



Experience of Dental Caries of Adult Patients in Relation To The Characteristic of Dental Visit and Brushing Behavior In Tikrit City

Dr.Huda Abbas Abdullallah, B.D.S. M.Sc.*

Abstract

Aim: Dental decay is a process in which the hard mineral structure of teeth is dissolved. The process produces a cavity on the crown of the tooth or a softening of the root surface. Without regular dental care people are often unaware of the condition, whereas those who usually seek dental care for a check-up are more likely to have dental decay treated in a timely manner. The aim of the present study was to determine the caries experience of public dental patients by age, sex with the type of dental visit and brushing behavior in adults in Tikrit city, Iraq.

Subjects and methods: A sample of 1284 individuals (580 males and 704 females) with an age range of (18-60 years) attending the teaching dental hospital of collage of dentistry of Tikrit university and the specialized dental center, were examined according to WHO guidelines using DMFT index. Questionnaires were used to assess the level of dental health attitude among the individuals.

Results: The distribution of patients was high at younger age for both sexes. Emergency visit had a higher percentage of patients (82.2%). 63.6% of the patients brush their teeth two or more. The mean DMFT scores were 7.5 (8.3 for female and 6.7 for male). Mean DMFT for both sex increases with age. The percentage of decayed teeth (D/DMFT%) was the highest among younger age group (60.7% for female and 63.1% for male). There was statistically a highly significant difference between age, sex, dental visit type and brushing behavior and DMFT. Emergency patient did show higher level of decayed and missing teeth while general patient did show higher level of filled teeth. Emergency dental visit had higher percentage of decayed teeth (57.3%) than general dental visit (42.5%). One or less brushing patient had higher level of decayed and missing teeth, while two or more brushing patient show higher level of filled teeth. The percentage of decayed teeth for one or less brushing patients was (62.9%) higher than two or more brushing patients (50.1%).

Conclusion: It was concluded that the present study findings for DMFT scores was higher than the global standers according to the world health organization (WHO). Therefore, there is a great need to combine restorative-oriented dental services with preventive-oriented dental services in order to improve the oral health status of this population.

Key words: caries experience, DMFT, dental visit type, brushing behavior, adults.

* Lecturer /collage of dentistry/ Tikrit University

Introduction

Dental decay is a process in which the hard mineral structure of teeth is dissolved by acids produced by bacteria. The process produces a cavity on the crown of the tooth or a softening of the root surface. In its early stages the damage can be reversed with the use of fluoride. Once a cavity has formed a filling is needed to restore the form and function of the tooth. If decay is left untreated pain and infection may occur.⁽¹⁾

Dental caries is the primary cause of irreversible pulpitis and subsequent root canal treatment; therefore it is of prime interest for the endodontist.⁽²⁾

Dental caries is the most prevalent oral disease with high morbidity potential. There is no geographic area in the world whose inhabitant does not exhibit some evidence of dental caries. It affects both sexes and all age groups.

62%-90% adults in developed and developing countries, 62% adults in Bagdad⁽³⁾ and 41.2% in Basra⁽⁴⁾ and 89.2% in AL-Ahsa, Saudi Arabia⁽⁵⁾ and 63.4% in India⁽⁶⁾ are affected with the Dental Caries.

In Saudi Arabia a survey result showed high frequency of caries among females of 15- 60 years of age DMFT score 11. 59 (sd :4.25) attending a dental hygiene clinic in Riyadh⁽⁷⁾. Survey conducted in Turkey showed that strength of caries increased with the increase in age by having high DMFT scores⁽⁸⁾.

Coronal decay may be asymptomatic in its early stages. Without regular dental care people are often unaware of the condition, whereas those who usually seek dental care for a check-up are more likely to have dental decay treated in a timely manner. Dental decay can occur on any tooth surface and it is a health issue for all age groups.

However, today many people are caries free and there has been a 40-60% reduction in the incidence of tooth decay around the Western World that is due to:

- increase in exposure to fluoride in water, tooth paste and mouth washes.
- increase in awareness of population with regular visits to the dentists.
- improved level of oral health care.⁽⁹⁾

Tooth brushing is a simple and efficient way of keeping the teeth clean, and although effective anti – bacterial mouth rinses are becoming available, the tooth brush is likely to be around for long time yet. Studies have shown that people who brush their teeth twice a day or more have cleaner mouths than those who brush only once a day or less.⁽¹⁰⁾

The aim of this study was to determine:

1. The caries experience of public dental patients by age, sex.
2. Mean DMFT and the percentage of decayed teeth in this population according to the type of dental visit and brushing behavior in Tikrit city.

