

# Comparison between burning mouth syndrome patients with and without psychological problems

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**Abstract.** The purpose of this study was to compare clinical and socio-demographic characteristics between burning mouth syndrome (BMS) patients with and without psychological problems. Of 644 patients with symptoms of oral burning, 224 with primary BMS were selected on the basis of laboratory testing, medical history, and psychometric tests: 39 with psychological problems (age  $62.5 \pm 11.5$  years) and 185 without psychological problems (age  $58.4 \pm 11.4$  years). Comprehensive clinical and socio-demographic characteristics, including psychological profiles and salivary flow rates, were compared between the two groups. No significant difference in sex ratio, duration and diurnal pattern of symptoms, unstimulated whole saliva flow rate, or marital status was found between the groups. The patients with psychological problems had a significantly higher mean age, reduced stimulated whole saliva flow rate, and lower level of education than those without psychological problems. The patients with psychological problems also displayed higher rates and greater severity of various types of BMS-related symptom in most parts of the oral mucosa, higher rates of stress-related symptoms, and greater difficulties in daily activities. The severity of taste disturbance was the factor most significantly correlated with the level of psychometry. In conclusion, psychological problems in BMS patients are associated with an aggravation of BMS symptoms.

**Key words:** burning mouth syndrome; psychological problem.

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Burning mouth syndrome (BMS) is a chronic orofacial pain disorder characterized by persistent burning pain or other dysesthesia in the oral cavity, without abnormal oral mucosal findings<sup>1</sup>. Various symptoms can appear simultaneously in

BMS patients. In particular, the burning pain often accompanies xerostomia and altered taste<sup>2</sup>. As different diagnostic criteria have been applied in BMS, the epidemiological data for this syndrome are inconsistent. In general, BMS most

commonly occurs in middle-aged and elderly women, and the prevalence is estimated to range from 0.7% to 4.6% in the general population<sup>2</sup>. It has been reported that multiple local and/or systemic factors are associated with the development of

oral burning sensation<sup>1,2</sup>. BMS may be the final diagnosis once all etiological factors have been excluded by clinical and laboratory examinations, and it has been suggested that peripheral and/or central neuropathies are involved<sup>2,3</sup>.

Previous studies have shown a higher prevalence of psychological problems in BMS patients than in normal control subjects<sup>4-8</sup>. The most common psychological problems in BMS patients are anxiety, depression, cancer phobia, and hypochondriasis<sup>4-7</sup>. Psychiatric comorbidity in BMS patients is comparable to that in patients with other chronic pain disorders. It could thus be hypothesized that persistent chronic pain and a repetitive history of treatment failure over the years may result in the development of psychological problems. However, BMS patients have been found to report stressful life events more frequently than normal control subjects<sup>4,5,9</sup>, and the onset of psychological disorders has been shown to precede the occurrence of BMS symptoms<sup>10</sup>. In addition, psychogenic factors could lead to neurodegenerative alterations through the steroid dysregulation pathway<sup>11</sup>. These findings suggest that psychological disorders may play a key role in the development of BMS. However, whether the psychological problems are a cause or effect of BMS remains unclear.

Previous studies have shown psychological disorders to have close relationships with various BMS symptoms. Therefore, it could be hypothesized that BMS patients with psychological problems have distinct clinical characteristics compared to those without psychological problems. Indeed, BMS patients who have burning pain associated with central neuropathy tend to have more psychiatric problems<sup>12</sup>. The prescription of topical lubricant and clonazepam is less helpful in BMS patients with psychological distress<sup>12-14</sup>. Despite these findings, no comparative studies on the characteristics of BMS patients according to the presence or absence of psychological problems have been conducted.

This study analyzed and compared clinical and socio-demographic characteristics between BMS patients with psychological problems and those without. The relationships between psychological problems and clinical features of BMS patients were also investigated.

## Materials and methods

### Participants

A total of 644 patients who visited the Department of Oral Medicine, Seoul National University Dental Hospital with a

complaint of burning pain or other discomfort in the oral cavity without any observable oral lesions, between January 1, 2006 and December 31, 2014, were included. All of these patients underwent comprehensive clinical examination procedures, including an oral examination, interview, radiographic examination (panoramic radiograph), simplified psychological evaluation (Symptom Checklist-90-Revised, SCL-90-R<sup>15</sup>), laboratory tests, and measurement of the whole saliva flow rate. All patients also received a BMS questionnaire. The evaluations were performed by one doctor (HSK) in all cases. This retrospective chart review study was approved by the Institutional Review Board of Seoul National University Dental

Hospital. The Institutional Review Board authorized an exemption from the need to obtain informed consent from the subjects.

