

**Original article:**

**The knowledge of Iraqi Dentist about the diagnosis of common oral lesions**

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**Abstract:**

**Background:** the scientific knowledge of dentist regarding the diagnosis of common oral lesions may vary. Oral aphthous ulceration, oral lichen planus, pyogenic granuloma and oral irritating fibroma are common oral lesions. **Objectives:** The aim of this study is to assess the knowledge of Iraqi dentist about the ability to diagnose the common oral lesions.

**Materials and methods:** A two hundred and seventy-eight dentist from both the health and education sectors were including in the questionnaire. The questionnaire included four pictures of common oral lesion that the dentist might see during his daily work and the question was (what is the most probable diagnosis?) **Results:** The overall assessment of knowledge of dentist regarding the four oral lesions is shown in table (6) with the higher mean of score for the diagnosis of aphthous ulceration (1.75), while the least mean of score was for the diagnosis of lichen planus (1.61). The total mean of scores of the knowledge of all dentists for the diagnosis of the four oral lesions was moderate (1.66). **Conclusions:** This study showed that the Iraqi dentist's knowledge about the diagnosis of lichen planus, pyogenic granuloma and fibroma was moderate knowledge, while for the diagnosis of aphthous ulceration the assessment was good and better than other lesions.

**Keyword:** Oral diagnosis; Dentists knowledge; Oral lesions.

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**Introduction**

The ability of dentist to recognize and differentiate different oral lesions is important concept to provide a good dental treatment and control. While most of dentists have adequate knowledge and practice in the diagnosis of common oral lesions, others may need more educational programs to maintain their personal knowledge about the detection and specification of oral lesions.

Oral Recurrent aphthous ulcers are occur by the development of recurring, tender ulcers in the oral mucosa with unrecognized cause<sup>1</sup>. Minor recurrent aphthous ulceration is the most common and affects

about 80% of adult and child patients, it has a specific feature of round or oval shallow ulcers usually no more than 5 mm in diameter with a white floor surrounded by a thin red margin<sup>2</sup>. It can cause severe functional disability and induce orofacial pain due to altered chewing pattern<sup>3,4</sup>.

Oral lichen planus is a group of lesions with a common clinical appearance but with different etiological factors<sup>5</sup>. The reticular form is the most common form of oral lichen planus which characterized by fine white lines. The line or striae may form a network or show annular and circular patterns with a peripheral erythematous area, which reflects a subepithelial

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inflammatory process <sup>6</sup>.

Pyogenic granuloma is an exophytic mass that occurs mostly on the gingiva which considered as a reactionary lesion to local irritant <sup>7, 8</sup>. The characteristic feature of oral pyogenic granuloma is a sessile or pedunculated tumor with red shiny surface that may be ulcerated and sometime bleed which is different from oral irritation fibroma that frequently has a pink smooth surface <sup>9</sup>.

The aim of this study is to assess the knowledge of Iraqi dentist about the ability to diagnose the common oral lesions according to their experience, degree of certification and the sector of service. To the best knowledge of the researchers, this is the first study that describes the Iraqi's dentist interest about oral mucosal lesions.

### Material and Methods

The study was conducted in three Iraqi cities in the middle Euphrates of Iraq; these cities are (Najaf, Karbala and Babylon). A two hundred and seventy-eight dentist from both the health and education sectors were include in the questionnaire.

The questionnaire included four pictures of common oral lesion that the dentist might see during his daily work, these pictures were: aphthous ulcer, pyogenic granuloma, irritation fibroma, and reticular lichen planus. All these lesions were selected as a spot diagnosis that can be diagnosed from the shape and color of the lesion without the need of further investigation and the question was (what is the most probable diagnosis?).

The sample of participants was categorized according to three subgroups:

1- According to the year of graduation to three groups, group 1 include the dentist who was graduated before the year 2000, group 2 include the dentist who was graduated during the years 2000-2010, while group3 include the dentist who was graduated after the year 2010.

2- According to the degree of certification into (bachelor's degree, diploma degree, master's degree and Doctor of Philosophy degree)

3- According to the sector of employment into health institutional sector and higher education institutions. Data of studied sample were entered and analyzed using the statistical package for social sciences (SPSS) version 25. Descriptive statistics presented as mean, standard deviation, frequencies and percentages. Chi-square test was used to compare frequencies

of qualitative variables. Knowledge assessment is based on the statistical scoring system of mean of scores. Knowledge is considered poor when mean of scores is between (1-1.33) as; moderate is between (1.34-1.66); while good knowledge is above (1.67). The oral medicine, oral diagnosis and oral surgery specialties were excluded from this study.