Subjects and methods

1/ Subjects

This study was carried out in Tikrit city. Patients involved in this study were 1284 individuals. Who were attending the teaching dental hospital of collage of dentistry of Tikrit University and the specialized dental center from 1/10/ 2009 to 1/10/2010. Who were examined on dental chair by well-trained examiners. Caries prevalence was presented through DMFT index and its component: D (the number of decayed), M (the

number of missing), F (the number of filled) teeth that calculated according WHO criteria ⁽¹¹⁾. The questionnaire designed and included the following information: age, sex, type of dental visit either Emergency(when feel pain) or General visit (for checkup), and the brushing behavior either two or more (brush twice daily or more) or one or less (brush once daily or less) .

2/ statistical analysis

The data analyzed by computerized system (Minitab program version 11). Analysis of data included calibration of mean DMFT and its percentage. The data were analyzed statistically by Fisher test (ANOVA) with $P \leq 0.01$. Comparison between means analyzed according to Duncan's Multiple Range with $P \text{ value} \leq 0.05$.

Results

Table 1 show the distribution of patient according to sex, type of dental visit and brushing behavior by age group. The highest percentage of distribution at young age (18-24 y) and lowest percentage at old age group(45-60 y) for both male and female.

Emergency type of dental visit was higher (82.2%) than general visit (17.4%) for all age group and it was the highest at young age (34.9 %).

The distribution of two or more brushing patients was higher (63.6%) than one or less one (36%). It is the highest at young age (30.7%) and lowest at old age (6.5%).

Figure 1 show the mean DMFT for female by age group. The mean DMFT for female patient was 8.3 and it increase with age (6 at 18-24 years and 10.7 at 45-60 years). Decayed teeth represent the most component of DMFT for all age group.

The mean DMFT for male patient was 6.7 as shown in Figure 2. Like in female patient mean DMFT increase

with age and decayed teeth represents the most component of DMFT.

Figure 3 showed the comparison between caries experience for female and male by age group. The mean DMFT for this population was 7.5 and it was higher in female than male in each age group.

Percent of decayed teeth shown in figure 4 for both male and female by age was high. The percentage of decayed teeth for male was higher than that for female for all age group. The percentage of decayed teeth show a notice decrease across age group with the highest level at young age (63.1%, 60.7% for male and female respectively) and lowest level at old age (45% , 37.9 % for male and female respectively).

There is highly significant differences ($p \leq 0.01$) between mean DMFT for emergency dental visit and general visit (7.7, 6.9 respectively) as represented in figure 5. Decayed and missing teeth were higher in emergency dental visit while filled teeth were higher in general type for all age group. For both type of dental visit DMFT accumulate across age.

Emergency dental visit had higher percentage of decayed teeth (57.3 %) than that of general (42.5) for all age group as shown in figure 6. For both type of dental visit the percentage of decayed teeth was the highest at young age and the lowest for old age.

Figure 7 show that there was a highly significant differences ($p \leq 0.01$) between two or more and one or less brushing patients in DMFT (6.5, 9.1 respectively) for all age group. Decayed and missing teeth were higher in each age group among one or less compared with two or more brushing patients, while filled teeth were higher in two or more brushing patients within each age group.

One or less brushing patients had higher percentages of decayed teeth (62.9 %) than two or more brushing patients (50.1 %) for all age group (figure 8). Both of them showed the higher percentages of decayed teeth among younger age group and the percentages decrease until it became the lowest among old age group.

Discussion

The present study investigates the intensity of dental caries by age, sex and dental visit type in Tikrit city. The young age group was reported higher percentage than older ages. This may be due to the fact that most of the data were collected in teaching dental hospital and most of the patients of who attended this hospital were students of collages in Tikrit University.

The results revealed high caries experience (DMFT=7.5) it is difficult to conclude whether have been improvements in adult dental health or not because there are no previous study for comparison. However, we compared to similar studies in other governorate and to other countries.

In Mosul city, Iraq, Gagoos SS and Kharmrco⁽¹²⁾ found DMFT of adult population age (10-60) was 5.16, which is lower than our finding. While in Al-Ahsa, Saudi Arabia Al-Gannam et al⁽⁵⁾ found the caries prevalence and severity in adults patients attending Al-Ahsa dental center was very high (DMFT =13.24).

