

ORAL HYGIENE PRACTICES AMONG FIXED ORTHODONTIC PATIENTS IN AZ-ZARQA, JORDAN

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ABSTRACT

The aim of this study was to assess self reported oral hygiene practices among orthodontic patients with fixed orthodontic appliances and to compare the results according to the gender.

A prospective cross sectional study was undertaken among fixed orthodontic patients attending orthodontic clinic at Prince Hashem Ben Al Hussein Military Hospital in Az Zarqa, Jordan from April to August 2015. The study sample consisted of 582 individuals of both genders in equal percentage. The age of the study sample ranged between 13 to 30 years. The participants were asked to fill a short questionnaire regarding their oral hygiene practices during orthodontic treatment.

Out of 582 study patients 293 (50.3%) were females and 289 (49.7%) males. 43.6% brushed twice daily and 22.2% three or more times daily. Other oral hygiene measures taken by the patients were the use of interdental tooth brush (23.2%) and mouthwashes (32.6%). Females showed better oral hygiene practices than males but the difference was statistically not significant according to interdental brushing and the use of mouthwashes.

Oral hygiene practices level among the study group was good according to tooth brushing frequency since all of them were using the tooth brush daily and about 65% of them brushed twice daily or more. The results showed less than acceptable use of interdental toothbrush and mouthwashes.

Key Words: Fixed orthodontic appliance, Gender, Oral hygiene practices, Questionnaire.

INTRODUCTION

Correct position of the teeth is important for aesthetics, speech, preservation of dental health and the overall personality of the individual.¹ Despite these benefits of orthodontic treatment many studies had pointed out that fixed orthodontic appliance is associated with increased plaque accumulation and retention around its different components like bands, brackets, wires, elastics and other components. These studies reported that cleaning of the teeth and gingiva around these appliances is more difficult.^{2,3} If the patient did not practice proper oral hygiene this plaque accumulation and retention will lead to caries,

gingivitis, gingival enlargement, halitosis, white spot lesions and other dental and periodontal problems to get.^{4,5} To avoid previously mentioned adverse effects of plaque retention and had successful orthodontic treatment, patients with fixed orthodontic appliances should follow proper plaque control measures. These measures included either mechanical plaque control such as using toothbrushes, dental floss, interdental brush, water picks or chemotherapeutic agents such as mouthwashes and dentifrices.^{6,7,8} The aim of this study was to assess oral hygiene practices among fixed orthodontic patients of both genders attending orthodontic clinic at Prince Hashem Ben AL-Hussein Military Hospital at Az-Zarqa, Jordan.

METHODOLOGY

Study group

A prospective cross sectional study consisting of 582 orthodontic patients, 293 (50.3%) females and 289 (49.7%) males who were getting orthodontic treatment at Prince Hashem Ben AL-Hussein Military Hospital at

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Received for Publication: July 31, 2016

Revised: August 14, 2016

Accepted: August 16, 2016

Az-Zarqa, Jordan between April and August 2015 was done. The age of the study sample ranged between 13 to 30 years old. The participants having upper and lower fixed orthodontic appliance formed the study group. The examiner explained to the participants the purpose of the study and verbal consent was obtained from the participants themselves or from their accompanying parents if they were below 18 years old.

The participants were asked to answer questions from a short questionnaire regarding their oral hygiene practices such as tooth brushing frequency, use of interdental brushes, and the use of mouthwashes during orthodontic treatment. The frequencies and percentages of the results were cross tabulated according to the gender because the study sample contained about an equal numbers of both males and females.

This study was approved by the ethical committee of pharmacological and clinical studies of the Jordanian Royal Medical Services.

The data were analyzed using computerized Statistical Package for Social Sciences (SPSS) 16 for windows. Descriptive analysis was undertaken. Crosstabulation was done. Statistical significance for the percentages was measured by chi-square test. The level of statistical significance was chosen at $p < 0.05$.

RESULTS

Details of the results can be seen in Table 1-3.

TABLE 1: FREQUENCY AND PERCENTAGES OF TOOTH BRUSHING ACCORDING TO THE GENDER

			Frequency of tooth brushing			Total
			Once daily	Twice daily	Three or more times daily	
Gender	Male	Count	118	120	51	289
		% within gender	40.8%	41.5%	17.6%	100.0%
		% of Total	20.3%	20.6%	8.8%	49.7%
	Female	Count	81	134	78	293
		% within gender	27.6%	45.7%	26.6%	100.0%
		% of Total	13.9%	23.0%	13.4%	50.3%
Total	Count		199	254	129	582
	% within gender		34.2%	43.6%	22.2%	100.0%
	% of Total		34.2%	43.6%	22.2%	100.0%

