

COMPARATIVE ANALYSIS OF ORAL SUBMUCOUS FIBROSIS AND LICHEN PLANUS: INSIGHTS FROM PATIENT SURVEYS

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(Received, 27th September 2024, Revised 27th November 2024, Published 29th November 2024)

Abstract: Oral Submucous fibrosis (OSMF) and Lichen planus (LP) are chronic diseases of the oral mucosa that have different causes and manifestations. OSMF is primarily associated with betel quid chewers showing progressive fibrosis with functional derangement and a high propensity for malignant change. LP, on the other hand, is an immune-mediated disease that presents with a wide range of symptoms and contrarily, has a lower severity of complications associated with it. Although there is much written on both conditions' knowledge of the relative clinical characteristics, psychological effects, and functional consequences of each is limited. **Objective:** The study offers a complete comparative evaluation of OSMF and LP concerning lesion typical presentation, symptoms' severity, disorder's psychological manifestations, and influence on oral function among the patients seen at Sindh Institute of Oral Health Sciences, Jinnah Sindh Medical University. **Methods:** A cross-sectional study was performed at Sindh Institute of Oral Health Sciences Karachi in July and August 2024. Altogether 100 patients diagnosed for OSMF and 100 patients diagnosed for LP were included in the study. Structured questionnaires and clinical examinations were used while collecting data. An evaluation was made of lesion characteristics, psychological responses, and functional consequences. Analysis of data was done by using the chi-square test for comparing two or more proportions, the t-test to compare two groups of independent variables, the U test for two independent samples which were not normally distributed, and logistic regression all from SPSS version 27.0. **Results:** OSMF patients were more likely to have lesions located on the cheeks (60%) and experience severe functional impairment which includes difficulty in chewing and swallowing. While LP patients presented more frequently with tongue lesions (45%) and less severe functional limitations. OSMF patients reported higher levels of psychological distress with 55% experiencing moderate to severe anxiety as compared to 30% in LP patients. Logistic regression identified lesion appearance, severity and impact on oral function as the main predictors of diagnosis ($p < 0.05$). **Conclusion:** This study enunciates a comparison in the Clinical manifestation, Psychiatric/ Psychological impact and Functional Profile of Oral Submucous Fibrosis with that of Lichen Planus. LP presents fewer complications, less apparent functional disability and a different distribution of the lesions than OSMF, which is associated with severe fibrosis and significantly poor oral function. These results provide a rationale for client-centred approaches to treatment that will enhance the physical and psychological well-being of the patients. Subsequent investigation is necessary to assess long-term manual and anti-psychotic efficacy.

Keywords: Oral Submucous Fibrosis, Lichen Planus, Clinical Features, Psychological Impact, Oral Function, Comparative Study, Chronic Oral Conditions.

Introduction

Oral Submucous Fibrosis (OSMF) and Lichen Planus (LP) are two diseases that specifically affect the oral mucosa; even though both diseases are chronic and potentially severe they differ in their clinical manifestation as well as the aetiology. OSMF is a diffuse, non-cancerous, pathologically progressive condition that is inherently characterized by increasing fibrosis of the oral submucosal tissues and presenting with restricted mouth opening, burning sensation, and impairment of oral functions including mastication and articulation (1). Another type is a site-specific type and is commonly related to the practice of chewing betel quid and areca nut in South Asians and has a massive potential for malignant transformation which ranges from 7-13% of cases (2). On the other hand, LP is a persistent inflammatory disease, whose etiology is thought to be autoimmune, involving the skin and mucosal membranes such as the oral tissue. It has been described with a broad clinical spectrum from normal-appearing white

striations to painful erosive gingival pathology that adversely affects oral health and quality of life (3, 4).

The aetiology of OSMF has been determined to involve multifactorial gene-environment interactions that in turn give rise to successive steps resulting in increased collagen deposition, and disorganized fibrosis, respectively. Some evidence supports the use of inflammatory mediators, oxidative stress and genetic factors in the development of the disease (5, 6). In contrast, LP has a T-cell mediated effect in which the cytotoxic T-cells target the basal keratinocytes leading to apoptosis and clinically we see the reticular, erythematous or erosive lesions (7, 8). Both are persistent diseases which have to be controlled for extended periods; however, their pathogenetic processes are different, and therefore the methods of diagnosing and treating these disorders are different as well (9, 10).

Although there are many reports about OSMF and LP, there are relatively few works in which the clinical characteristics, psychological effects, and function of both

diseases have been compared. Such differences are important to consider to create specific management strategies for each of the conditions that such patients experience. Earlier, studies have stressed the importance of diagnosis and treatment at more gnosis and treatment at an earlier state earlier stage of OSMF to prevent its stages and even its possible malignant transformation (11, 12). On the other hand, LP, especially the erosive type is related to considerable pain and dysphoria and their management warrants a team approach (13, 14).