Where in adult Australian population LG DO and KF Robert-Thomson⁽¹³⁾ found DMFT 12.8. Lacerda et al⁽¹⁴⁾ found the DMFT for Brazilian adult population was 20.2.

In this study the mean DMFT for age group (18-24) years was 5.8 for male and 6 for female which coincide with the result of Akarslan et al⁽¹⁵⁾ in

Turkey and Peres et al⁽¹⁶⁾ found DMFT 5.7 at 18 years old male in Brazil. And it is lower than what found in Taiwan⁽¹⁷⁾ and Hungary⁽²⁸⁾.

Results of this study have shown that dental caries represented by mean DMFT was increased with increasing age for both sexes. This may be attributed to the irreversible and accumulative nature of the disease. This is in accordance with the result of many researches^{(12), (18), and (19)}. It might be suggested that, the development of dental caries is a long term process, and the habit of sugar consumption is relatively high among adolescents, but the people usually don't attend dentist until and unless they feel unbearable pain in the mouth. So we have found that mean DMFT values increase with age.

The percentage of decayed teeth was high among this population. Similar situation was found in several studies^{(3)and (20)}. This could be attributed to the nature of the sample, which consists of patients attending a teaching dental hospital and specialized dental center also reflects poor dental care services and lack of dental health education. But in China,⁽²¹⁾ and Brazil,⁽¹⁴⁾ missing teeth was the major component of DMFT score.

The percentage of decayed teeth is highest among younger patients and lowest among older patients, this coincide with result of AIHW⁽¹⁹⁾, and Gagoos SS and Kharmrco⁽¹²⁾. this could be due to the consumption of soft drink by young adults is high which have a high concentration of sugar and high acidity and may be due to many young adults are involved in a variety of sporting activities and they less aware about oral health and regular check-up, Or due to dental anxiety which is one of several factors related to whether or not people attend dental care⁽²²⁾.

Thomson et al found an increase in dental anxiety from 15-26 years of age⁽²³⁾. A longitudinal study of women in Sweden found dental anxiety decline from middle into older ages.⁽²⁴⁾

There was high difference in caries experience by sex of patient and this match several works^{(15), (17), (19)}. Decayed teeth were higher among female because women's dental eruption begins six months earlier than males, so they are exposed to cariogenic factors beforehand. Women present with more treated surface than male because they are in general more interested in their personal appearance.

There was high difference in caries experience between emergency (DMFT=7.7) and general patients (DMFT=6.9). This result agree with the result of Motlagh et al⁽²⁵⁾ who found that there was a significant association between DMFT and dental visit also agree with Clarkson and Worthington⁽²⁶⁾ that found both coronal and root caries were associated with attendance, with irregular attenders experiencing more. LG DO and KF Robert-Thomson⁽¹³⁾ found DMFT 12.2 for checkup dental visit and 13.7 for a problem visit.

But disagree with the result of AIHW⁽¹⁹⁾ who found little differences. Emergency patients did show consistently higher levels of decayed and missing teeth than general patients in each age group, because they seek for dental treatment only when they feel pain at the late stage of dental caries so the treatment either endodontic therapy or extraction. While general patients showed higher level of filled teeth than emergency patients in each age group. Because they visit the dentist to carry preventive procedure and regular checkup so the treatment of caries in its initial stage with simple restoration. this in accordance with the result of

Thomson et al⁽²⁷⁾ who found that routine attenders have better self-reported oral health and less tooth loss and dental caries

There was a highly differences between two or more and one or less brushing patients in DMFT, this agree with several studies⁽¹²⁾

But disagree with Abdullah HA⁽¹⁸⁾ who found that the prevalence of dental caries was not related to teeth brushing habits. Oral hygiene is the practice of keeping the mouth healthy and clean by brushing and flossing to prevent tooth decay and gum disease. The purpose of oral hygiene is to prevent the buildup of plaque, the sticky film of bacteria and food remains that form on the teeth and dorsum of the tongue. Plaque adheres to the crevices and fissures of the teeth and generates acids that, when not removed on a regular basis, slowly eat away, or decay, the protective enamel surface of the teeth, causing cavities to form.

Regular dental visits are important to promote good oral health. Routine visits for dental check-ups are not common practice in Tikrit; many people go to the dentist only when they feel pain or have a dental problem.

