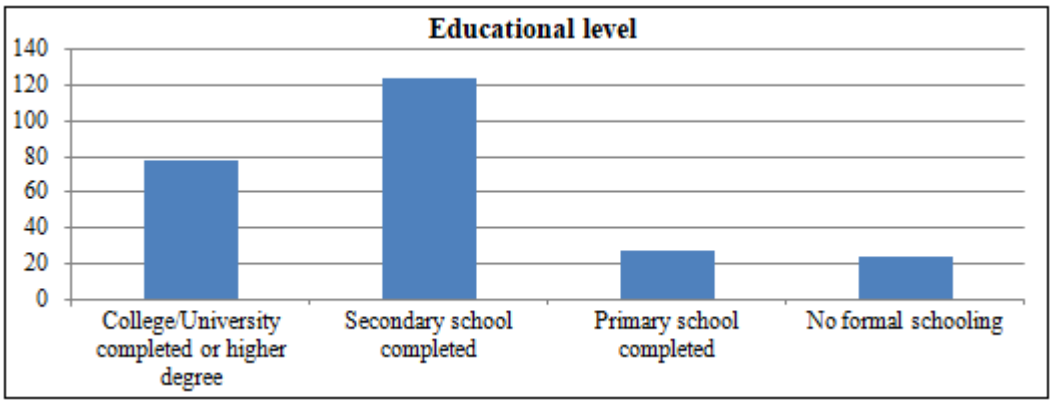
	Everyday	Several times a week	Several Times a month	Never
Fresh fruit	159 (63.6%)	71 (28.4%)	20 (8%)	0
Biscuit, cakes, cream cakes	59 (23.6%)	151 (60.4%)	40 (16%)	0
Sweet pies, buns	84 (33.6%)	141 (56.4%)	25 (10%)	0
Jam or honey	71 (28.4%)	154 (61.6%)	25 (10%)	0
Chewing gum containing sugar	20 (8%)	92 (36.8%)	138 (55.2%)	0
Sweets/ candy	45 (18%)	141 (56.4%)	64 (25.6%)	0
Lemonade, Coca Cola or other soft drinks	141 (56.4%)	109 (43.6%)	0	0
Tea with sugar	250 (100%)	0	0	0
Coffee with sugar	250 (100%)	0	0	0

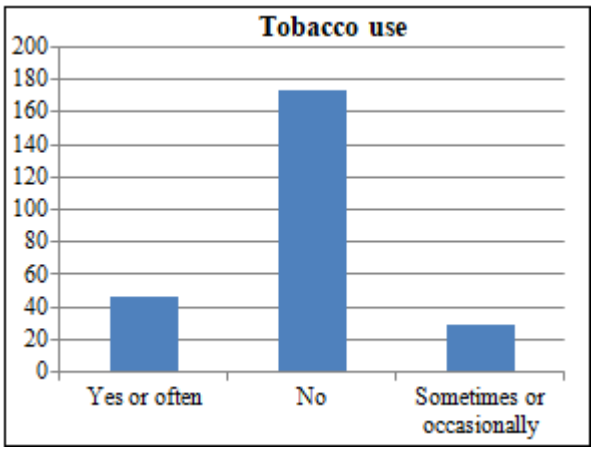
There were 69.2% who do not smoke tobacco among the participants of the study. Only 18.8% and 12% who smoke and occasionally smoke tobacco, respectively. Almost half of the patients completed secondary school with 49.2%. Patients with college and post graduate degree were 30.8%. Patients who finished primary schooling and no formal schooling were 10.8% and 9.2%, respectively.

Table 8: Tobacco use and patients' educational level

Tobacco use	Frequency	Percentage
Yes or often	47	18.8
No	173	69.2
Sometimes or occasionally	30	12.0
Educational level		
College/University completed or higher degree	77	30.8
Secondary school completed	123	49.2
Primary school completed	27	10.8
No formal schooling	23	9.2

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By using the T-test and ANOVA, it concluded that there are no significant differences on perceived oral health status of patients across their gender and location. Regardless of whether they are male or female, or living in urban, periurban or rural area, the respondents gave similar perceptions about their oral health status. In addition to, computing the p-value of 0.05, there is no significant association between sex and pain discomfort of the participants of the study. Moreover, there were no significant associations between and among sex, location educational level and last visit of the patients to the dental clinics.

4. Discussion

Dental health across the lifespan is vital to prevent inflating rate of oral diseases. In the United States, almost one-third of all adults have untreated dental cavities. There is one (1) out of seven adults with gum disease between age 35 to 44 years old and it increases to one in every four adults as the person reach 65 years and older[4] Similar in the study, most of the patients who visited the dental clinic are aged 19 to 40 years old.

The result implies that majority of the respondents had at least maintained 20 teeth and more. It is an expected result since the study mostly covered young adult participants, who should have at least 32 natural teeth by the age of 13 years [10]. It also supports what has WHO cited that most loss of natural teeth occurs in 30% of older age adult aging 65 to 74 years [15].

The participants of the study suffered oral pain and discomfort during the past 12 months. This corresponds to the statistics that nearly 100% of adult patients experiences pain and discomfort due to presence if dental cavities[15]. It is also common that after the age of 35 and as a person gets older, periondontal diseases begin to develop. The increase of harmful bacteria in the mouth results to the formation of plaque and tartar that subsequently causes discomfort in the teeth and gums. This may cause infection and appear swelled, red and warm [14].Moreover, there are almost quarter of all adults have suffered some facial pain in the past six months [4]. Older adults are more susceptible to oral cancers especially those over 55 years old who are heavy drinkers and smokers.