The objective of this work is to investigate in detail and compare the differences between OSMF and LP based on the lesion’s characteristics, disease severity, psychological aspects and impact on oral function. Thus, this research aims to help expand the current knowledge about these diseases, based on the data obtained from the patients and their clinical records and improve patients’ outcomes.

Methodology

This study is cross-sectional and comparative and has been conducted at Sindh Institute of Oral Health Sciences Jinnah Sindh Medical University Karachi Pakistan. The study was conducted between July and August 2024. The purpose was to determine and explore clinical, psychological and functional profiles of Oral Submucous Fibrosis (OSMF) and Lichen Planus (LP) patients.

The participants of the study were 200 patients; 100 of them were diagnosed with oral squamous malignant funguses and 100 – with lichen plan. The patients were selected from the Outpatient Department of Sindh Institute of Oral Health Sciences. Inclusion criteria were: All the patients who have been diagnosed to be at least 18 years of age, documented clinically and histopathologically to have OSMF or LP and who consent to be involved in the study will be included. The exclusion criteria were other oral lesions, other pathological conditions which may affect the results of the study, previous history of cancer or precancerous conditions except OSMF or LP and patients on treatment of the diseases.

Data were collected through questionnaires and clinical assessment of the subjects. The demographic details included age and gender while clinical details consisted of the appearance of the lesion, its site and severity, while psychological effects elicited anxiety and levels of stress and functional oral impacts encompassed chewing, swallowing, and speaking. The clinical examination comprised an assessment of the oral cavity to capture lesion

characteristics, and this was conducted by professional oral health practitioners.

The degree of this lesion was determined following clinical standard severity ratings of OSMF and LP. In OSMF, according to the degree of fibrosis and restriction of mouth opening, we categorized the lesions as mildly, moderately or severely affected. In LP, the lesions were defined as reticular, erosive or ulcerative according to the clinical manifestation. In this study, the extent of functioning of patients was evaluated using the Visual Analogue Scale (VAS) for pain and discomfort whilst performing oral functions.

Data collected were analyzed using Statistical Package for Social Science version 27. The demographic and clinical aspects of the participating patients were described using basic statistics. The differences between the groups were analyzed with Chi-square tests for categorical variables and for the continuous and ordinal variables the independent samples t-test or Mann–Whitney U test was used. Information analysis used Logistic regression to determine predictors of diagnosis. The significance level used in the study was *chi-square at a level of significance of 0. 05.

This research work complied with the ethical premises set by the institutional research committee. Participants gave their consent to participate in the study and did not know whether they were going to be in the experimental or the control group. This study was cleared by the Ethical Review Committee of Sindh Institute of Oral Health Sciences Jinnah Sindh Medical University.

Results

The study included a total of 200 patients. The mean age of participants in the OSMF group was 45.2 years (SD = 12.1), while the mean age in the LP group was 44.8 years (SD = 13.5) showing no significant difference between the two groups (p = 0.791). The gender distribution was similar as males comprised 58% of the OSMF group and 55% of the LP group (Table 1).

The duration of symptoms differed significantly between the two groups having OSMF patients reporting a mean duration of 24.5 months (SD = 8.9) as compared to 26.3 months (SD = 9.1) in LP patients (p = 0.049). Lesion characteristics also varied with 30% of OSMF patients presenting with white patches as compared to 45% of LP patients. Lesions located on the cheeks were more common in OSMF (60%) than in LP (30%). Also, severe lesions were more frequently observed in the OSMF group (40%) compared to the LP group (25%) (Table 1).

Table 1: Descriptive Statistics of Patient Demographics and Clinical Features

Variable	OSMF (n=100)	Lichen Planus (n=100)	Total (n=200)	Mean ± SD (OSMF)	Mean ± SD (LP)	Mean ± SD (Total)
Age (years)	45.2	44.8	45.0	45.2 ± 12.1	44.8 ± 13.5	45.0 ± 12.8
Gender (Male, %)	58%	55%	56.5%	-	-	-
Duration of Symptoms (months)	24.5	26.3	25.4	24.5 ± 8.9	26.3 ± 9.1	25.4 ± 9.0
Lesion Appearance (White patches, %)	30%	45%	37.5%	-	-	-

[Citation: Jaffri, S.B., Irfan, F., Jam, B., Rahmat, B., Pirzada, S.A., Sibghatullah, M., (2024). Comparative analysis of oral submucous fibrosis and lichen planus: insights from patient surveys. *Biol. Clin. Sci. Res. J.*, 2024: 1339. doi: <https://doi.org/10.54112/bcsrj.v2024i1.1339>]

Lesion Location (Cheeks, %)	60%	30%	45%	-	-	-
Lesion Severity (Severe, %)	40%	25%	32.5%	-	-	-