Good oral health is an essential part of good general health and well-being throughout life. Good oral health status can be achieved, promoted and maintained by receiving appropriate professional dental care, as well as by practicing proper self-care and participating in community-based preventive dental programs. Professional dental care, received on a regular basis, can provide an opportunity for prevention

People who seek regular preventive dental care have better oral health than those who do not receive regular care or who seek care only when needed.

This study highlight the extent of dental disease in this community which reflects the high treatment needs that cannot meet by traditional ways. Reduction of high caries levels can only be achieved by preventive and oral hygiene promotion program; therefore, there is a great need to combine restorative-oriented dental services with preventive- oriented dental services in order to improve the oral health status of this population.

Conclusion

- The DMFT for this population was 7.5 .
- Caries experience accumulated across age
- The percentage of decayed teeth was highest among younger patients and lowest among older patients.
- There was difference in caries experience by sex of patient (DMFT=6.7 for males and 8.3 for females).
- There was a significant difference in caries experience between emergency (DMFT=7.7) and general patients (DMFT=6.9).
- There was a highly significant difference in caries experience between one or less brushing patients (DMFT=9.1) and two or more brushing patients (DMFT=6.5).

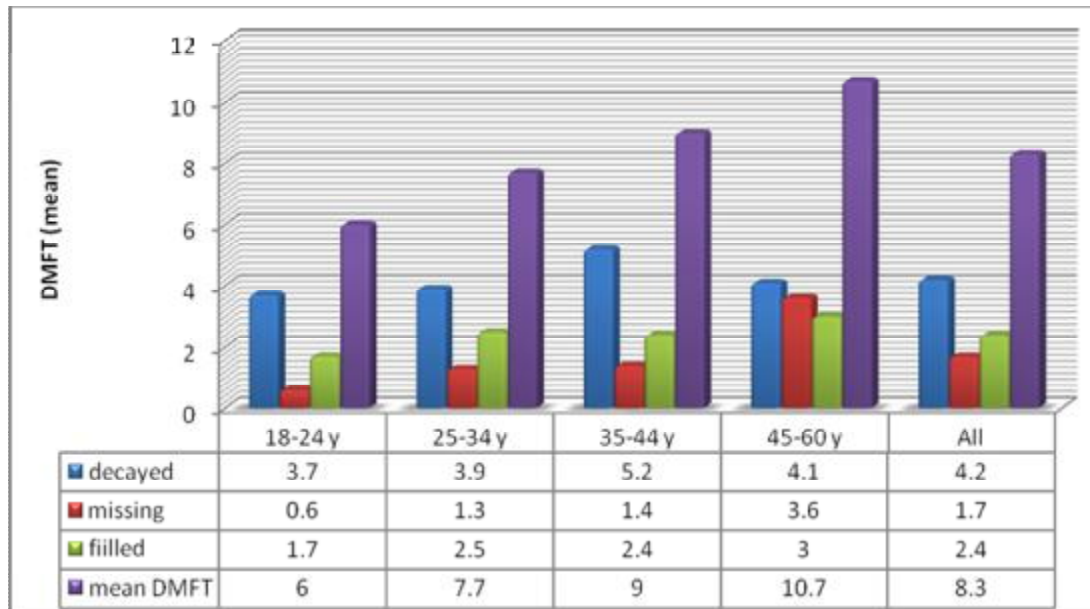
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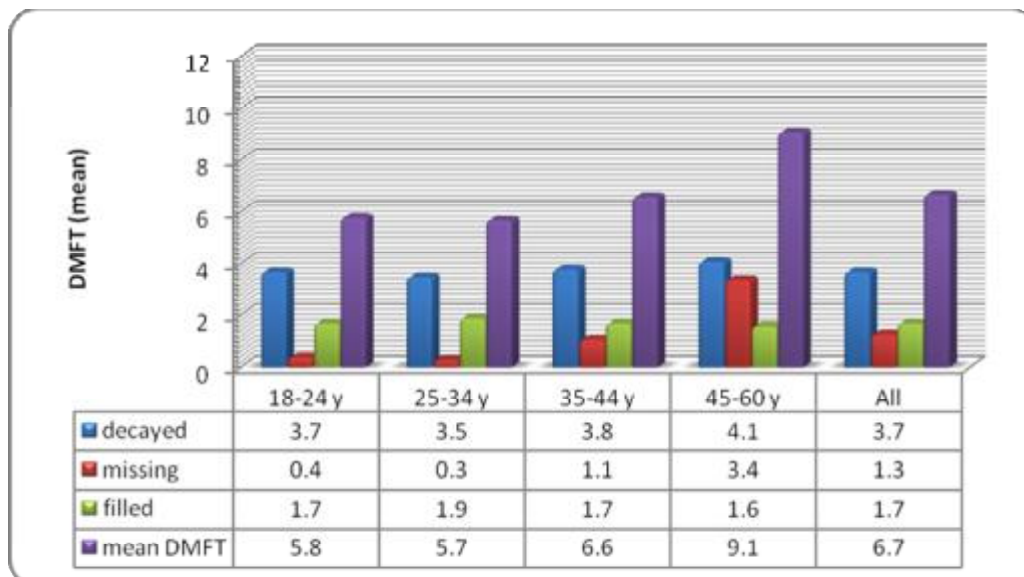
Table 1: Distribution of patients according to sex, visit type and brushing behavior by age