The presence of the false teeth is not common among the participants of the study. Dentures serve as replacement for missing teeth removed due to tooth and gum problems [2].

As previously discussed, loss of teeth occurs in aging adults and more likely they are the ones who opted to have removable appliances.

The “average” or “poor” description of most study sample regarding the status of their teeth is reflective of the result of [5] wherein, the perception was common among women, less educated, tobacco users and patients diagnosed with diabetes. [14] study also found a percentage of self-rated fair or poor oral health status in their UK study coverage.

The findings indicates that majority of the samples clean their teeth less than the recommended frequency of brushing Teeth should be cleaned at least twice a day, with the second brushing done before bedtime [13].

The result indicates that in most cases, people still use toothbrush which is the most common, easier, accessible and cheaper method of cleaning the teeth. Compared to few who used the chewstick, the traditional method of using chewstick is longer to perform and if it is not use in the proper way, it can lead to damage in the gums [6].According to the study of [9], majority of their participants used toothbrush with 72% while only 3% used miswak to clean their teeth.

It shows that the respondents are not mindful of the type of toothpaste they use. In review of the study of [11] they found that although there was a positive behavior towards tooth brushing, the respondents displayed limited knowledge

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on the use and effect of toothpaste in their oral health. In the same manner, knowledge on about fluoride was low among parents who joined in the study of [1]in Saudi Arabia.

The percentage of the respondents who had oral check-up within a year was lower compared to those who visited the dentist more than a year. It indicated that the visit was less often than necessary. In light with the study of [8], attendance to dental visits was higher if the patients had problems with their oral health especially those that were related to their teeth. In similar scene, one of the factors that more of Australian adults go for dental visits in the investigation of [3]was if there is only dental treatment was necessary.

It shows that participants of the study consumed foods and drinks that are high in sugar. It is notable that all of the participants were drink coffee and tea with sugar every day. Cakes, candies and other type of sweet food were consumed by the patients several times a week. Hence, these foods contribute to the development of dental problems and contained little nutritional value

The outcome of the study coincides with the result of the study of [12]that found that there were a lower percentage of male and female Saudis who were smoking tobaccos as compared to other Middle-eastern and developed countries.

5. Conclusion

The dental health level of adult Saudi patient in BuraydaQassim is average and needs to be improved. Intensive oral health teaching like seminars and outreach program should be conducted to prevent complications regarding their conditions. Pursuance of further studies regarding reducing or total eliminating of oral health problems among adult Saudi patients is highly recommended.

6. Acknowledgement

The authors wish to thank (ALL OF PARTICPANT), who providedteir time for include in the study .

Appendix A. Modified Oral Health Questionnaire for Adults.

1. Sex: Male___ Female___ Location: Urban___ Periurban___ Rural___

2. How old are you today?_____

3. How many natural teeth do you have?
a. No natural teeth
b. 1-9 teeth
c. 10-19 teeth
d. 20 teeth or more

4. During the past 12 months, did your teeth or mouth cause any pain or discomfort?
a. Yes b. No c. Do not know

5. Do you have any removable dentures?
a. Yes
b. No

6. How would you describe the state of your teeth and gums? Is it "excellent", "very good", "good", "average", "poor" or "very poor"?
a. Excellent_____
b. Very good____
c. Good ____
d. Average____
e. Poor____
f. Very poor____

7. How often do you clean your teeth?
a. Once a day
b. 2 or more times a day
c. Every other day
d. Once a week

8. Which of the following you use to clean your teeth?
a. Toothbrush
b. Miswak or Chewstick
c. Thread or dental floss
d. Others

9. Which of the following do you use?
a. Toothpase
b. Toothpaste with fluoride
c. Any type of toothpaste

10. How long is it since you last saw a dentist?
a. Less than 6 months
b. 6-12 months
c. More than 1 year but less than 5 years
d. Above 5 years

11. What was the reason of your lasts visit to the dentist?
a. Consultation advise
b. Pain or trouble with teeth, gums or mouth
c. Treatment or follow-up treatment
d. Routine check-up treatment

12. Because of the state of your teeth or mouth, how often have you experienced any of the following problems during the past 12 months?
1. No 2.Sometimes 3. Fairly often 4.Very often
a. Difficulty in biting foods____
b. Difficulty chewing foods____
c. Difficulty with speech or trouble pronouncing words____
d. Dry mouth____
e. Felt embarrassed due to appearance of teeth____
f. Felt tense because of problems with teeth or mouth____
g. Have avoided smiling because of teeth____
h. Had sleep that is often interrupted____
i. Have reduced participation in social activities____

13. How often do you eat or drink any of the following foods, even in small quantities?
1.Everyday 2.Several times a week
3.Several times a month 4.Never
a. Fresh fruits____
b. Biscuit, cakes, cream cakes____
c. Sweet pies, buns____

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d. Jam or honey____
e. Chewing gum containing sugar____
f. Sweets or candy____
g. Lemonade, Coca Cola or other soft drinks____
h. Tea with sugar____
i. Coffee with sugar____

14. Do you smoke tobacco?
a. Yes b. No c. Sometimes (Occasionally)

15. What level of education have you completed?
a. College/ University completed and higher degree
b. Secondary school completed
c. Primary school completed
d. No formal schooling

Date of the Interview: _____
Interviewer: _____

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