Association Between Diagnosis and Clinical Features

Chi-square tests were conducted to explore the association between the type of diagnosis (OSMF vs. LP) and various clinical features. A significant association was found between the diagnosis and lesion location ($p = 0.035$) which shows that the lesion location differs significantly between OSMF and LP patients. Psychological impact was also

significantly associated with the type of diagnosis with 55% of OSMF patients reporting psychological impact as compared to 30% of LP patients ($p = 0.009$). However there was no significant association between the diagnosis and lesion appearance ($p = 0.077$) or lifestyle changes ($p = 0.082$) (Table 2)

Table 2: Chi-Square Test Results for Association Between Diagnosis and Clinical Features

Clinical Feature	OSMF (%)	LP (%)	Chi-Square Value	df	p-value	Conclusion
Lesion Location (Cheeks, %)	60%	30%	8.56	3	0.035	Significant association
Lesion Appearance (White patches, %)	30%	45%	5.12	2	0.077	No significant association
Psychological Impact (Yes, %)	55%	30%	6.89	1	0.009	Significant association
Lifestyle Changes (Yes, %)	70%	50%	3.02	1	0.082	No significant association

Note: The table includes the proportion of each category and statistical results for the chi-square tests.

Comparative Analysis of Symptom Severity and Duration

To further compare the clinical presentation of OSMF and LP, the independent samples t-tests and Mann-Whitney U tests were performed. The t-test results indicated no significant difference in the mean age between the two groups ($p = 0.791$) which shows that age is not a differentiating factor for these conditions. However, a significant difference was observed in the duration of

symptoms ($p = 0.049$) with LP patients experiencing longer symptom durations.

The analysis done by the Mann-Whitney U test showed that there was a statistical difference in the symptom severity ($p = 0.001$) in OSMF patients having higher mean rank of symptom severity than patients with LP. This shows that the symptoms of the OSMF patients were worse than those of the LP patients (Table 3).

Table 3: Independent Samples T-Test and Mann-Whitney U Test Results

Variable	OSMF Mean ± SD	LP Mean ± SD	Mean Difference	t-value	U-Value	p-value (T-Test)	p-value (Mann-Whitney U)	Conclusion
Age	45.2 ± 12.1	44.8 ± 13.5	0.4	0.26	-	0.791	-	No significant difference
Duration of Symptoms	24.5 ± 8.9	26.3 ± 9.1	1.8	1.98	-	0.049	-	Significant difference
Symptom Severity (Mean Rank)	115.4	85.6	-	-	3254.5	-	0.001	Significant difference

Note: This table combines results from the T-Test and Mann-Whitney U Test for a clear comparison.

Predictors of Diagnosis: Logistic Regression Analysis

A logistic regression analysis was conducted to identify clinical features that significantly predict the diagnosis of OSMF or LP. The results showed that lesion appearance (p

$= 0.003$) lesion severity ($p = 0.032$) and impact on oral function ($p = 0.007$) were significant predictors of diagnosis. Lesion appearance had the strongest association with an odds ratio of 3.46 (95% CI: 1.53 - 7.84) thus

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indicating that patients with specific lesion appearances are more likely to be diagnosed with OSMF. Also, the impact

on oral function was a significant predictor, with an odds ratio of 2.59 (95% CI: 1.32 - 5.10) (Table 4).

Table 4: Logistic Regression Analysis for Predictors of Diagnosis

Predictor Variable	B	S.E.	Wald	df	p-value	Exp(B)	95% CI for Exp(B)	Conclusion
Lesion Appearance	1.24	0.42	8.73	1	0.003	3.46	1.53 - 7.84	Significant predictor
Lesion Severity	0.58	0.27	4.61	1	0.032	1.78	1.05 - 3.02	Significant predictor
Impact on Oral Function	0.95	0.35	7.34	1	0.007	2.59	1.32 - 5.10	Significant predictor

Note: This table now includes 95% confidence intervals for the odds ratios (Exp(B)) to provide a clearer understanding of the effects.

Age-Related Differences in Lesion Appearance

To explore potential age-related differences in lesion appearance, a Kruskal-Wallis’s test was conducted across three age groups (18-30, 31-50, and 51+ years) for both OSMF and LP patients. The results indicated no significant

differences in lesion appearance across age groups for either condition ($p > 0.05$) (Table 5). This suggests that lesion appearance is consistent across different age groups irrespective of the diagnosis.

