

## Original Article

# Oral health-related quality of life in erosive/ulcerative oral lichen planus patients

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## ABSTRACT

**Background:** Oral lichen planus (OLP) is a chronic oral mucosal disease. It can manifest as severe erosive/ulcerative oral lesions, causing pain and discomfort. Oral health-related quality of life (OHRQoL) may be deteriorated due to the patient's symptoms. The aim of this study was to evaluate OHRQoL and its relation to oral pain in erosive/ulcerative OLP patients.

**Materials and Methods:** In this cross-sectional study, patients with erosive/ulcerative OLP filled out Chronic oral mucosal disease questionnaire (COMDQ). Meanwhile, they recorded their oral pain through Visual analog scale (VAS). The Pearson's correlation coefficient was used to analyze the relationship between COMDQ score and VAS (IBM SPSS Statistics).  $P < 0.05$  was considered statistically significant.

**Results:** Sixty patients participated in the present study; 51 (85%) were women and 9 (15%) were men. The mean age of participants was  $50 \pm 14.5$  years. The mean score of COMDQ was  $47.44 (\pm 18.21)$ . The mean VAS score was  $4.5 (\pm 2.4)$ . COMDQ total and all domain scores were significantly correlated with VAS ( $P < 0.05$ ), except for the "Patient support" domain ( $P = 0.63$ ).

**Conclusion:** In patients with erosive/ulcerative OLP, there was a significant correlation between oral pain and COMDQ total score, as well as its physical, social, and emotional domains. It seems that COMDQ can be a complementary tool for assessing treatment outcomes in OLP patients.

**Key Words:** Oral health, oral lichen planus, quality of life

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## INTRODUCTION

Oral lichen planus (OLP) is a chronic oral mucosal disease. It may manifest itself through several clinical forms, including reticular, popular, plaque-like, bullous, erythematous, and erosive/ulcerative.<sup>[1]</sup> The latter form of the disease (erosion/ulceration) bothers patients a lot, prompting them to seek treatments to get rid of oral pain, burning sensation, and discomfort.<sup>[2]</sup> Several modalities have been used to alleviate symptoms with miscellaneous success

rates.<sup>[3]</sup> Although clinical criteria have been developed to measure different treatment goals, subjective assessment tools may better demonstrate patient's feelings of treatment outcomes and the real impacts of disease condition on their quality of life.<sup>[4,5]</sup>

Oral health-related quality of life (OHRQoL) is the way oral health status and functions such as eating, speech, esthetics, and social interaction influence one's daily life.<sup>[6,7]</sup> It is mainly tested through patient-centered

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questionnaires in two major categories: general and disease-specific.<sup>[8]</sup> General OHRQoL questionnaires can be used to assess OHRQoL in patients with different oral conditions, and therefore they provide clinicians with remedies to compare OHRQoL between diseases. Meanwhile, although used with more limitations, disease-specific questionnaires can more accurately value the impact of a specific oral disorder on a patient's daily performance.<sup>[9,10]</sup> The high specificity of such questionnaires has resulted in their favorable use in the subjective evaluation of patient treatment needs.<sup>[11]</sup>

Chronic oral mucosal disease questionnaire (COMDQ) is developed for measuring OHRQoL in chronic conditions affecting oral mucosa.<sup>[11]</sup> Wiriyakijja *et al.* utilized COMDQ in OLP patients and concluded that it was an advantageous tool in subjectively assessing the impact of OLP on patient's quality of life.<sup>[9-11]</sup> Of course, the clinical properties of OLP might directly influence patient's physical, social, and emotional well-being, especially in patients with erosive/ulcerative form of the disease.<sup>[12]</sup>

Whereas clinicians usually measure OLP severity by classic clinical criteria such as lesion extension, pain, and healing time,<sup>[13]</sup> subjective measurement of the disease impact on patient's quality of life might better depict the real severity of erosive/ulcerative OLP.<sup>[14]</sup> However, the relationship between the aforementioned clinical and subjective criteria is still not fully known,<sup>[15]</sup> and its evaluation may guide clinicians in providing OLP patients with best possible quality of life, as the final goal for every oral therapy.<sup>[2]</sup> The present study was conducted to measure OHRQoL in erosive/ulcerative OLP patients and investigate its relationship with oral pain experienced by them.

## MATERIALS AND METHODS

This cross-sectional study was approved in research and ethics committee of Isfahan (NO:398840).

### Patients

Patients with a confirmed clinicopathologic diagnosis of erosive/ulcerative OLP<sup>[16]</sup> participated in this study from September 2019 to September 2020. They were all referred to the oral medicine department, School of Dentistry, Isfahan University of Medical Sciences, Isfahan, Iran. The sample size was estimated using 80% power and 95% confidence interval, and participants entered the study by simple sampling method. The inclusion criteria were literacy and a

confirmed diagnosis of erosive/ulcerative OLP. The exclusion criteria were being illiterate and diagnosis of other oral lesions.