### Results

Table (1) shows statistical distribution of studied group by their general information; it explains that the majority of the dentist's subgroup is: those graduated in between 2011-2019 (52.87%), those that have B.Sc. certificate (64.75%), and those work in Health Directorate (71.58%)

**Table (1) Statistical distribution of studies sample**

Items	Sub-groups	Study group Total = 278	
		Frequency	Percentage
Year of Graduate	2000	47	16.91
	2001-2010	84	30.22
	2011-2019	147	52.87
Certificate	B.Sc.	180	64.75
	Diploma	29	10.43
	M.Sc.	51	18.35
	PhD.	18	6.47
Sector	Health Directorate	199	71.58
	Higher Education	79	28.42

Table (2) shows the assessment of knowledge of dentist ability for the diagnosis of pyogenic granuloma, it explain that the correct diagnosis was more in groups: those graduated during 2000-2010 (MS 1.77), those with Master of Science degree (MS 1.72) and those working in higher education institutions (MS 1.77). The chi square test was significant for all groups.

For fibroma (table 3), the difference was significant according to the year of graduation with the highest mean of scores of right answers for those who graduated in 2000-2010 (MS 1.75). While according to certificate the difference was non-significant. For the third group the difference was highly significant with more percentages of correct answer for higher education employees (MS 1.71).

**Table (2) assessment of Knowledge of dentists regarding pyogenic granuloma**

Items	Sub-groups	MS	Assess	Correct Answers Total = 188		Wrong Answers Total = 90		Chi Square P value
				Freq.	Percent.	Freq.	Percent.	
Year of Graduate	2000<	1.66	Moderate	31	16.49	16	8.51	5.49 0.05 S
	2000-2010	1.77	Good	65	34.57	19	10.11	
	2011-2019	1.63	Moderate	92	48.94	55	29.26	
Certificate	B.Sc.	1.45	Moderate	130	69.15	50	26.60	8.83 0.03 S
	Diploma	1.65	Moderate	13	6.91	16	8.51	
	M.Sc.	1.72	Good	33	17.55	18	9.57	
	PhD.	1.67	Good	12	6.38	6	3.19	
Sector	Health Directorate	1.64	Moderate	127	67.55	72	38.30	4.64 0.03 S
	Higher Education	1.77	Good	61	32.45	18	9.57	

NS: Nonsignificant; S: Significant; assess: assessment; MS: mean of scores

**Table (3) Knowledge of dentists regarding fibroma**

Items	Sub-groups	MS	Assess.	Correct Answers Total = 169		Wrong Answers Total = 109		Chi Square P value
				Freq.	Percent.	Freq.	Percent.	
Year of Graduate	< 2000	1.68	Good	34	18.09	16	8.51	5.92 0.05 S
	2000-2010	1.75	Good	57	30.32	19	10.11	
	2011-2019	1.59	Moderate	78	41.49	55	29.26	
Certificate	B.Sc.	1.67	Good	103	54.79	50	26.60	3.83 0.28 NS
	Diploma	1.50	Moderate	16	8.51	16	8.51	
	M.Sc.	1.68	Good	39	20.74	18	9.57	
	PhD.	1.59	Moderate	11	5.85	6	3.19	
Sector	Health Directorate	1.41	Moderate	108	57.45	72	38.30	7.18 0.007 HS
	Higher Education	1.71	Good	61	32.45	18	9.57	

NS: Nonsignificant ; S : Significant ; HS : High Significant, assess: assessment ; MS : mean of scores

As shown in table (4), the chi square test was non-significant for all three groups with more correct answers for those who graduated before (MS 1.74); those who had M.sc certificate (MS 1.63) and those working in higher education institutions (MS 1.70).

**Table (4) Knowledge of dentists regarding lichen**

Items	Sub-groups	MS	Assess.	Correct Answers Total = 188		Wrong Answers Total = 90		Chi Square P value
				Freq.	Percent.	Freq.	Percent.	
Year of Graduate	< 2000	1.74	Good	35	18.82	12	6.45	5.49 0.064 NS
	2000-2010	1.57	Moderate	48	25.81	36	19.35	
	2011-2019	1.70	Good	103	55.38	44	23.66	
Certificate	B.Sc.	1.50	Moderate	114	61.29	66	35.48	5.82 0.12 NS
	Diploma	1.50	Moderate	19	10.22	19	10.22	
	M.Sc.	1.63	Moderate	40	21.51	40	21.51	
	PhD.	1.50	Moderate	13	6.99	13	6.99	
Sector	Health Directorate	1.66	Moderate	131	70.43	68	36.56	0.37 0.54 NS
	Higher Education	1.70	Good	55	29.57	24	12.90	

NS: Nonsignificant ; S : Significant ; HS : High Significant , assess: assessment ; MS : mean of scores

According to the year of graduation and sector of service, there was non-significant difference between dentists toward the diagnosis of aphthous ulceration as shown in table (5). While according to degree of certificate there was a significant difference with the higher mean of score in those with PhD degree (MS 1.94).

