

Assessment of dentists self –performed plaque control measures in Mosul city

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ABSTRACT

A survey of (146) dentists in Mosul city was involved by questionnaire to evaluate the plaque control measures include brushing & interdental aids, the age range (23-58) years.

The result of this survey revealed that (54%) of the sample brush their teeth once daily, (29%) & (17%) brush their teeth twice & more respectively. Significant difference was found between the frequency of brushing & the gender were female brushes their teeth more frequent than male, (74%) of the dentist select specific tooth paste, Signal & Sanino were the most frequent tooth pastes selected by the dentists.

Also this study showed that (69%) of the dentists were used interdental aids, (51%) used dental floss, (18%) used toothpick, (66%) used it daily, (29%) weekly & (5%) monthly.

Key Words: Dentist, toothbrush, dental floss.

الخلاصة

شملت هذه الدراسة (١٤٦) طبيب أسنان يعملون في مدينة الموصل عن طريق استبيان لتقييم طرق السيطرة على الصفيحة الجرثومية باستعمال فرشاة الأسنان والطرق المساعدة الأخرى، وكان معدل أعمار العينة يتراوح ما بين (٢٣ - ٥٨) سنة.

أظهرت نتائج هذه الدراسة أن (٥٤%) من العينة يستخدمون الفرشاة مرة واحدة يومياً بينما (٢٩%) و (١٧%) ينظفون أسنانهم بالفرشاة مرتين أو أكثر يومياً، بالتعاقب.

وقد أوضحت هذه الدراسة وجود علاقة معنوية بين تكرار تفريش الأسنان والجنس، حيث تبين أن طبيبات الأسنان يفرشن أسنانهن أكثر من زملائهن أطباء الأسنان.

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كما أظهرت نتائج هذه الدراسة بأن (٧٤%) من العينة قد اختاروا معاجين أسنان محددة، وقد وقع معظم اختيارهم على معجوني الأسنان Signal و Sanino. كما تبين أن (٦٩%) من أطباء الأسنان يستخدمون الطرق المساعدة حيث أظهرت هذه الدراسة (٥١%) يستخدمون الخيوط الطبية و(١٨%) يستخدمون العيدان الطبية، كما أن (٦٦%) من العينة يستخدمون هذه الطرق يومياً بينما (٢٩%) يستخدمونها أسبوعياً و ٥% فقط يستخدمون هذه الطرق شهرياً.

INTRODUCTION

It had been documented that the dental plaque accumulation on the teeth surface considered the main etiological factors of periodontal disease⁽¹⁾.

Plaque control refers to procedures that are intended to remove bacterial plaque from teeth. This may be accomplished via professional plaque removal, patient – performed oral hygiene, or chemical plaque control. Plaque control is the most effective means of preventing accumulation of microbial dental deposits there by interfering with the initiation, development, or progression of periodontal disease⁽²⁾.

Toothbrushes with the toothpaste in addition to the interdental aids (dental floss, toothpicks & interdental brushes) considered the most common tools that are used for achieving such purpose⁽³⁾.

The efficiency of teeth cleaning depend on the ability of the subjects to practice-plaque control procedure properly & on the role of the dentists to give ideal instruction & demonstration to the patient with the continuous motivation, who is considered the main director to the subjects in learning & changing their behavior to create skilful' plaque control measures. Such ability of the dentist usually come from their background knowledge & their own-performing such clearing method, as if one have no knowledge will give nothing.

So the aim of this study is to evaluate the oral hygiene practice that performed by a group of dentists in Mosul city.

MATERIALS AND METHODS

This study was performed by questionnaire distributed to (146) dentists working in different parts of Mosul city (either in Mosul dental school or dental health centers); the questionnaire (figure 1) was filled by the dentists themselves.

The data was presented as sites frequency-chi-square test was used to determine the statistical significance of difference at the level of (0.05) among the percentage of variables.