### Clinical examination and visual analog scale

Patients were examined on a dental chair under the light of a dental unit. Through a dental mirror, all parts of the oral cavity were examined carefully to inspect the presence of erosive/ulcerative OLP and the absence of any other oral lesions. Afterward, patients pointed the severity of their oral pain on a Visual analog scale (VAS) line, degreed from 0 (no pain) to 10 (most severe pain), in 1 cm interval. Meanwhile, the patient's age, gender, and disease duration since its onset (<3 months, 3–6 months, 6–12 months, and >12 months) were recorded and attached to their VAS form.

### Oral health-related quality of life

Patients filled out COMDQ to assess OHRQoL. Reliability and validity of the Persian-translated version of the questionnaire have been proved by Shirzad *et al.*<sup>[17]</sup> The questionnaire consists of 26 items in 4 domains: pain and functional limitation (9 items), medication and treatment (6 items), social and emotional (7 items), and patient support (4 items). Each item is answered through a 5-point Likert scale of frequency, from never (0 points) to very much (4 points). Therefore, the total COMDQ score ranges from 0–104, with higher scores indicating lower OHRQoL. Total and each domain score was calculated for all patients.

### Ethical considerations

This study was conducted at Isfahan University of Medical Sciences and approved by the local Ethics committee (Ethical Code: IR.MUI.RESEARCH.REC.1398.751). All participants received study information and signed written informed consent form as well. The planned treatment for the patient was irrespective to his/her participation in the present study.

### Statistical analysis

Statistical Package for Social Sciences (SPSS, IBM version 22.0, Chicago, USA), was used to analyze the data. The mean and standard deviation of COMDQ total and domain scores were reported. The Pearson's correlation coefficient was used to assess the correlation between COMDQ total/domain scores and VAS, age, and disease duration. *T*-test was utilized to analyze the relation between gender and COMDQ total, domain scores, and VAS. Statistical values were considered statistically significant when  $P < 0.05$ .

## RESULTS

Sixty patients participated in the present study; 51 (85%) women and 9 (15%) men. The mean age of participants was  $50 \pm 14.5$  years. The mean VAS score was  $4.5 (\pm 2.4)$ . Figure 1 shows the frequency of disease duration periods.

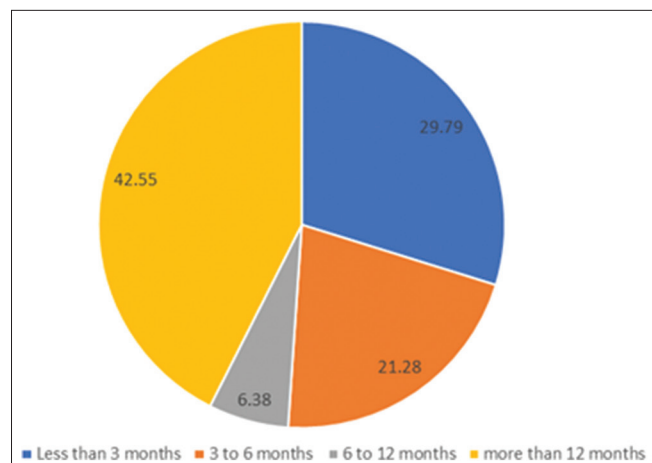
Table 1 shows the mean COMDQ total and domain scores and their correlation with VAS. The Pearson's correlation test showed a significant association between COMDQ total and domain scores and VAS ( $P < 0.05$ ), except for the domain patient support ( $P = 0.63$ ) [Table 1]. It also proved that there was no significant relation between COMDQ total score and age ( $P = 0.17$ ) or disease duration ( $P = 0.11$ ).

T-test showed that the COMDQ total and domain scores do not differ between men and women ( $P > 0.05$ ), except for the domain "pain and functional limitation" ( $P = 0.02$ ) [Table 2]. Besides, it also proved that the mean VAS score in women ( $4.8 \pm 2.2$ ) is significantly more than in men ( $2.4 \pm 2.5$ ) ( $P = 0.007$ ).

## DISCUSSION

OLP is a chronic oral mucosal disease with a range of clinical presentations, from pure keratotic white striae in asymptomatic patients to severe ulcerative lesions devastating oral mucosa and its functions such as eating, talking, and socializing.<sup>[9,10]</sup> Such annoyance might ruin one's quality of life in several aspects regarding the way the disease impacts his/her daily routines.<sup>[8]</sup>

OLP is far more common in women than men,<sup>[3]</sup> though it is not surprising that the majority of patients in the present study are female. Women



**Figure 1:** Frequency of disease duration periods (percent).

have experienced more pain in their mouth due to the disease ( $P = 0.007$ ) and more impact on the quality of life just regarding the domain "pain and functional limitation" ( $P = 0.02$ ). Fädler *et al.* found poor OHRQoL in erosive/ulcerative OLP patients, as well as worsening conditions in women than men.<sup>[18]</sup> Furthermore, Karbach *et al.* reported lower OHRQoL in women with erosive/ulcerative OLP, in comparison to men with OLP or patients suffering from other oral mucosal diseases such as leukoplakia or squamous cell carcinoma.<sup>[19]</sup> It seems that although total or other domains of OHRQoL were not different gender-wise, COMDQ was able to show such a difference in the exactly relevant domain.

