



Evaluation of Psychological Disorders in patients with Oral Lichen Planus; a Case Control Study.

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Abstract;

Background and objective; Interest in the idea that immunological pathways may be involved in the etiology of subset of psychotic disorders has grown over the past few decades. The goal of this study was to investigate the psychiatric issues in individuals with oral lichen planus.

Method; This is a case control study which has been done at Oral & Maxillofacial medicine department in Khanzad Teaching Center and Erbil Dermatology Center between January 1st and August 1st, 2022. The Depression Anxiety Stress Scale -21 questionnaires were used to assess the psychological condition of patients with oral lichen planus. The sample consists of 100 participants, 50 of whom have oral lichen planus and 50 of healthy controls.

Results: There were considerable differences between the two groups, according to the oral lichen planus the values for stress (50%), anxiety (22%), and depression (34%), whereas the values in the control group were [stress (20%), anxiety (0.0%), and depression (20%)]. Among the cases, (90.0%) had only oral lesions and (76.0%) of which had symptoms. Anxiety, and stress had statistical significance relation (0.002, 0.001) respectively in patients with symptomatic lesions (erosive and atrophic type) that produce pain and discomfort.

Conclusion: The autoimmune diseases including the oral lichen planus has correlation with psychological factors, this research has shown the unfavorable impact of these oral lesions on the patient's psyche.

Key words: Anxiety, Depression, DASS-21, Oral lichen planus, Stress.

Introductions

Skin and oral mucous membranes are both impacted by the chronic inflammatory disorder lichen planus. Patients with oral lichen planus are typically female and of middle aged or older. The etiology of this condition is uncertain because several reasons could result in the same clinical and histological changes, these include genetic, viral, psychogenic, and autoimmune ones.^{1,2} The most common involving oral site is the buccal mucosa, the next common sites are tongue and gingivae respectively.

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Different types of oral lichen planus have been identified, based on the destruction and resolution of the soft tissue caused by the disease, these are representing the various presentations and phases of the lesions, and among these types the reticular type is the commonest which comprises meshwork part of striae, which slightly raised and felt as roughness by the patient, the other phases including desquamative gingivitis, plaque, atrophic, ulcerated, and the bullous type,³ the last 3 types are the most painful, and cause discomfort to the patient, by interfering with eating, and causing difficulty in maintaining of oral hygiene,⁴ and this may result developing anxious and stressful feeling in the patient.

Psychological disorders; is a condition characterized by abnormal thoughts, feelings, and behaviors.⁵ This can be related to depression, anxiety, stress, psychosis, sleep, and more,⁶ they can vary in severity and affect people differently. "Psychological factors" including stress, anxiety, and depression have all been commonly cited as potential factors related to the onset and/or worsening of OLP.^{2,7,8} The absence of patient's educational resources, on the other hand, causes tension and patients' concern about the risk of developing cancer.^{1,8} Therefore, a psychological assessment may be a useful step in the management of OLP patients. During the last 50 years, health measurements have become very impressed with the application of numerical scaling techniques to several health indices which can translate subjective statements about pain or anxiety into a numerical value that could be used for statistical analysis.¹ There are several questionnaires that are of sufficient specificity that can be useful in identifying these disorders. Recently the mental health of patients of lichen planus has been examined clinically with or without psychological questionnaire.⁹ The Depression Anxiety

Stress Scale (DASS) comprises a scale that Lovibond created in 1995 to provide a self-reported measure of stress, anxiety, and depression. The DASS originally contained 42 items; later, a condensed version (DASS-21) was created to decrease administration time and is now frequently used in clinical samples to screen for symptoms of various levels of stress, anxiety, and depression. Three subscales on each questionnaire are used to measure the three components of negative emotional states, such as depression (DASS-D), anxiety (DASS-A), and stress (DASS-S).¹⁰ According to DASS; depression characterized by low positive effect, loss of self-esteem and incentive, dysphonic mood (e.g. sadness or worthlessness) and a sense of hopelessness,⁷ while anxiety characterized by autonomic arousal and fearfulness (physiological hyper arousal) panic attacks, and fear (e.g. trembling or faintness),⁷ and stress is characterized by persistent tension, irritability, and a low threshold for becoming upset or frustrated (negative effect) and a tendency to overreact to stressful events.⁷ The aim of this study was to evaluate the psychological status of those patients suffering from OLP.