1- Age	sex	marital state		
2- Year of graduation	specialty	Diploma	M.Sc.	Ph.D

1- Do you use the brush for cleaning teeth. Yes or No.
2- The technique used. a. Vertical b. Horizontal c. Circular d. Rolled e. Mixed
3- The frequency once daily twice daily more/day. Once weekly twice weekly or monthly.
4- The suitable time for brushing. Morning after eating evening (bed time).
5- Which kind of tooth paste you prefer
6- Do you believe there is difference in tooth pastes. Yes: in cleaning efficiency, in its chemical component. No
7- Do you use the interdental aids? Yes or No If yes a) Dental floss. b) Tooth picks. c) Interproximal brush. d) Single – tufted brush.
8- The frequency of interdental aids use: once daily twice daily more / day. Once weekly twice weekly or monthly.
9- The suitable time for cleaning Morning, Evening, After eating.
10- This measure used for removal: a- Food debris b- Dental plaque. c- Both
11- Other methods: Miswak, Mouth wash, Others

Figure (1): showed the questionnaire that used in the survey

RESULTS

The (146) dentist were divided into (2) age groups & according to the sex, marital state & level of graduation as shown in table (1). (76.7%) were carry B.D.S graduation, while (23.3%) had post-graduated degree (M.Sc & Ph.D).

Table (1): Sample distribution according to age, sex, marital state & level of graduation

Age	Sex	Marital State		M.Sc. & Ph.D	B.D.S.	Total
		Married	Single			
23-35	Male	10	30	8	32	40
	Female	9	37	5	41	46
	Total	19	67	13	73	86
>36	Male	26	7	11	22	33
	Female	19	8	10	17	27
	Total	45	15	21	39	60
Total		64	82	34	112	146

Non of our sample not perform tooth brushing, so table (2) revealed the frequency of tooth brushing done by the dentist.

The results indicated that the only significant difference was found between tooth brushing frequency & gender, while there are no significant difference among the variable in relation to level of graduation, marital state & age.

Table (2): Sample distribution according to sex, marital state, level of graduation, age & frequency of tooth brushing

		Once	Twice	More	Total
Sex	Male	43 (54%)	13 (30%)	7 (29%)	63
	Female	36 (46%)	30 (70%)	17 (71%)	83
	Total	79 (54%)	43 (29%)	24 (17%)	146
Marital State	Married	38 (48%)	13 (30%)	13 (54%)	64
	Single	41 (52%)	30 (70%)	11 (46%)	82
	Total	79 (54%)	43 (29%)	24 (17%)	146
Graduation	B.D.S	64 (81%)	32 (74%)	16 (66%)	112
	M.Sc	15 (19%)	11 (26%)	8 (34%)	34
	Total	79 (54%)	43 (29%)	32 (17%)	146
Age	20-	40 (51%)	31 (72%)	16 (66%)	87
	30-	39 (49%)	12 (28%)	8 (34%)	59
	Total	79 (54%)	43 (29%)	24 (17%)	146

* $\chi^2=11.5$

d.f=2

 $p < 0.05$ ** $\chi^2=4.86$

d.f=2

 $p > 0.05$ *** $\chi^2=2.30$

d.f=2

 $p > 0.05$ **** $\chi^2=5.92$

d.f=2

 $p > 0.05$

Table (3) showed the distribution of the sample according to the brushing period, non-significant differences were found among the variable in relation to the gender, level of graduation & age.

Regarding the technique of brushing no significant difference were found in relation to sex & degree of graduation as shown in table (4).

Considering the kind of tooth paste used (specific & non specific) non significant difference were found among these variables in relation to gender, level of graduation & age as shown in table (5).

Table (3): Sample distribution according to time of brushing in relation to sex, graduation & age

		Morning	After Eating	Evening	Morning and Evening	Total
Sex*	Male	12(63%)	9(41%)	38(49%)	14(52%)	73
	Female	7(37%)	13(59%)	41(51%)	13(48%)	73
	Total	19(13%)	22(15%)	78(53%)	27(19%)	146
Graduation**	B.D.S	14(73%)	19(86%)	61(78.2%)	18(66%)	112
	M.Sc.	5(27%)	3(14%)	17(21.8%)	9(34%)	34
	Total	19(13%)	22(15%)	78(53%)	27(19%)	146
Age***	20-	14(73%)	17(77%)	42(54%)	14(52%)	87
	30-	5(27%)	5(23%)	36(46%)	13(48%)	59
	total	19(13%)	22(15%)	78(53%)	27(19%)	146

* $\chi^2=2.13$ d.f=3 $p > 0.05$
 ** $\chi^2=2.86$ d.f=3 $p > 0.05$
 *** $\chi^2=6.63$ d.f=3 $p > 0.05$

Table (4): Sample distribution according to brushing technique in relation to sex & graduation