P value= 0.001, chi-square test

TABLE 2: FREQUENCY AND PERCENTAGES OF INTERDENTAL TOOTH BRUSH USE ACCORDING TO THE GENDER

			Use of interdental tooth brush		Total
			Yes	No	
Gender	Male	Count	57	232	289
		% within gender	19.7%	80.3%	100.0%
		% of Total	9.8%	39.9%	49.7%
	Female	Count	78	215	293
		% within gender	26.6%	73.4%	100.0%
		% of Total	13.4%	36.9%	50.3%
Total	Count		135	447	582
	% within gender		23.2%	76.8%	100.0%
	% of Total		23.2%	76.8%	100.0%

P value= 0.05, chi-square test

TABLE 3: FREQUENCY AND PERCENTAGES OF MOUTHWASH USE ACCORDING TO THE GENDER

			use of mouth wash		Total
			Yes	No	
Gender	Male	Count	87	202	289
		% within gender	30.1%	69.9%	100.0%
		% of Total	14.9%	34.7%	49.7%
	Female	Count	103	190	293
		% within gender	35.2%	64.8%	100.0%
		% of Total	17.7%	32.6%	50.3%
Total	Count		190	392	582
	% within gender		32.6%	67.4%	100.0%
	% of Total		32.6%	67.4%	100.0%

P value= 0.113, chi-square test

DISCUSSION

Assessment of oral hygiene practices among fixed orthodontic patients is important to understand patients oral healthcare needs and to follow up their compliance with oral hygiene instructions and education given to them by orthodontist or dental hygienist.^{5,6} If the patients with fixed orthodontic appliances did not maintain good oral hygiene it is advised to stop treatment. This study found that the majority of the patients brushed twice daily, this finding agreed with other studies which reported that the majority of orthodontic patients brushed twice daily.^{7,8} Amal H et al in their study⁹ reported that 14% of participants brushed once daily, 57% brushed twice daily and 29% brush three or more times daily. These results showed better compliance with oral hygiene practices than of this study. Some studies reported that brushing twice daily is enough for orthodontic patients to maintain good oral health during orthodontic treatment. In present study females showed statistically significant higher frequencies of tooth brushing than males. This agreed with other studies that reported females with fixed orthodontic appliances¹⁰ or without fixed orthodontic appliance¹¹ brushed their teeth more frequently than males. This gender difference in oral hygiene practices could be explained by the fact that females are more concerned about their appearance than males and more concerned about losing teeth in the future. Results of the current study were different from other studies that reported no statistical significant difference in tooth brushing frequency among patients with fixed orthodontic appliance according to the gender. Another mechanical aid in plaque control is the use of interdental toothbrush to clean below the arch wire and in wide interdental areas which are easier for use than the dental floss which is difficult to be used below and around arch wires. Present study reported

that 23.3% of our study group used interdental tooth brush with the standard toothbrush. This percentage is slightly higher than the result obtained by Da'ameh et al where 14.4% of their study sample reported the use of inter dental tooth brush in a study done among orthodontic patients in the north of Jordan.¹² But it was much lower than the result obtained by HAN et al⁵ who reported that 68.6% of his study sample among fixed orthodontic patients used interdental toothbrush daily. Another oral hygiene practice among orthodontic patients was the use of mouthwashes for plaque control and caries prevention because these mouthwashes contain either chlorhexidine or fluoride or both as an active components. Mouth washes should be used as adjuncts with mechanical methods of plaque control and not to be used alone. In the current study 32.6% reported the use of mouthwash during orthodontic treatment. This percentage is higher than the results obtained by Da'ameh et al who reported that 25.9% of their study sample used mouthwashes during orthodontic treatment¹² but lower than results obtained by HAN et al⁵ who reported that 64.4% of their study sample used mouthwashes during orthodontic treatment. Differences in oral hygiene practices percentages seen among different studies for orthodontic patients could be attributed to differences in the study sample size, age of study groups, educational level, oral health awareness, oral health knowledge, motivation, instructions or education given to orthodontic patients by orthodontist or dental hygienist.

CONCLUSION

Good oral hygiene practice is necessary for successful orthodontic treatment. Assessment of oral hygiene practices among orthodontic patients is necessary to evaluate their compliance with oral hygiene instructions and education given to them. Oral hygiene practices

level among this study group was good according to tooth brushing frequency since all of them were using the tooth brush daily and 65% of them brushed twice daily or even more. The results of this study showed less than acceptable use of interdental toothbrush and mouthwashes. Females showed better oral hygiene practices than males with statistical significance in the frequency of tooth brushing, but the difference was statistically not significant according to interdental brushing and the use of mouthwashes.

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