One or less	Two or more	General	Emergency	Female	Male	
13.3	30.7	9.1	34.9	43.4	45	
9.9	17.1	4.6	22.3	25.5	28.8	
5.4	9.3	1.5	13.2	15.6	13.7	
7.4	6.5	2.2	11.8	15.3	12.3	
36.0	63.6	17.4	82.2			



F value= 23.29 P ≤ 0.01

Fig.1 : Caries experience (DMFT) among Female patients by age



F=28.47 P ≤ 0.01

Fig.2 : Caries experience (DMFT) among male patients by age

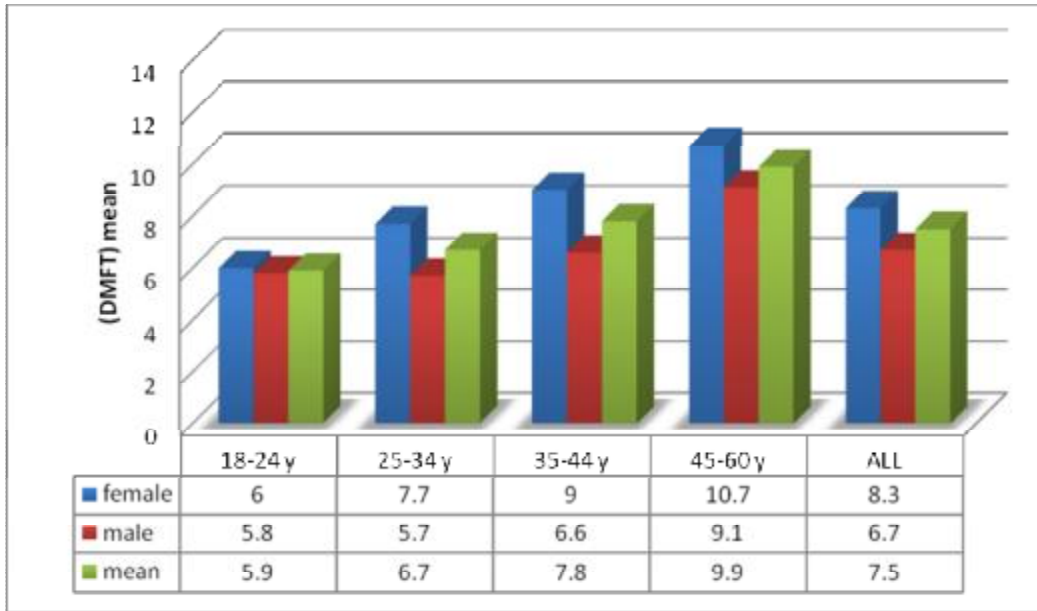


Fig.3: Caries experience (DMFT) for female and male by age