Patients and method:

This case control study was carried out in the Oral & Maxillofacial Medicine Department in Khanzad Teaching Center and Erbil Dermatology Center between January 1st and August 1st, 2022. The Kurdistan Higher Council of Medical Specialties ethical committee approved the study. All of the study's patients and control participants gave their consent. A total of 50 OLP patients with disease durations ranging from 1 month to 12 months have been included and selected according to the clinical features and the biopsies taken from their oral lesions, and 50 healthy individuals has been chosen as controls from the staffs of the Khanzad center



and some of their relatives that had received a copy of the questionnaires and recorded diagnosed based on clinical observations and histopathological criteria (the biopsy),^{10,11} while excluding those patients who had a history of pharmacological therapy that may have resulted in lichen planus-like lesions, those patients may have any of systemic diseases, such as cardiovascular disease, renal failure, diabetes, hypertension, liver diseases, etc. Patients with skin conditions or mucosal diseases related to oral lesions. Screening the patients for oral lesions was carried out utilizing mouth mirrors and white artificial light while the patients were asked to sit comfortably in a dental chair. All cases and controls underwent thorough history taking and physical examinations. The subjects were tested for the presence of oral lichen planus lesions, the location of lesions, the type of lesions, whether they are symptomatic or not, whether they are connected to other skin lesions or not, whether they are associated with pigmentation, and the length of time the disease has been present. A thorough case history was kept. For this investigation, informed patient permission was acquired. Assessment of psychological profile was done by giving the DASS-21 questionnaire to the patients, who were instructed to complete it and record their results in the form. The original form of DASS is in English, for respondents who do not speak English, the questionnaire was translated into the local

their answers on it. Inclusion criteria including patients with OLP who were language (Kurdish and Arabic languages). On a scale of 0 ("did not apply to me at all") to 3 ("applied to me very much or most of the time"), the patients were asked to rate the intensity of each symptom over the course of the previous week. And according to DASS 21 the next step was to calculate the sum of the points for each subscale and multiply it by two. The degree of a specific negative feeling will be categorized as normal, mild, moderate, severe, or extremely severe based on the score obtained.¹² Data were analyzed using Statistical Package for Social Sciences (SPSS, version 26). The Chi square test of association was used to compare the proportions of two groups. Fisher's exact test was used when the expected frequency (value) was less than 5 of more than 20% of the cells of the table. The Mann-Whitney test was used to compare the mean ranks of two groups. A p value of ≤ 0.05 was considered as statistically significant.

Results;

Fifty cases and fifty controls were included in the study. The mean (SD) of the age of cases was [49.4 (11.3) years] was significantly higher than that of controls [38.0 (10.9) years] ($p < 0.001$). The gender distribution is presented in Table (1), which shows also that 68% of the cases were females compared with 54% of the controls ($p = 0.151$).

Table (1). Age and gender distribution of the studies participants.

	N	Case No. (%)	Control No. (%)	P
Age				
< 30	11	3 (6.0)	8 (16.0)	
30-39	36	8 (16.0)	28 (56.0)	
40-49	19	11 (22.0)	8 (16.0)	



50-59	18	17 (34.0)	1 (2.0)	
≥ 60	16	11 (22.0)	5 (10.0)	< 0.001*
Mean (SD)		49.4 (11.3)	38.0 (10.9)	< 0.001**
Gender				
Male	39	16 (32.0)	23 (46.0)	
Female	61	34 (68.0)	27 (54.0)	0.151*
Total	100	50 (100.0)	50 (100.0)	

*By Chi square test. **By unpaired t test.

It is evident in Table (2) that the majority of the cases (90%) had oral lesions only and 10% had skin lesions in addition to oral lesions. It is evident also that 76% of the cases had symptoms. The largest proportion

of patients (86%) had reticular type mouth lesions, and 70% had bilateral buccal mucosa lesion. Details about the other lesions are presented in Table (2).

Table (2); The pattern of lesions.

Lesions	No.	(%)
Oral lesion only	45	(90.0)
Skin and oral lesion	5	(10.0)
Presence of symptoms	38	(76.0)
Pigmentation	10	(20.0)
<u>OLP types (No. = 50)</u>		
Reticular	43	(86.0)
Erosive	15	(30.0)
Atrophic type	8	(16.0)
Desquamative gingivitis	7	(14.0)
Bullous type	1	(2.0)
Plaque type	5	(10.0)
<u>OLP site (No. = 50)</u>		
Bilateral buccal mucosa	35	(70.0)
Unilateral buccal mucosa	11	(22.0)
Tongue	12	(24.0)
Gingiva	6	(12.0)
Lip	6	(12.0)
Labial mucosa	4	(8.0)
Palate	3	(6.0)



It is evident in Table (3) that the degrees and frequencies of stress were higher among cases than the controls. Only 20% of the controls had stress, which was mild, while 26% of cases had moderate stress, 8% had severe stress, and 6% had extremely severe

stress ($p < 0.001$). The anxiety levels were also higher among cases than the controls ($p = 0.001$). Regarding depression, 2% had severe depression, 8% had extremely severe depression, while none of the controls had such degrees of depression ($p = 0.014$).