COMDQ seems to be a means coordinate with clinical objective measurements of the patient's pain and functional capabilities of the oral mucosa. Of course, COMDQ has been developed to specifically measure OHRQoL in chronic oral mucosal conditions,<sup>[17]</sup> and the present study confirms its validity in this regard. Two studies were conducted by Wiriyakijja *et al.*, who reported COMDQ to be better than Oral Health Impact Profile 14 (OHIP-14) at evaluating the relationship between pain and OHRQoL in patients with OLP, confirm similar explanations.<sup>[8,9]</sup>

In the present study, total and three domain (pain and functional limitation, medication and treatment, and social and emotional) scores of COMDQ were

**Table 1: Total and domain scores of chronic oral mucosal disease questionnaire and their relation to Visual Analog Scale score**

Domain	Score $\pm$ SD	P	Pearson r
Pain and functional limitation	15.71 $\pm$ 7.27	<0.001	0.51
Medication and treatment	11.95 $\pm$ 7.85	<0.001	0.50
Social and emotional	13.88 $\pm$ 7.04	0.03	0.27
Patient support	5.90 $\pm$ 3.38	0.63	-0.06
Total	47.44 $\pm$ 18.21	<0.001	0.51

SD: Standard deviation, COMDQ: Chronic Oral Mucosal Disease Questionnaire, VAS: Visual Analog Scale

**Table 2: Total and domain scores of chronic oral mucosal disease questionnaire in both genders**

Domain	Score $\pm$ SD		P
	Men	Women	
Pain and functional limitation	10.25 $\pm$ 7.28	16.50 $\pm$ 7.03	0.02
Medication and treatment	11.25 $\pm$ 7.85	12.06 $\pm$ 7.99	0.77
Social and emotional	10.38 $\pm$ 8.14	14.42 $\pm$ 6.83	0.12
Patient support	7.50 $\pm$ 4.03	5.56 $\pm$ 3.16	0.13
Total	39.38 $\pm$ 23.2	48.54 $\pm$ 17.41	0.19

SD: Standard deviation, COMDQ: Chronic oral mucosal disease questionnaire

correlated with oral pain score ( $P < 0.05$ ). Same as our findings, Daume *et al.* reported low OHRQoL in erosive/ulcerative OLP, especially in physical, social, and psychological domains. They also concluded that oral pain score is correlated with OHRQoL.<sup>[20]</sup> Gabriella *et al.* depicted the influence of pain severity on exacerbating physical and psychosocial dimensions of OHRQoL<sup>[21]</sup> and other studies have found a meaningful relationship between oral pain and OHRQoL in OLP patients too, in accordance with our results.<sup>[22,23]</sup>

In the present study, oral pain score was directly correlated with the medication aspect of COMDQ. In other words, patients with more pain had trouble seeking enough qualitative or quantitative medications to alleviate their pain in a way that does not affect their quality of life. Social insurance shortages seem to negatively impact patients' lives by inability to provide perfect service. Many socioeconomic factors dealing with health policies might have an influence, which cannot be discussed here in detail. Karbach *et al.* reported better social OHRQoL in OLP rather than leukoplakia or SCC patients,<sup>[19]</sup> which may reflect the important role of social support in improving OHRQoL in OLP patients in comparison to other oral mucosal diseases.

The present study showed that patients with more oral pain have experienced more offensive matters regarding their social/emotional environment. In fact, they have felt a lack of sufficient participation in social activities, as well as insufficient emotional expression, due to their oral pain. These aspects of life quality are in line with psychological wellness.<sup>[24,25]</sup> Psychological support for patients suffering from oral health problems might be influenced by several cultural factors, such as the phobia to be nicknamed "insane" or "mad" while seeking for psychological services. However, studies focusing on psychological indices in OLP patients may reveal such factors more precisely.

The present study found no correlation between oral pain and the patient support domain of COMDQ. Optimistically, the Persian society might have supported patients in a way that helps all patients relieve their requirements in this field. On the other hand, the patient support might have been always short and irrespective to oral pain severity. Of note, the present study was carried out under the limitations of a cross-sectional study and therefore cannot discover the cause-effect relationships between its variables.

This study has not investigated many OLP clinical factors, rather than oral pain, that might have confounded the results by influencing the COMDQ score. Future studies could investigate the correlation between COMDQ score and parameters such as oral lesion size or quantity in erosive/ulcerative OLP patients. Furthermore, it is recommended to evaluate the COMDQ score in other chronic oral mucosal diseases to compare it between miscellaneous oral conditions.

## CONCLUSION

It seems that oral pain can negatively impact OHRQoL in erosive/ulcerative OLP, especially regarding domains pain and functional limitation, medication and treatment, and social/emotional. Relieving oral pain seems mandatory to improve OHRQoL in these patients. The COMDQ proved to be a valuable means to assess OHRQoL in OLP patients.

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### Conflicts of interest

The authors of this manuscript declare that they have no conflicts of interest, real or perceived, financial or nonfinancial in this article.

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