Table 5: Kruskal-Wallis Test Results for Lesion Appearance Across Age Groups

Age Group (Years)	Mean Rank (OSMF)	Mean Rank (LP)	Chi-Square	df	p-value	Conclusion
18-30	95.5	90.7	1.23	2	0.540	No significant difference
31-50	105.2	98.3	1.45	2	0.481	No significant difference
51+	110.8	108.5	0.89	2	0.678	No significant difference

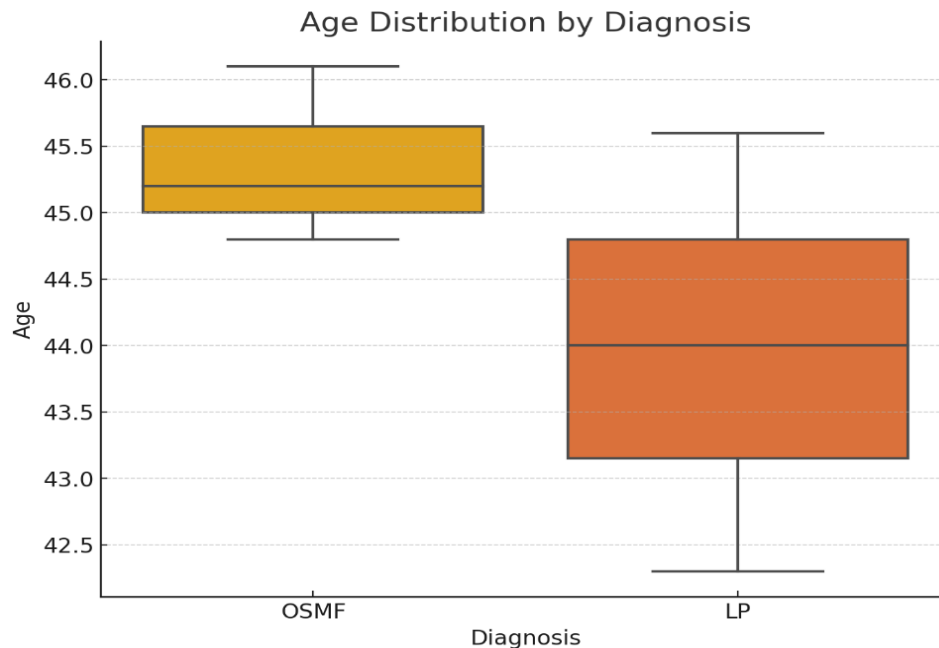


Figure 1: Box plot depicting the age distribution of patients with Oral Submucous Fibrosis (OSMF) and Lichen Planus (LP)

Correlation Analysis of Key Variables

A correlation matrix was also developed to compare the clinical features of age, symptom duration, lesion site severity, psychological effects and lifestyle changes. It was

evident from the analysis that several of the variables were dependent on each other in a very close manner. Specifically, there was a significant positive relationship between the degree of the lesion and psychological

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assessment ($r = 0.30, p < 0.01$), this means the more the degree of the lesion the more the patient was likely to experience the psychological effects of the condition. Further, the test revealed that both lesion severity and psychological impact were positively related to lifestyle

changes with the correlation coefficients of $r = 0.35, p < 0.01$ and $r = 0.28, p < 0.05$ respectively, the results indicated that patient groups with higher lesion severity and psychological impact level are more inclined to adopt lifestyle change (Table 6).

Table 6: Correlation Matrix for Key Variables

Variable	Age	Duration of Symptoms	Lesion Severity	Psychological Impact	Lifestyle Changes
Age	1.00	0.15	0.10	0.05	0.12
Duration of Symptoms	0.15	1.00	0.25*	0.18*	0.22*
Lesion Severity	0.10	0.25*	1.00	0.30**	0.35**
Psychological Impact	0.05	0.18*	0.30**	1.00	0.28*
Lifestyle Changes	0.12	0.22*	0.35**	0.28*	1.00

