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Treatment of temporomandibular joint disorder with traditional Chinese medicine under the national health insurance system in Taiwan

KEYWORDS

Temporomandibular joint disorder;
Traditional Chinese medicine;
Acupuncture

The symptoms and etiologies of temporomandibular joint disorder (TMD) are notably varied. TMD can be broadly categorized into myofascial causes, involving the masticatory muscles, neck and shoulder muscles, and muscles surrounding the cervical spine and their associated fasciae, and articular causes, including articular bones, articular discs, joint ligaments, and adjacent tissues. The prevalence of TMD in adults is approximately 10 %, with a higher incidence in females, as indicated by a male-to-female ratio of 1:4, and it is most commonly observed in individuals aged 20–40 years. Among the symptoms, muscle pain is predominant, and myofascial pain syndrome is also one of the important causes of pain.^{1–3} In addition to the symptoms and pain, TMD is typically characterized by clicking or snapping sounds during mouth opening or mastication, and mouth opening may be restricted due to myofascial pain. Furthermore, as the trigeminal nerve traverses the temporomandibular joint area, TMD is frequently accompanied by headaches, earaches, tinnitus, shoulder and neck pain, and facial paresthesia.

Since 1995, Taiwan has implemented the National Health Insurance (NHI) system, offering comprehensive medical coverage for various treatments, including Western medicine, traditional Chinese medicine (TCM), and dentistry. Given the accessibility of medical care in Taiwan and the

diverse symptoms of TMD, patients may seek assistance from physicians, TCM physicians, or dentists. In recent years, there has been a growing interest in TCM. This study aimed to utilize the NHI database to analyze the patterns of TMD patients seeking TCM for management in 2021.

According to statistics published by the Ministry of Health and Welfare, Taiwan, in 2021, the number of individuals utilizing TCM services in either primary clinics or hospitals was 5,516,638, with 60 % of these users being female (Fig. 1A). Utilizing the ICD-10-CM codes K00-K14, M26, and M27, it was determined that 136,262 patients with dentistry-related conditions sought TCM, representing 2.5 % of the total TCM user population. Among these dentistry-related patients, the proportion of females (64 %) was slightly higher than that observed in the overall TCM user population (Fig. 1B). Patients diagnosed with the code M26.6 were further classified as having TMD. There were 2408 TMD patients identified, constituting 1.8 % of those seeking TCM for treatment of dentistry-related conditions. The percentage of female TMD patients utilizing TCM was 65 % (Fig. 1C).

Among these TMD patients, there were 1569 (65 %) patients receiving TCM treatment and 839 (35 %) patients receiving TCM medication (or no treatment) (Fig. 1D). The TCM medication for TMD mainly consists of oral Chinese