		Mixed	Rolled	Circular	Horizontal	Vertical	Total
Sex*	Male	47(55%)	3(38%)	1(6%)	2(50%)	20(63%)	73
	Female	38(45%)	5(62%)	16(94%)	2(50%)	12(37%)	73
	Total	85(58%)	8(5%)	17(12%)	4 (2%)	32(23%)	146
Grad.**	B.D.S	66(78%)	4(50%)	7(41%)	3 (75%)	13(41%)	112
	M.Sc.	19(22%)	4(50%)	10(59%)	1(25%)	19(59%)	34
	Total	85(58%)	8(5%)	17(12%)	4 (2%)	32(23%)	146

* $\chi^2=2.38$ d.f=4 $p > 0.05$
 ** $\chi^2=3.23$ d.f=4 $p > 0.05$

Table (5): Sample distribution according to toothpaste selection in relation to sex, graduation & age

		Specific	Non Specific	Total
Sex*	Male	51 (47%)	22 (58%)	73
	Female	57 (53%)	16 (42%)	73
	Total	108 (74%)	38 (26%)	146
Graduation**	B.D.S.	84 (78%)	28 (74%)	112
	M.Sc.	24 (22%)	10 (26%)	34
	Total	108 (74%)	38 (26%)	146
Age***	20-	68 (63%)	19 (50%)	87
	30-	40 (37%)	19 (50%)	59
	total	108 (74%)	38 (26%)	146

* $\chi^2=0.89$

d.f=1

$p > 0.05$

** $\chi^2=0.084$

d.f=1

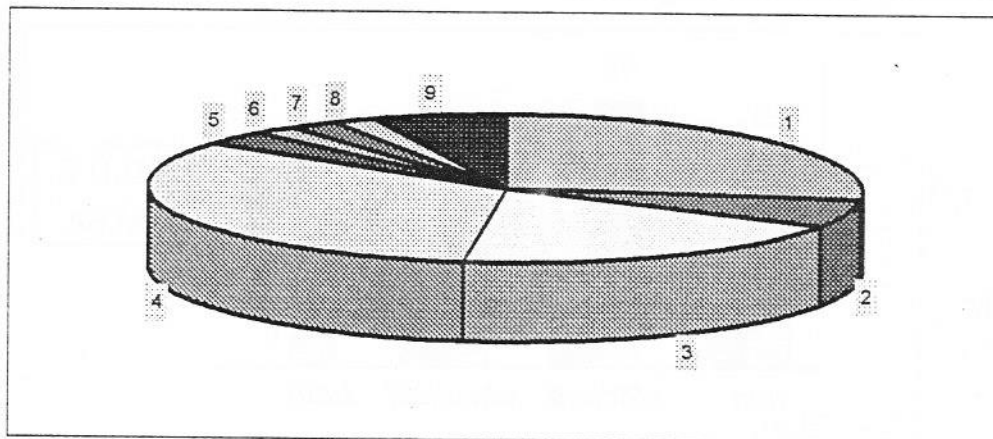
$p > 0.05$

*** $\chi^2=1.46$

d.f=1

$p > 0.05$

Figure (2) showed the frequency distribution of the specific toothpaste.



1. (26%) non specific, 2. (6%) Amber, 3. (19%) Sanino, 4. (32%) Signal, 5. (3%) Diamond, 6. (2%) Fluoride, 7. (2%) Sinan, 8. (2%) Closeup, 9. (6%) China

Figure (2): Showed the different tooth – pastes selection by the dentist

Figure (3) showed the relationship of toothpaste selection (effectiveness & cost) with the level of graduation & marital state, no significant relationship were found ($\chi^2=1.49$, $d.f=3$, $\chi^2=0.02$, $d.f=3$).