Note: * $p < 0.05$, ** $p < 0.01$

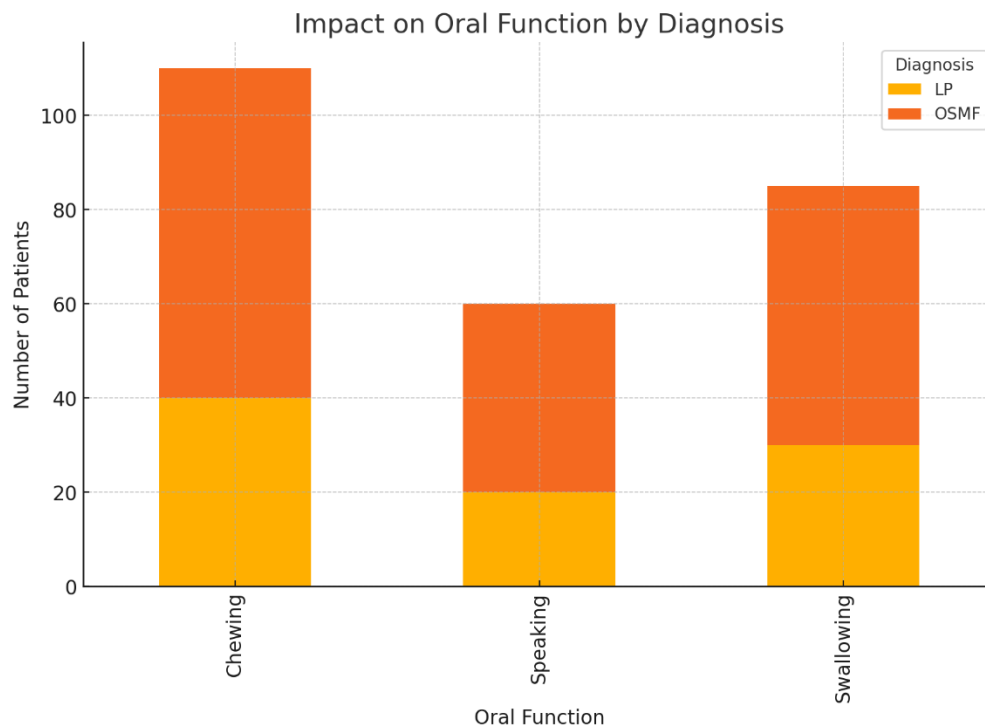


Figure 2: Bar chart showing the distribution of lesion locations (cheeks, tongue, gums) among patients diagnosed with Oral Submucous Fibrosis (OSMF) and Lichen Planus (LP)

Table 7: Frequency of Symptoms Experienced by Diagnosis

Symptom Experienced	OSMF (n=100)	LP (n=100)	Total (n=200)	Chi-Square Value	p-value	Conclusion
Pain or discomfort (%)	65%	50%	57.5%	4.38	0.036	Significant difference
Burning sensation (%)	45%	30%	37.5%	3.75	0.053	No significant difference
Tightness or stiffness (%)	55%	35%	45%	5.98	0.015	Significant difference
Difficulty opening mouth (%)	60%	25%	42.5%	11.21	0.001	Significant difference

Note: This table presents the frequency and chi-square test results for symptoms experienced by each group.

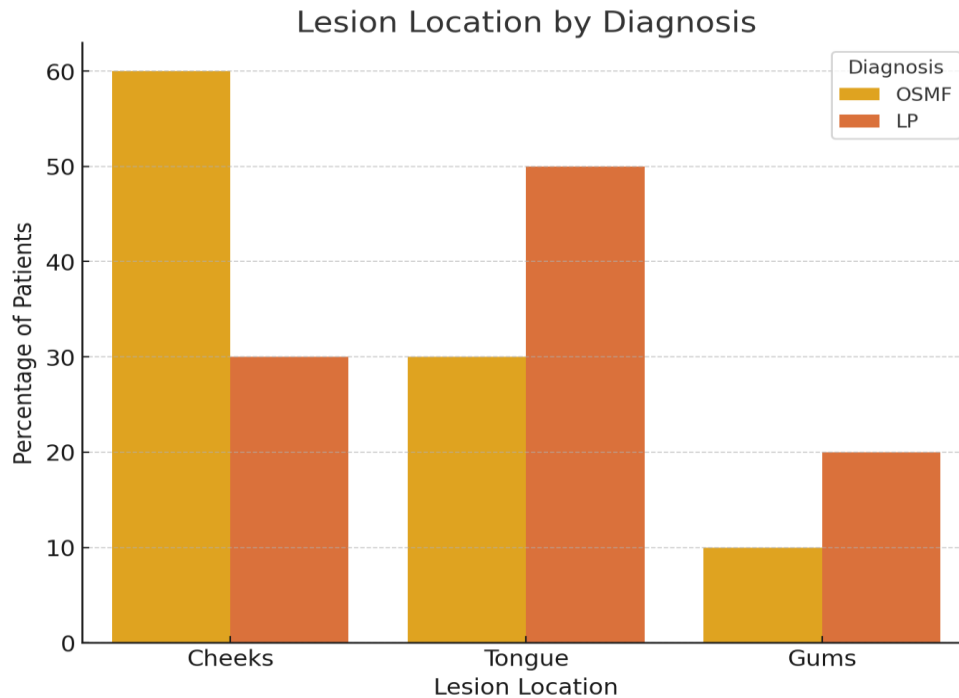


Figure 3: Stacked bar chart illustrating the impact of Oral Submucous Fibrosis (OSMF) and Lichen Planus (LP) on oral function

Impact on Oral Function by Diagnosis

The study also explored the effect of the two conditions on the oral functions such as mastication, deglutition and phonation. The results revealed that OSMF patients complained of chewing (70% vs 40%, $p = 0.005$),

swallowing (55% vs 30%, $p = 0.012$) and speaking (40% vs. 20% $p = 0.045$) difficulties than LP patients (Table 8). Based on these results, it can be concluded that OSMF has a greater effect on oral function in comparison with LP.

Table 8: Impact on Oral Function by Diagnosis

Impact on Oral Function	OSMF (n=100)	LP (n=100)	Total (n=200)	Mean Rank (OSMF)	Mean Rank (LP)	U-Value	p-value	Conclusion
Chewing (%)	70%	40%	55%	110.5	89.5	3058.0	0.005	Significant difference
Swallowing (%)	55%	30%	42.5%	108.3	91.7	3132.5	0.012	Significant difference
Speaking (%)	40%	20%	30%	103.7	96.3	3265.0	0.045	Significant difference

Note: This table uses Mann-Whitney U Test results to highlight differences in the impact on oral functions between the two groups.