<https://doi.org/10.1016/j.jds.2025.06.012>

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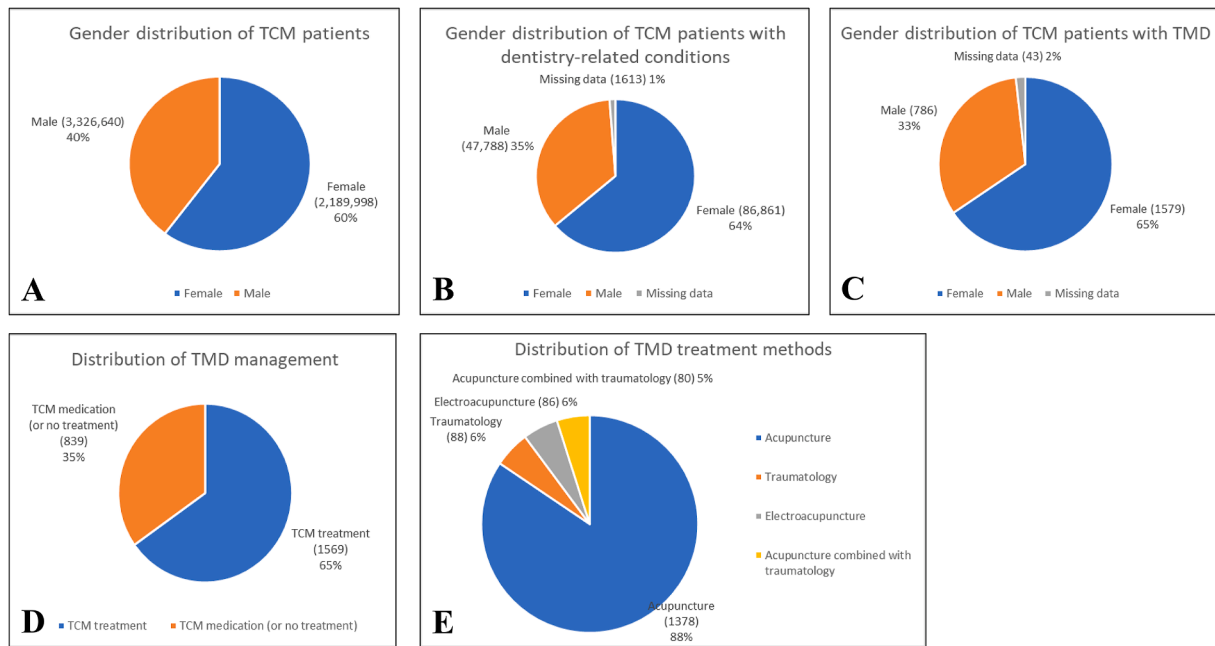


Figure 1 Treatment of temporomandibular joint disorder (TMD) with traditional Chinese medicine (TCM) under the national health insurance (NHI) system in Taiwan in 2021. (A) Gender distribution of TCM patients. (B) Gender distribution of TCM patients with dentistry-related conditions. (C) Gender distribution of TCM patients with TMD. (D) Distribution of TMD management. (E) Distribution of TMD treatment methods. It should be noted that this study had a few missing data on gender item. In addition, if a patient had received two treatment methods, both methods would be counted once.

medicine to relieve myofascial pain, while the TCM treatment for TMD includes acupuncture, traumatology, and electroacupuncture. Among those receiving TCM treatment, the majority were treated by acupuncture (1378, 88 %), followed by traumatology (88, 6 %), electroacupuncture (86, 6 %), and acupuncture combined with traumatology (80, 5 %) (Fig. 1E). The traumatology treatment for TMD is usually mild massage therapy, while the electroacupuncture therapy is to enhance the stimulation effect of acupuncture by applying a trace current at the same time for acupuncture to achieve the purpose of curing diseases or relieving myofascial pain.

In this study, the results showed that some patients with oral and facial pain or problems in Taiwan did seek assistance from TCM treatment, and TCM physicians diagnosed these patients as dentistry-related diseases. Even these patients only accounted for 2.5 % of TCM patients. Among those diagnosed with TMD, the male-to-female ratio was about 1:2. The TCM physicians adopted more active treatment strategies for them, and more than 90 % of patients received acupuncture-related treatment.

Acupuncture has been shown to have a good therapeutic effect on TMD. Acupuncture treatment can effectively relieve toothache and pain caused by TMD, indicating that acupuncture can be used as an alternative or auxiliary treatment to Western medicine.^{4,5} However, the causes of TMD are complex, the symptoms are diverse, and there are various treatment methods. For patients with TMD, acupuncture is one of the treatment options. In clinical practice, it is still necessary to combine detailed medical history, physical examination, imaging examination, and physical and mental assessment

when necessary to identify the cause of TMD and plan an appropriate treatment. However, those complex TMD cases requiring surgical treatment still need to return to the relevant dental specialists for evaluation and further treatment.

Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

Acknowledgments

The study received approval from the Joint Institute Review Board (23-S-004-1), and was funded by the National Research Institute of Chinese Medicine, Ministry of Health and Welfare, Taiwan (Grant number: 112T26-03).

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Received 9 June 2025
Available online 24 June 2025

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