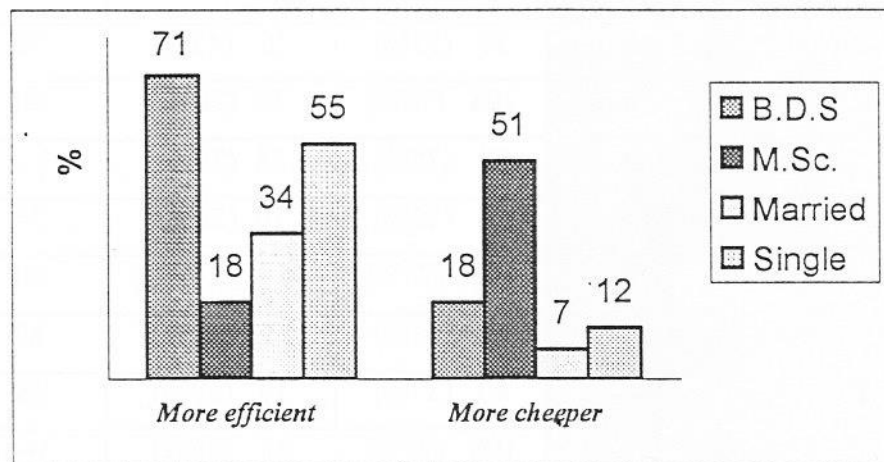


Figure (3): Selection of tooth paste according to their efficiency & price

Figure (4) revealed the selection of toothpaste according to their efficiency & chemical ingredient.

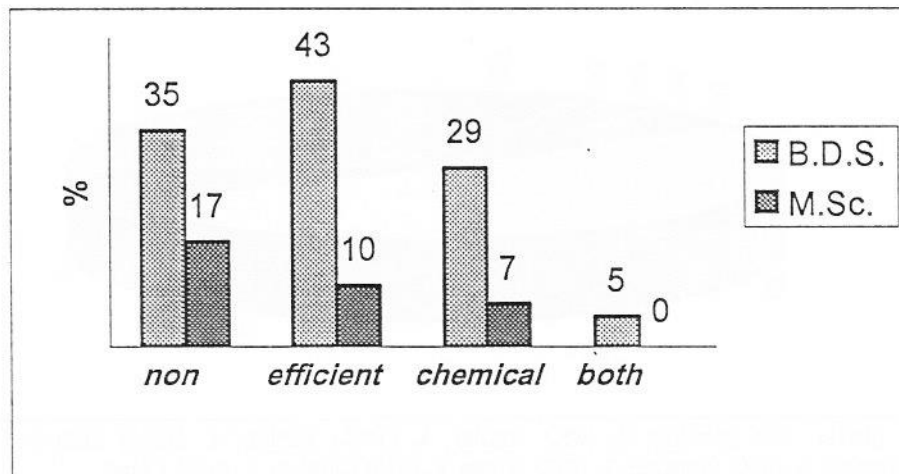


Figure (4): Different toothpaste selection according to graduation

Table (6) showed the distribution of the sample according to the use of the interdental aids were significant difference was found among the variable in relation to degree of graduation & marital state, while non significant difference in relation to gender & year of graduation.

Table (6): Dentists distribution according to use of the interdental aids

		Non	Dental Floss	Tooth Picks	Total
Sex*	Male	26(58%)	36(48%)	11(42%)	73
	Female	19(42%)	39(52%)	15(58%)	73
	Total	45(31%)	75(51%)	26(18%)	146
Marital State**	Married	23(51%)	25(33%)	16(62%)	64
	Single	22(49%)	50(67%)	10(38%)	82
	Total	45(31%)	75(51%)	26(18%)	146
Graduation***	B.D.S	38(84%)	65(87%)	9(35%)	112
	M.Sc	7(16%)	10(13%)	17(65%)	34
	Total	45(31%)	75(51%)	26(18%)	146
Year of Graduation****	1-4	10(22%)	26(34%)	6(23%)	42
	5-9	11(24%)	27(36%)	7(27%)	45
	10-14	12(27%)	11(15%)	7(27%)	30
	15+	12(27%)	11(15%)	6(23%)	29
	Total	45	75	26	146

$$*x^2=0.32$$

$$d.f=2$$

$$p > 0.05$$

$$**x^2=7.637$$

$$d.f=2$$

$$p < 0.05$$

$$***x^2=31.45$$

$$d.f=2$$

$$p < 0.05$$

$$****x^2=8.04$$

$$d.f=6$$

$$p > 0.05$$

Table (7) showed the frequency of the interdental aids used by the dentist, only significant difference was found among, this variable, gender & level of graduation, while non significant difference were found in relation to, marital state, & age.