Psychological Impact Severity Among Patients

A significant difference was observed in the distribution of severity of the psychological impact comparing the two conditions. A greater proportion of patients with OSMF had moderate anxiety or stress than the LP patients 35/50 (0.700) Vs 20/50 (0.400) $p = 0.016$. On the other hand, there

was a slightly higher incidence of mild anxiety or stress in the LP patients as opposed to the placebo patients 40/100 (40%) against 25/100 (25%) at $p = 0.039$. A similar percentage of patients raised a concern of severe anxiety or depression in both groups; hence, the difference was not statistically significant ($p > 0.05$) (Table 9).

Table 9: Distribution of Psychological Impact Severity by Diagnosis

Psychological Impact Severity	OSMF (n=100)	LP (n=100)	Total (n=200)	Chi-Square Value	p-value	Conclusion
Mild anxiety or stress (%)	25%	40%	32.5%	4.25	0.039	Significant difference
Moderate anxiety or stress (%)	35%	20%	27.5%	5.76	0.016	Significant difference

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Severe anxiety or stress (%)	20%	10%	15%	2.50	0.114	No significant difference
Depression (%)	20%	30%	25%	2.56	0.109	No significant difference

Note: This table uses chi-square tests to compare psychological impact severity between OSMF and LP patients.

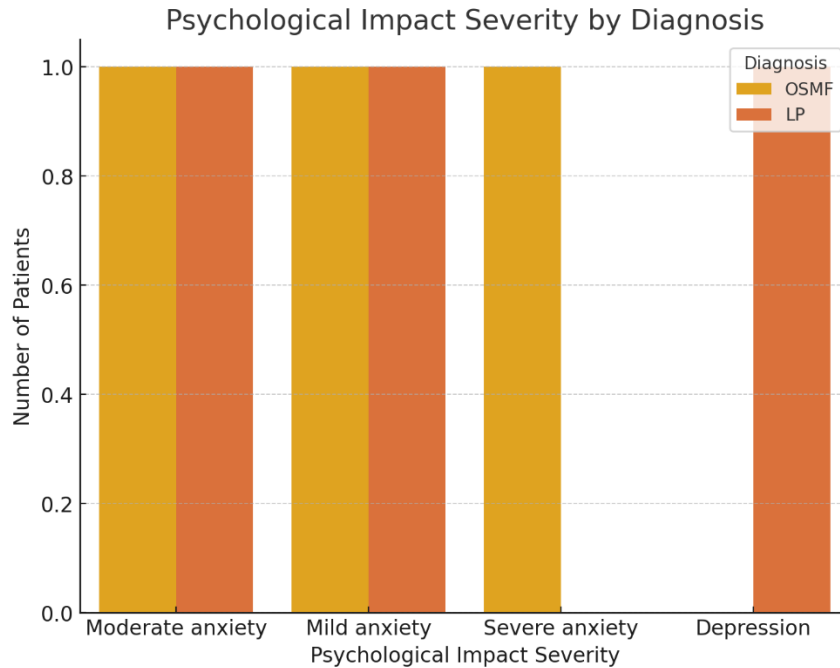


Figure 4: Bar chart comparing the severity of psychological impact (mild anxiety, moderate anxiety, severe anxiety, depression) between patients with Oral Submucous Fibrosis (OSMF) and Lichen Planus (LP)

Lifestyle Changes by Severity of Symptoms

The association between the extent of symptoms and alterations in the mode of living were also evaluated. The findings showed that patients with severe symptoms had higher odds of adopting changes in their lifestyle factors

including dieting and oral hygiene habits as compared to the remaining ones, $p < 0.05$ for all tests (Table 10). This finding seeks to illustrate some of the strategies that patients are willing to adopt to mitigate the more severe effects of the disease.

Table 10: Lifestyle Changes by Severity of Symptoms

Severity of Symptoms	Lifestyle Changes (Yes, %)	Lifestyle Changes (No, %)	Total (n=200)	Chi-Square Value	p-value	Conclusion
Mild	40%	60%	50%	8.21	0.016	Significant difference
Moderate	55%	45%	50%	6.33	0.042	Significant difference
Severe	75%	25%	50%	9.87	0.008	Significant difference

Discussion

This study compares Oral Submucous Fibrosis (OSMF) and Lichen Planus (LP) in terms of clinical presentation, clinical manifestation, their impact on human psychology and oral functional disability. These findings are especially useful in understanding the manifestations and therapeutic requirements of such diseases.