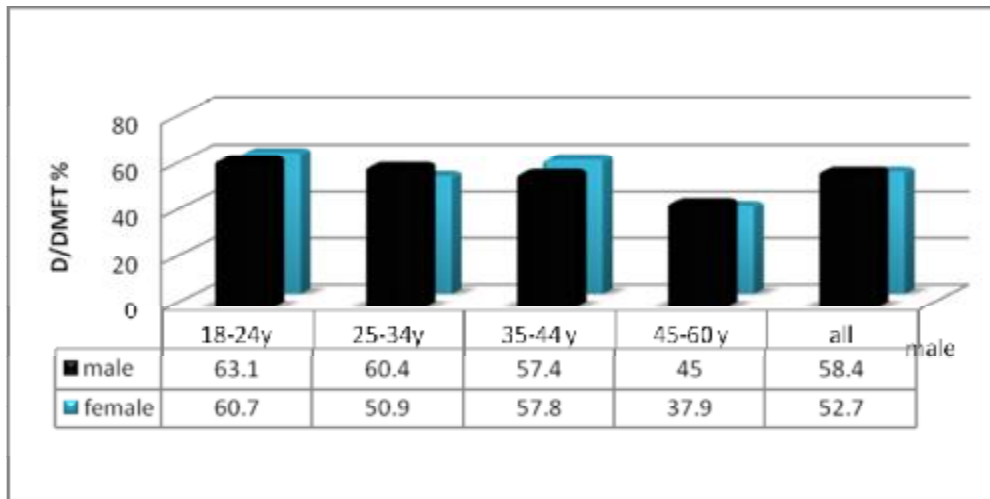
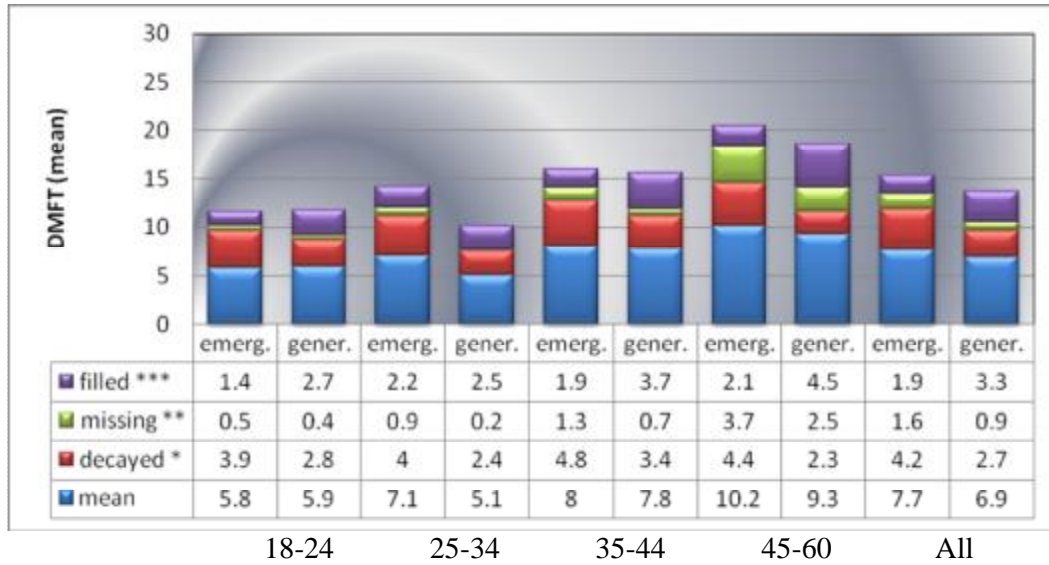


Figure 4: Percent decayed teeth (D/DMFT) among public patients by age and sex



*** F=4.85 ** F=21.21 * F=5.24
 P ≤ 0.01 highly significant

Figure 5 : Caries experience (DMFT) among public patients by age and visit type

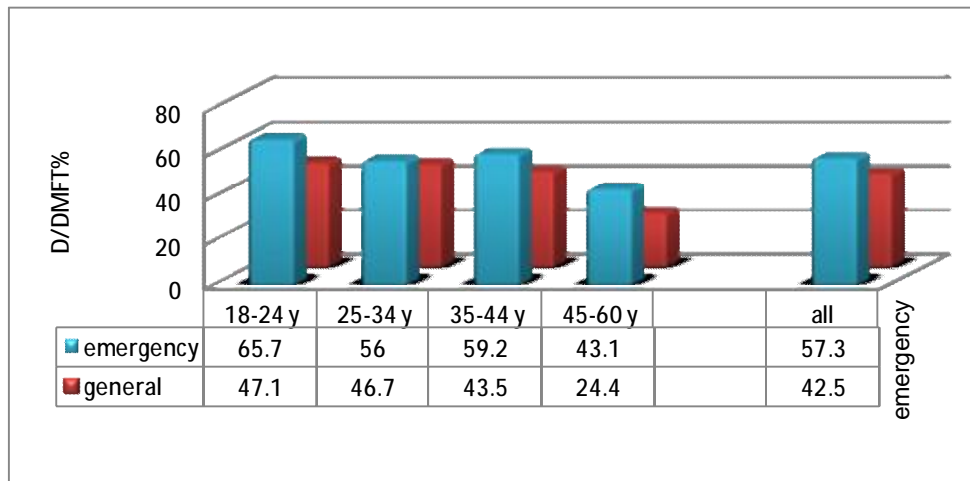


Figure 6: percentage of decayed teeth (D/DMFT) among public patients by age and visit type