Table (7): Dentists distribution in relation to frequency of using interdental aids

		Daily	Weekly	Monthly	Total
Sex*	Male	26(39%)	20(69%)	5(100%)	51
	Female	41(61%)	9(31%)	0(0%)	50
	Total	67(66%)	29(29%)	5(5%)	101
Marital State**	Married	28(42%)	11(38%)	2(40%)	41
	Single	39(58%)	18(62%)	3(60%)	60
	Total	67(66%)	29(29%)	5(5%)	101
Graduation***	B.D.S	50(65%)	19(66%)	5(100%)	74
	M.Sc	17(35%)	10(34%)	0(0%)	27
	Total	67(66%)	29(29%)	5(5%)	101
Age****	20-	41(61%)	21(72%)	3(60%)	65
	30-	26(39%)	8(28%)	2(40%)	36
	Total	67(66%)	29(29%)	5(5%)	101

* $\chi^2=9.53$

d.f=2

 $p < 0.05$ ** $\chi^2=0.62$

d.f=2

 $p > 0.05$ *** $\chi^2=6.02$

d.f=2

 $p < 0.05$ **** $\chi^2=0.50$

d.f=2

 $p > 0.05$

Figure (5) revealed the suitable time for cleaning with interdental aids.

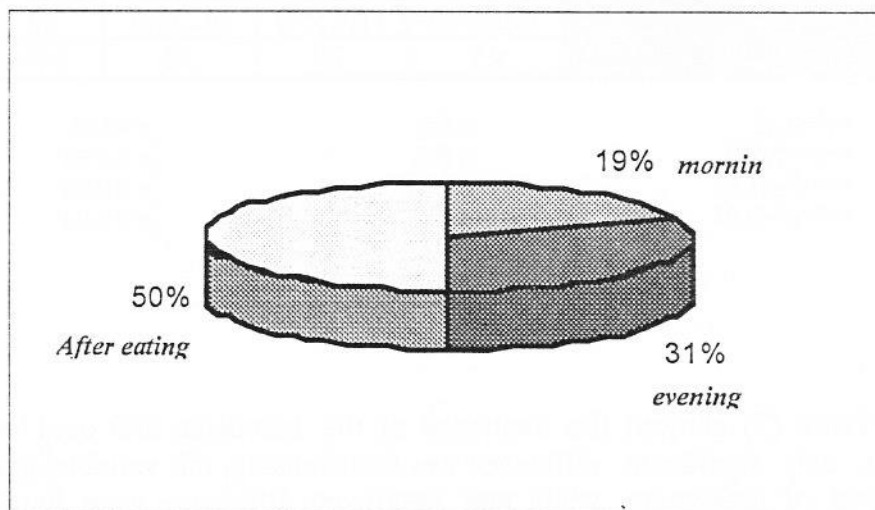
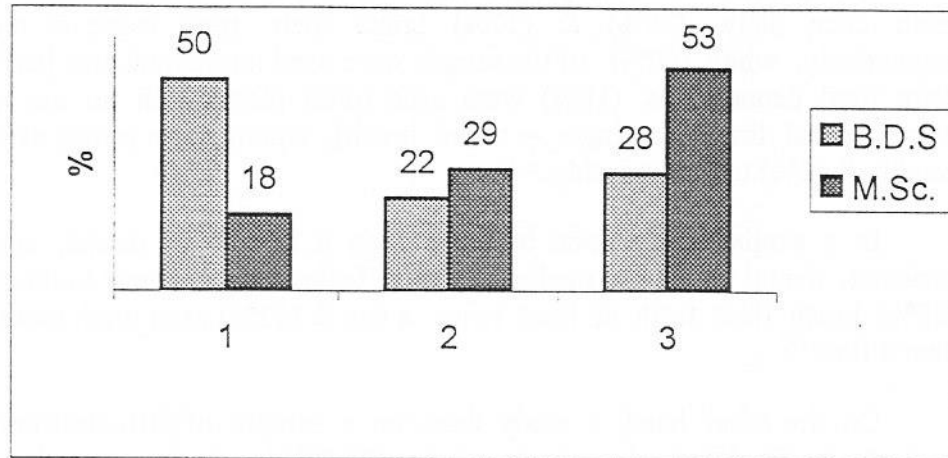


Figure (5): The suitable time of using interdental aids

Figure (6) showed the distribution of the sample regarding the aims of using interdental aids in relation to degree of graduation.



- 1- removing food debris
- 2- removing dental plaque
- 3- both

Figure (6): The aim of using interdental aids

Figure (7) demonstrate the sample distribution according to the use of other methods of teeth cleaning like Miswak, mouthwash.

