

Sex, Gender, and Orofacial Pain

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KEYWORDS

• Gender • Orofacial pain • Pain perception • Pain modulation • Pain threshold

KEY POINTS

- The female gender has a higher prevalence for almost all pain problems affecting the head, neck, and orofacial pain regions. Trigeminal autonomic cephalalgias and glossopharyngeal neuralgias are exceptions.
- Gender differences in pain thresholds, temporal summation, pain expectations, and somatic awareness exist in patients with chronic temporomandibular disorders (TMD) or orofacial pain.
- Genetic studies indicate that the genetic contribution to the development of TMD and orofacial pain is a small part of the overall risk for these disorders. However, female gender is the most significant risk factor.
- Future research needs to elucidate the sex effects on factors that protect against developing pain or prevent pain from becoming debilitating.
- Specific gender-based treatments for TMD and orofacial pain treatment will evolve from translational research, providing a better understanding of the gender differences in pain modulation and perception.

INTRODUCTION

Orofacial pain is a broad term that comprises multiple painful conditions affecting the oral, head, face, and neck area. Such conditions can involve different structures and be derived from musculoskeletal, vascular, neurovascular, neuropathic, idiopathic, and psychogenic origins.¹ They are very often associated with complex signs and symptoms, which in turn represent a challenge to establish the differential diagnosis

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and the following treatment. Multiple diagnoses are commonly observed in individuals with orofacial pain. Thus, understanding the most common types of pain affecting the orofacial region, as well as their clinical presentation and prevalence in the general population, will assist the clinician to arrive at the most definitive diagnosis.

Evidence shows that painful conditions in the oral and maxillofacial region are relatively common, affecting approximately 10% to 26% of the adult population.^{2,3} Several studies demonstrated that such conditions, including but not limited to temporomandibular disorders (TMD), primary headaches, and neuropathic conditions, are highly predominant in women.²⁻⁵ It has also been reported that women seek treatment more often than men with an approximate 2:1 ratio.^{4,5} In addition, it is widely believed that pain in general affects men and women differently due to a variety of factors, which must be taken into account during the clinical assessment and treatment.

EPIDEMIOLOGY OF OROFACIAL PAIN

Temporomandibular Disorders

TMD is reported as the most prevalent type of chronic orofacial pain. It comprises a variety of conditions that can affect temporomandibular joints (TMJ), facial, head, and cervical structures. It involves TMJ sounds and restricted jaw movements.⁶ Pain in the masticatory musculature is reported by most TMD patients, significantly impairing jaw function.⁴ Evidence has shown that TMD is highly prevalent in adulthood, affecting 5% to 12% of the population,⁷ and is approximately 3 times more common in women than in men.⁸⁻¹⁰ With regards to the TMD subgroups, masticatory myofascial pain disorders are reported in about 45.3% of the TMD patients, followed by disc displacement (41.1%) and other joint disorders (30.1%), with TMJ arthralgia occurring in about 34.2% of the subjects.¹⁰ In addition, there is a high predilection for female gender in all subgroups of TMD, especially those of muscular origin.¹¹⁻¹³ Interestingly, most patients suffering from these disorders often report pain involving other structures, such as in the cervical and head regions. Therefore, because gender does affect the presentation of TMDs, it is imperative to also understand the gender disparity among cervical and headache disorders.

Cervicalgia and Cervicogenic Headache

Cervicalgia is a broad term that refers to pain in the neck region, which is highly prevalent in the world population, with an estimate range from 16.7% to 75.1%.¹⁴ The prevalence of neck pain increases proportionally with age, affecting 27.2% of women and 17.4% of men.¹⁵ Neck pain may be related to any cervical structure; however, most often the discomfort is present in the suboccipital, sternocleidomastoid, and trapezius muscles with a common referred pain to other areas, including frontal, temporoparietal, occipital, vertex, and orbital regions. In addition, cervical pain is very often associated with cervicogenic headaches,¹⁶ which are estimated to affect 0.4% to 2.5% of the general population and about 15% to 20% of subjects with chronic headaches. Equally, women, with a female-to-male ratio of 4:1, more often report this condition.¹⁷

Headache Attributed to Giant Cell Arteritis

Giant cell arteritis (GCA) is the most common primary systemic vasculitis,¹⁸ characterized by several important manifestations, including headache, fever, polymyalgia rheumatica, and visual disturbances.¹⁹ In addition, patients with this condition

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