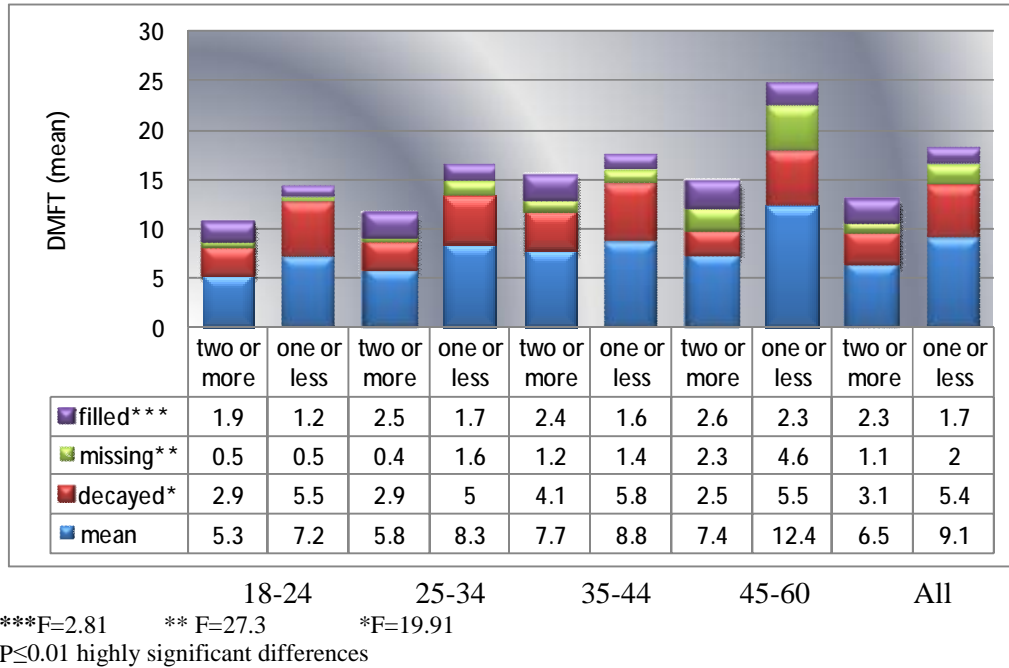


Figure 7 : Caries experience (DMFT) among public patients by age and brushing behavior

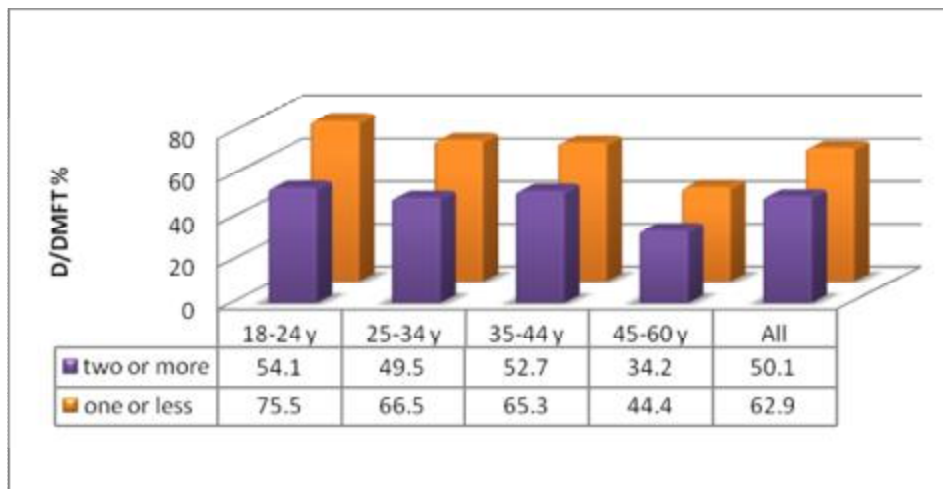


Figure 8: percentage decayed teeth (D/DMFT) among public patients by age and brushing behavior