### BMS questionnaire

A questionnaire was used to evaluate clinical and socio-demographic characteristics. The questionnaire included questions about factors related to the onset of oral symptoms (initiating factors), treatments received to relieve the oral symptoms, duration of suffering, distribution (unilateral or bilateral type) and area, and diurnal pattern of oral symptoms. The intensity of each type of symptom (burning, aching, stinging, itching, numbness, bad taste, taste alteration, xerosto-

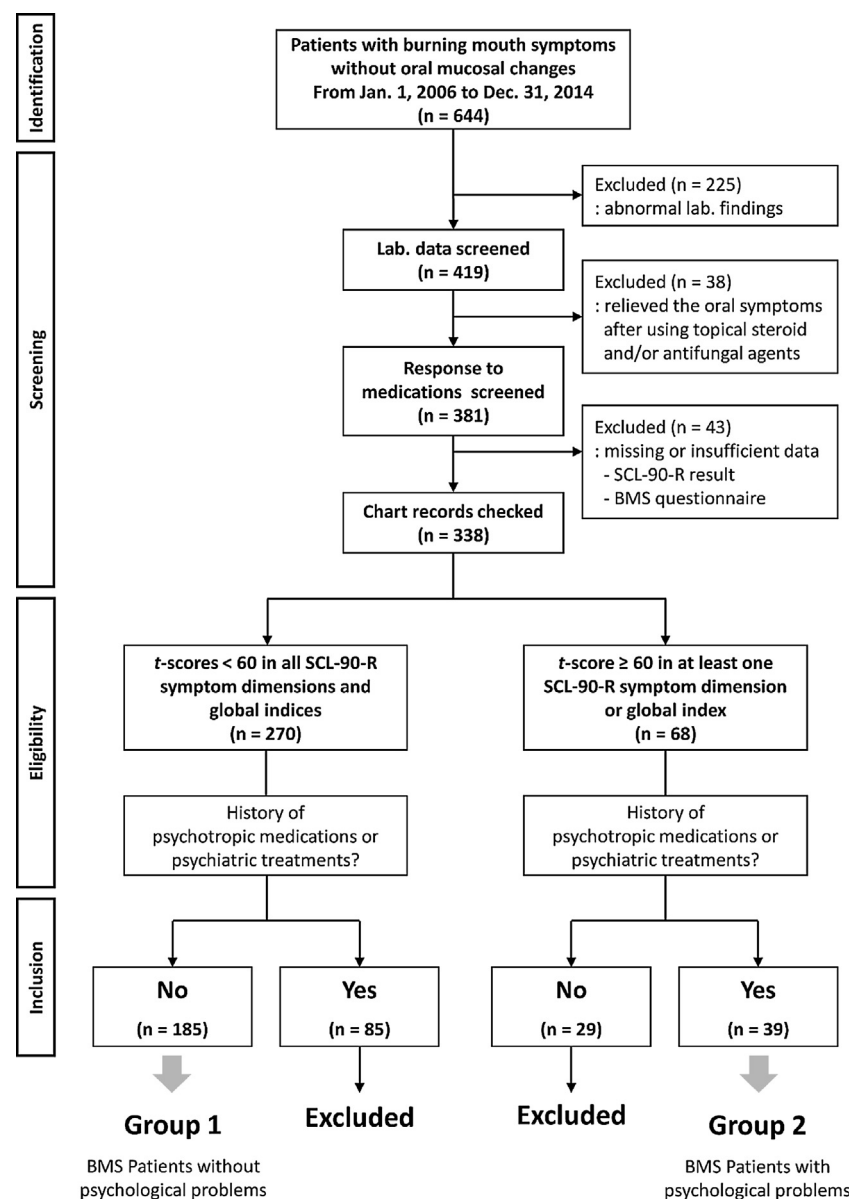


Fig. 1. Flow diagram of the patient screening and selection process.

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