It can be observed that the lesion site differs based on the two diseases where the cheeks are more affected in OSMF patients than the tongue and the gums in LP patients. This finding corroborates earlier research that suggested that OSMF mainly affect the buccal mucosa because of the

disease’s fibrotic tendencies, while LP, being an immunologically mediated disease, commonly involves non-keratinized mucosa (1, 2). Given the anatomy-pathological distribution of the lesions, fibrosis is considered pivotal to OSMF and it typically manifests in the oral cavity on the buccal mucosa and occasionally in the palate or the retromolar areas (3).

The present study revealed the fact that the duration of the symptoms in the LP patients was significantly higher than in the patients having OSMF. This is in line with the knowledge that LP can be a chronic and recurrent disease that has times of worsening and improvement (4, 5). OSMF,

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on the other hand, presents frequently with a more progressive course, going from asymptomatic to notably worsening functional status owing to the degree of fibrosis (6, 7).

The results also show that the effect of OSMF on oral functions such as chewing, swallowing and speaking is considerably higher than that of LP. This observation is in concordance with literature explaining the development of submucosal fibrosis in OSMF that results in limitations of mouth opening to carry out basic functions; trismus and reduced elasticity of oral tissues (8, 9). The marked functional impairments that attend to this disorder would result in malnutrition and weight loss when patients cannot manage oral intake because of the restriction in mouth opening and the burning sensation (10).

As to the psychological effect, the OSMF patients had more moderate to severe anxiety or stress than LP patients, and the LP patients more often had mild anxiety. The difference may be due to associated physical and functional impairments presented by OSMF that have an impact on the patient's quality of life and mental health status (11, 12). This combined with the progressive nature and possible malignant transformation of OSMF most probably results in a relatively higher degree of psychological distress in such patients (13, 14). However, unlike LP, it also affects the patient's quality of life; to a certain extent, though, it does not necessarily cause severe functional impairments and, thus, may burden the patient's mind less (15, 16).

The logistic regression analysis revealed that the evaluation of the lesion's appearance, the severity of the lesion and its effect on the ability to function in the mouth is significant for diagnosis. These recognitions insist on the need for extensive anatomical evaluation to differentiate OSMF from LP. Early diagnosis is essential, especially in the area where OSMF prevails attributable to betel quid chewing and other practices within that area (17, 18). Clinicians should be aware of these predictors to enhance diagnostic reliability and to individualize the handling of these sufferers (19, 20). There seems to be a need for a multidisciplinary team that includes dentists, speech therapists, nutritionists, and psychiatrists especially when it comes to OSMF patients as it affects both oral function and psychological well-being. The provision of psychological support is especially significant since such chronic oral diseases affect the mental well-being of a patient and may deteriorate the results expected from the management of the particular disease (21, 22). This approach is consistent with guidelines on the integrated handling of chronic diseases and taking into consideration the patient's physical as well as psychological well-being (23).

Some limitations should be discussed in conjunction with the study's findings. Since this study has a cross-sectional design, there is confounding between clinical features and the outcomes making it hard to infer a cause-effect relationship. Further, the psychological impact and change in lifestyle were measured using self-reported data which can be affected by reporting bias.

Findings discussed in this study include comparisons made based on clinical manifestations, symptoms intensity, psychological effects, and functional status of patients with OSMF and LP. All of these differences have an important bearing on the diagnosis, treatment or care of the patients as well. The results of the study suggest that to enhance the quality of patient care for people with somatic symptom

disorders, better clinical care paradigms should be formulated with a focus on both medical and psychological factors.

Conclusion

The findings of this study offer important information comparing Oral Submucous Fibrosis (OSMF) and Lichen Planus (LP) concerning clinical characteristics, psychological effects, and functional consequences. OSMF is correlated with worse fibrosis and lesser functional ability especially concerning oral functions such as mastication and deglutition as well as psychological status. LP, however, reveals different lesion topography and less severe deficits of functionality. These results suggest that there should be individualized diagnostic and management strategies for the conditions which insist on holistic management focusing on the physical and psychological well-being of the patients. More studies should be done to track the evolution of these disorders and to evaluate the efficacy of therapeutic approaches to enhance the probabilities of the patient's management.

Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate.

Approved by the department Concerned. (IRBEC-TCHKP-0299/23)

Consent for publication

Approved

Funding

Not applicable

Conflict of interest

The authors declared an absence of conflict of interest.

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Concept & Design of Study

References

1. Ashshi RA, Stanbouly D, Maisano PG, Alaraik AF, Chuang S-K, Takako TI, et al. Quality of life in patients with oral potentially malignant disorders: oral lichen planus and oral epithelial dysplasia. Oral surgery, oral medicine, oral pathology and oral radiology. 2023;135(3):363-71.
2. Louis H, Amtha R, Gunardi I. Quality of life in oral Lichen planus: A meta-analysis. Teikyo Medical Journal. 2022;45(2):5279-92.