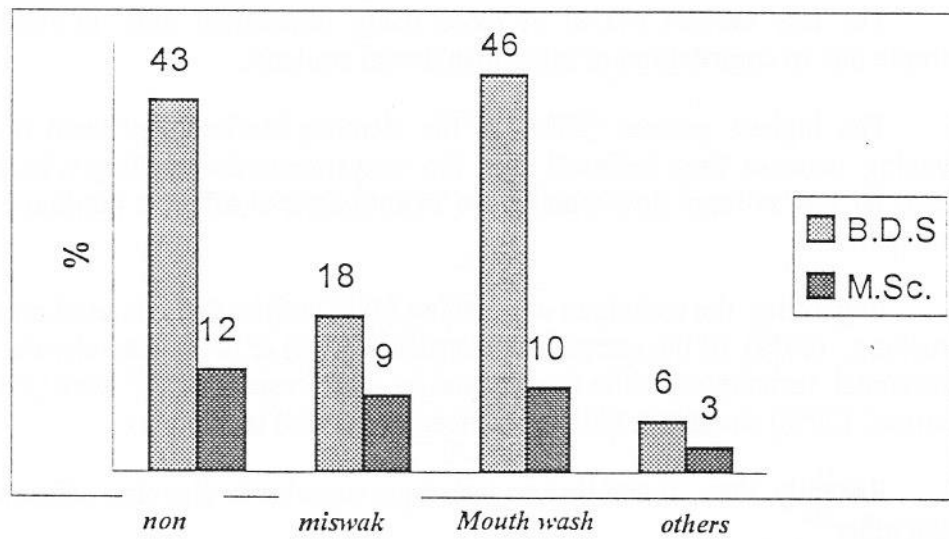


Figure (7): Other methods of teeth cleaning

DISCUSSION

The result of this study revealed that (54%) of the sample brush their teeth once daily, (29%) & (17%) brush their teeth twice & more respectively, while (69%) of the sample were used interdental aids [(51%) were used dental floss, (18%) were used tooth picks. With no one use interproximal brush or single – tufted brush], among them (66%) used it weekly & (5%) used it monthly.

In a similar study done in Finland on a sample of dental, dental assistant, dental hygienist, medical, nurse & technology students found that (85%) brush their teeth at least twice a day & (52%) used tooth picks or dental floss⁽⁴⁾.

On the other hand, a study done on a sample of fifth class dental students in Baghdad university found that (28.8%) brushed their teeth once daily, (60.8%) & (10.3%) brushed their teeth twice daily & more respectively, while (54.6%) of the sample used dental floss & (31.0%) used tooth picks⁽⁵⁾.

In comparison highest percent of those brushing their teeth was found in Finland sample & this may attributed to the concentrated preventive program in Scandinavian countries.

The low percent (52%) of those using interdental aids in Finland sample due to contribution of other than dental students.

The highest percent (53%) of the dentists brushed their teeth at the evening because they believed that the best time to do brushing is before sleep as the salivary flow which have an antibacterial effect is minimum at that period.

Regarding the technique of brushing (58%) of the dentists used mixed brushing, (23%) of the sample used vertical, (12%) & (2%) used circular & horizontal techniques, while those found by other researchers⁽⁵⁾ were (57%) vertical, (20%) circular & (22%) practiced horizontal techniques.

Recently they found that no technique superior in cleaning efficiency than other⁽⁶⁾.

Concerning the toothpaste, (74%) of the sample preferred specific type, among them Signal & Sanino were the most preferred toothpastes. In the study done in Iraq, Sanino toothpastes were found to be the highest fluoride content than others (1000 ppm)⁽⁷⁾.

Figures (3) & (4) showed that the general practitioner select the specific tooth paste as more efficient in cleaning & containing chemical ingredient, while the specialist choosing any tooth paste which is more cheaper as they believed that any tooth paste aid in mechanical removal of dental plaque.

Regarding the interdental aids (33.9%) of general practitioner not used interdental aids in comparison to (20.5%) of the specialists.

The interdental aids non user was found to be (35.9%) of the married dentist in comparison to (26.8%) of the single & this attributed to the fact that the single spend more time to take care with themselves.

Eighty two per cent of the female dentist used interdental aids daily in comparison to (50.9%) male dentist as the female in general concerning with their oral hygiene for esthetic consideration.

The general practitioners believed that the interdental aids used mostly for removing food debris other than for removal dental plaque.

Other than ordinary method, (26.4%) of the specialist used Miswak in comparison with (16%) of general practitioner, while (41%) of the general practitioner used month washes like chlorhexidine, P.T.A gargle or salty mouth wash in comparison with (29.4%) of specialists.

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