Table (3); Stress, anxiety, and depression categories in cases and controls.

	N	Case No. (%)	Control No. (%)	P*
Stress				
Normal	65	25 (50.0)	40 (80.0)	
Mild	15	5 (10.0)	10 (20.0)	
Moderate	13	13 (26.0)	0 (0.0)	
Severe	4	4 (8.0)	0 (0.0)	
Extremely severe	3	3 (6.0)	0 (0.0)	< 0.001
Anxiety				
Normal	89	39 (78.0)	50 (100.0)	
Mild	6	6 (12.0)	0 (0.0)	
Moderate	4	4 (8.0)	0 (0.0)	
Severe	1	1 (2.0)	0 (0.0)	0.001
Depression				
Normal	73	33 (66.0)	40 (80.0)	
Mild	14	5 (10.0)	9 (18.0)	
Moderate	8	7 (14.0)	1 (2.0)	
Severe	1	1 (2.0)	0 (0.0)	
Extremely severe	4	4 (8.0)	0 (0.0)	0.014
Total	100	50 (100.0)	50 (100.0)	

*By Fisher’s exact test.

It is evident in Figure (1) that 50% of cases had stress, compared with 20% of controls ($p = 0.002$). Around one quarter (22%) of the cases had anxiety, while none of the controls

have it ($p < 0.001$). More than one third (34%) of cases had depression compared with 20% of controls, but the difference was not significant ($p = 0.115$).

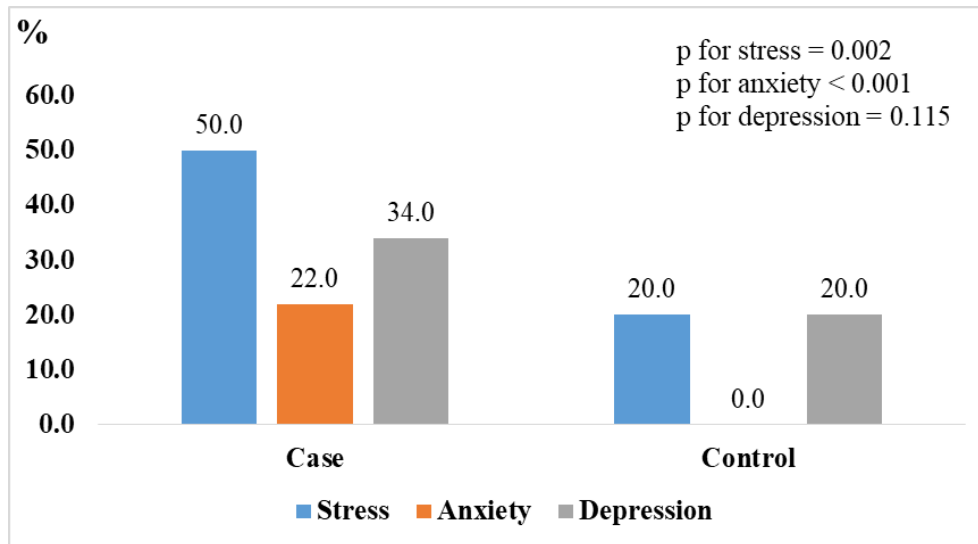


Figure (1); Stress, anxiety, and depression levels in patients and controls.

Table (4) indicates that the severity of OLP has effects on the psychological status of the patients, so those cases with symptoms have

higher scores of stress, anxiety, and depression.

Table (4); The relation between the severity of OLP symptoms and the higher DASS scores

Psychological factors	No. (%)	The presence of symptoms		P
		Yes	No	
Stress;				
Normal	25 (50%)	20 (52.6%)	5(41.7%)	
Stress	25(50%)	18(47.4%)	7(58.3%)	0.089
Anxiety;				
Normal	39(78.0%)	31(81.6%)	8(66.7%)	
Anxiety	11(22.0%)	7(18.4%)	4(33.3%)	0.112
Depression;				
Normal	33(66.0%)	26(68.4%)	7(58.3%)	
Depression	17(34.0%)	12(31.6%)	5(41.7%)	0.044

The scores of stress and anxiety of cases were significantly higher than those of the controls ($p = 0.001$ and $p = 0.002$ respectively).