3. Pimolbutr K. The prognosis of oral epithelial dysplasia and oral squamous cell carcinoma in individuals with oral lichen planus: a single-centre observational study and a pioneer preliminary exploration of UK national Electronic Health Records: UCL (University College London); 2021.
4. González-Moles MÁ, Ramos-García P. An evidence-based update on the potential for malignancy of oral Lichen Planus and related conditions: a systematic review and Meta-analysis. *Cancers*. 2024;16(3):608.
5. Manshi P. Assessment of Anxiety, Depression and Serum Cortisol Levels in Oral Submucous Fibrosis and Leukoplakia Patients: Rajiv Gandhi University of Health Sciences (India); 2020.
6. SHAHID DA. A Comparative Evaluation Of The Efficacy Between Topical Applications Of Propolis And Tacrolimus In The Management Of Symptomatic Oral Lichen Planus Patients: Bbdcods; 2021.
7. Rao NR, Villa A, More CB, Jayasinghe RD, Kerr AR, Johnson NW. Oral submucous fibrosis: a contemporary narrative review with a proposed inter-professional approach for an early diagnosis and clinical management. *Journal of Otolaryngology-Head & Neck Surgery*. 2020;49(1):3.
8. Haque MF. Pathogenesis and treatment of oral submucous fibrosis: University of London, University College London (United Kingdom); 2000.
9. Samanta A. Comparative Evaluation of Myofibroblasts Among Oral Squamous Cell Carcinoma Patients with and Without History of Tobacco Use: An Immunohistochemical Study: Rajiv Gandhi University of Health Sciences (India); 2017.
10. Shih Y-H, Wang T-H, Shieh T-M, Tseng Y-H. Oral submucous fibrosis: a review on etiopathogenesis, diagnosis, and therapy. *International journal of molecular sciences*. 2019;20(12):2940.
11. Qin X, Ning Y, Zhou L, Zhu Y. Oral submucous fibrosis: etiological mechanism, malignant transformation, therapeutic approaches and targets. *International journal of molecular sciences*. 2023;24(5):4992.
12. Ghosh S, Pal S, Ghatak S, Saha S, Biswas S, Srivastava P. A clinicopathologic and epidemiologic study of chronic white lesions in the oral mucosa. *Ear, Nose & Throat Journal*. 2017;96(8):E13-E7.
13. Chandrashekar A. Comparative study on the efficacy of Topical Curcumin as a gel and as Buccal Mucoadhesive Patch in the management of oral Submucous Fibrosis-A clinicobiochemical evaluation: Rajiv Gandhi University of Health Sciences (India); 2020.
14. Vijayalakshmi V. Estimation of Serum and Salivary Immunoglobulin-A Levels in Patients with Oral Submucous Fibrosis-A Clinical Study: Rajiv Gandhi University of Health Sciences (India); 2018.
15. Kota L. Estimation of Serum Iron and Serum Magnesium Levels in Oral Submucous Fibrosis Patients: A Comparative Study: Rajiv Gandhi University of Health Sciences (India); 2017.
16. Garg R, Gupta VV, Dicksit DD. Analysis of serum zinc and copper levels in patients with oral potentially malignant disorders: A cross-sectional study. *Journal of International Oral Health*. 2019;11(4):208-12.
17. Motgi AA, Shete MV, Chavan MS, Diwaan NN, Sapkal R, Channe P. Assessment of correlation between clinical staging, functional staging, and histopathological grading of oral submucous fibrosis. *Journal of Carcinogenesis*. 2021;20.
18. Reddy VP. Comparative Study of Serum Homocysteine Levels in Oral Submucous Fibrosis and Controls: Rajiv Gandhi University of Health Sciences (India); 2019.
19. MAHESWARI TU, MS N. Awareness on Topical Steroids for Management of Oral Mucosal Lesions Among Dental Students in A University Setting-A Questionnaire Based Survey. *International Journal of Pharmaceutical Research (09752366)*. 2020.
20. Rajeswaran SA, Ramani P. Demographic Profiling of Patients with Leukoplakia Visiting a Dental Hospital in Chennai, India Institutional Study. *Journal of Pharmaceutical Research International*. 2021;33(64A):471-9.
21. Nigam H. Comparative Study of Candida and Its Species in Healthy Individuals, Smokers, Diabetic and Oral Submucous Fibrosis Patients: Rajiv Gandhi University of Health Sciences (India); 2018.
22. Lin F, Xiao T, Wang B, Wang L, Liu G, Wang R, et al. Mechanisms and markers of malignant transformation of oral submucous fibrosis. *Heliyon*. 2024.
23. Roza ALOC, Kowalski LP, William Jr WN, de Castro Jr G, Chaves ALF, Araújo ALD, et al. Oral leukoplakia and erythroplakia in young patients: a systematic review. *Oral surgery, oral medicine, oral pathology and oral radiology*. 2021;131(1):73-84.



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