**Table (5) Knowledge of dentists regarding Aphthous ulceration**

Items	Sub-groups	MS	Assess.	Correct Answers Total = 188		Wrong Answers Total = 90		Chi Square P value
				Freq.	Percent.	Freq.	Percent.	
Year of Graduate	< 2000	1.85	Good	40	21.28	7	3.72	1.84 0.39 NS
	2000-2010	1.75	Good	63	33.51	21	11.17	
	2011-2019	1.78	Good	114	60.64	33	17.55	
Certificate	B.Sc.	1.74	Good	133	70.74	47	25.00	7.81 0.05 S
	Diploma	1.76	Good	22	11.70	7	3.72	
	M.Sc.	1.88	Good	45	23.94	6	3.19	
	PhD.	1.94	Good	17	9.04	1	0.53	
Sector	Health Directorate	1.78	Good	156	82.98	43	22.87	0.5 0.83 NS
	Higher Education	1.77	Good	61	32.45	18	9.57	

NS : Nonsignificant ; S : Significant; assess: assessment ; MS : mean of scores

The overall assessment of knowledge of dentist regarding the four oral lesions is shown in table (6) with the higher mean of score for the diagnosis of aphthous ulceration (1.75), while the least mean of score was for the diagnosis of lichen planus (1.61). The total mean of scores of the knowledge of all dentists for the diagnosis of the four oral lesions was moderate (1.66).

**Table (6) Overall Assessment of Knowledge of dentists regarding the knowledge of dentist for the diagnosis of oral lesion.**

Items	MS	Assessment
Pyogenic	1.65	Moderate
Fibroma	1.64	Moderate
Aphthous	1.75	Good
Lichen	1.61	Moderate
Total	1.66	Moderate

**Discussion**

This study used a questionnaire to assess the knowledge about common oral diagnosis, among dentists to understand primarily how efficiently dentists differentiate between different oral lesion that are quite common in daily dental practice.

Oral pyogenic granuloma, which is a benign oral exophytic lesion the assessment of dentist's knowledge about diagnosis was moderate (MS = 1.65) with the highest score for dentist graduated in 2000-2010 and this is may be due to good experience of this group and good acquaintance during their education, and this is also the expected cause of higher score in the those dentist with master degree certificate. This moderate knowledge of dentist about pyogenic granuloma is explained by the common occurrence of this lesion in the oral cavity<sup>10</sup>, while the misdiagnosis score is related to the a wide range of differential diagnosis for this tumor<sup>11</sup>.

The overall assessment of diagnosis of fibroma was moderate (MS 1.64), with higher scores for dentist working in higher education institutions and this may be due to the tendency of universities toward the employment of dentists whose have a good knowledge and certification with better continuous education through their carrier. The lowest scores for the diagnosis of oral fibroma was for those graduated in 2011-2019 and the most probable cause is the low experience of new graduated dentists since the differential diagnosis of oral fibroma include many

other oral lesion like deep lipoma, deep mucocle and pyogenic granuloma<sup>12</sup>.

The ability of dentist for the diagnosis of lichen planus was the least compared to the other lesions (MS 16.1) and this is related to the fact that the occurrence of lichen planus is less common than the other lesions<sup>13</sup>. There was a non-significant difference between all subgroups in this study which mean that the problem of misdiagnosis of whit lichen planus is unrelated to the experience, certification, or the sector of service.

For aphthous ulceration the overall assessment of the dentist's knowledge was the best score (MS) compared to the other lesions, and this good knowledge is related to the unique feature and common incidence of aphthous ulceration in the oral cavity<sup>14</sup>. the most incorrect diagnosis of aphthous ulceration was recorded in this study as a traumatic ulceration and this may be due to a close proximity between these two lesion in clinical appearance and incidence, although the aphthous ulceration tend to be more consistent in shape as around or oval while the shape of traumatic ulceration mostly occur irregular according to the shape of the cause<sup>15</sup>.

### Conclusions

This study showed that the Iraqi dentist's knowledge about the diagnosis of lichen planus, pyogenic

granuloma and fibroma was moderate knowledge, while for the diagnosis of aphthous ulceration the assessment was good and better than other lesions.

Also, the study showed that the knowledge of dentist about oral lesion was related to the experience of the dentists and the sector of employment where those working for higher education institutes having a better knowledge compared to those working in the health care centers. So, this study gives suggestions for ministry of health for applying continues courses of oral medicine in the continuous learning centers to elevate the knowledge dentists that working in health centers.

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