Regarding depression scores, no significant difference was detected between cases and controls ($p = 0.536$) as presented in Table (5).

**Table (5).** Score of stress, anxiety and depression of cases and controls.

	Case			Control			P*
	Mean	(SD)	Mean Rank	Mean	(SD)	Mean Rank	
Stress score	15.9	(8.8)	59.9	10.4	(4.8)	41.1	0.001
Anxiety score	9.4	(7.5)	59.2	4.9	(3.6)	41.8	0.002
Depression score	7.9	(9.2)	48.7	6.1	(3.5)	52.3	0.536

*By the Mann Whitney test.

Discussion;

The recent study has shown that the psychological status of the patient's has affected by the OLP as it cause difficulty and disturbance in the eating and swallowing and even in the routine teeth brushing, beside that as much as the lesion is sever and uncomfortable, this will result in further tension and anxiety, so that the patient will begin to worry and be afraid of the likelihood of developing malignancies. Previously many studies have been done for the evaluation of the psychological status of OLP patient's, based on numerous researches have been conducted in an effort to quantify the number of studies that have demonstrated the high frequency of psychological components in OLP and rated the patients' levels of stress, anxiety, and depression.^{10,15}

During the investigation the patients have been asked about their quality of life, and most of them pointed out that the disease has impacted negatively on their life, but this haven't recorded as data in the recent treatise. There are different studies had been done to evaluate the psychological status in patients with OLP, and had demonstrated that the stressful and depressive emotions of the patients had affected on their quality of life, as in FIOCCO et al.¹³ which established that two-thirds of patients reported suffering from stress about (65%), and recorded higher scores for depression and anxiety about (59.2%). The Daume et al.¹⁶ study results showed that patients with OLP, in general,

have a significantly reduced quality of life. The clinical form of OLP significantly influences OHRQoL. The quality of life of patients with reticular lichen planus was significantly less affected than the comparator group. As well as in Wiriyaakijja et al.¹⁷ study revealed that these lesions had significantly impacted negatively on the quality of their life, using the Hospital Anxiety and Depression scale which has shown significant levels of anxiety and depression among the cases. Another study by Ozcko et al.¹⁴ revealed that higher level of depression in Hospital Anxiety and Depression Scale (HADS) was strongly correlated with worse quality of life ($p \leq 0.05$). The former studies as well as this recent study all revealed that the stress, anxiety and depression are developed secondary to the OLP.

In the other hand regarding the findings of other researches the psychological disorders are suggested to be the causative factors of OLP, as in Aggarwal et al.¹ study showed significant levels of stress, anxiety, and depression (70%, 66.6%, and 100%, respectively), and Kalkur et al.⁷ study used the DASS42, Depression levels in LP patients were 13.8% compared to the control group's 12.2%; anxiety levels in OLP patients were 18.3% compared to the control group's 13.9%; and stress levels in OLP patients were found to be higher at 25.4% compared to the control group's 16.38%, indicating a slight



increase in depression and anxiety in LP patients. The Manczyk et al.¹¹ study's showed that OLP had very high levels of anxiety (19.2%), moderate levels of stress (3.8%), and severe levels of depression (11.5%). The A.Sidkar et al.¹⁸ study has a comparative study showed higher levels of depression, anxiety and stress in OLP as well. Porras-Carrique et al.¹⁹ conducted a systematic review and meta-analyses to assess the current evidence on the prevalence of depression, anxiety, and stress in patients with oral lichen planus and the strength of their association, their findings show a high prevalence of depression (31.19%), anxiety (54.76%), and stress (41.10%). In the Chaudhary, S.²⁰ the OLP patients had significantly higher stress ($Z=4.331$; $p<0.05$, significant), anxiety ($Z=4.260$; $p<0.05$, significant) and depression levels ($Z=4.942$; $p<0.05$, significant).

Conclusion;

The autoimmune diseases including the OLP has correlation with psychological factors, this research has shown the unfavorable impact of these oral lesions on the patient's psyche, so it is noteworthy for the specialists to reassure and educate those patients about the nature of the disease, and that it could be controlled and well managed. Furthermore; it may be necessary that additional studies to be done involving the psychological therapies beside the usual therapeutic plans in LP.

Conflicts of interest

There were no conflicts of interest.

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