

# Physiotherapy's Usefulness in the Treatment of the Temporomandibular Joint

Dawson Finnegan\*

Department of Human Movement Sciences, Federal University of Sao Paulo, Butanta, Brazil

## Introduction

A diverse group of conditions affecting the temporomandibular joints (TMJs) and periarticular musculoskeletal structures are known as temporomandibular dysfunctions. The purpose of this study was to determine how well a physiotherapy program for TMJ dysfunctions worked and how it related to the cervical spine. There were two parallel treatment groups in the non-randomized clinical trial design of the study: There were 33 people in the experimental group who received both conservative drug treatment and physiotherapy, while 31 people in the control group only received conservative drug treatment. The participants were examined at the beginning of the study and again three months later. There were more female participants in this study. Both groups reported less pain after three months of TMJ and cervical spine treatment ( $p=0.001$ ). A decrease in pain and muscle spasms was observed during muscle testing at the cervical spine and temporomandibular level. In both groups, but especially in the experimental group, the average percentage values of the Neck Disability Index (NDI) and the Jaw Functional Limitation Scale 8 (JFLS 8) decreased significantly ( $p=0.001$ ). The functional state at the temporomandibular and cervical levels could be maintained through physiotherapy treatments, thereby improving daily life quality.

## Description

A diverse group of conditions affecting the temporomandibular joints (TMJs) and periarticular musculoskeletal structures are known as temporomandibular dysfunctions (TMDs). A frequent pathology affects the temporomandibular morpho-functional complex, resulting in discomfort, disability and diminished quality of life. The mandible is the primary morphological component of facial movements in TMJ dysfunction. As a result, it could begin on its own, but the mandibular dynamics could cause the involvement to spread to the entire orofacial region. Over 450 million people worldwide suffer from chronic facial pain, with men accounting for 6% and women for 10%. The prevalence rises with age, particularly after the age of 40.

Musculoskeletal disorders that can result in significant disability in the general population include cervical spine disorders.

Literature indicates that approximately 30% of men and 43% of women have experienced neck pain at some point in their lives and that the severity of the pain increases with age [1].

Stiesch-Scholz looked into whether patients with temporomandibular disorders (TMDs) had cervical spine dysfunctions. The findings revealed a

greater restriction in cervical rotation, flexion and extension, joint facets and suboccipital hypomobility and muscular sensitivity at the cervical, dorsal and shoulder levels. The mandibular condyle presses back against the meniscal tissue in a stress-related posture, resulting in inflammation, pain and the meniscal tissue's gradual degeneration.

The trigeminal nerve innervates the afferent muscles and TMJ. As a result, TMD pain might be compared to a headache. The spinal nerves C2–C7 innervate the occipital region and the back of the neck. The complex cervical trigeminal is the result of convergence between the superior cervical spinal nerves and the trigeminal nucleus. The pain caused by TMJ dysfunction or cervical dysfunction may initially manifest only in the peripheral areas, but it may eventually spread to the central area as well.

The masticatory system and posture are involved in the neuroanatomical and neurophysiological connections that exist between the orofacial region and the cervical spine. According to this connection, functional changes at the orofacial level during mouth opening, chewing and swallowing are caused by cervical posture disorders. Dentists and physical therapists may be able to treat pain and dysfunctions at this level with much greater success if they are aware of the connection and pathology that exists between TMJs and the cervical spine. Manual therapy, exercises and physical procedures are all part of physiotherapy, a non-invasive treatment for TMJ and cervical spine pain. An essential component of treatment that reduces pain, improves TMJ and cervical spine functions and raises quality of life is TMD-specific rehabilitation. One of the treatments that could help prevent pain and degenerative changes in the musculoskeletal system is physiotherapy [2].

By using a specific treatment for three months, the purpose of this study was to highlight the role of physiotherapy in the treatment of TMJ dysfunctions and its connection to the cervical spine. TMD can occur at any age and affects the entire body, particularly the function of the cervical spine. Over 65% of the women in this study had TMDs, which are more common in women. According to a 2008 study by Landi, hormonal changes after a certain age are to blame for women's increased dysfunction. As a result, female gender is a good indicator of when physiotherapy will be started. The VAS's estimation of pain intensity may be affected by the duration of orofacial pain, with short-term pain being overestimated and long-term pain being underestimated. The perception of clinical signs and response to treatment are influenced by TMJ pain and pain in the cervical spine joints [3].

The upper cervical spine and the craniomandibular region are anatomically, biomechanically and neurophysiologically related, according to evidence. Upper cervical pain is experienced in any orofacial region innervated by the trigeminal nerve and pain in any orofacial structure innervated by the trigeminal nerve is experienced in the cervical regions innervated by upper cervical nerves due to the convergence of the orofacial and cervical regions in the trigeminocervical nucleus. The trigeminal cervical nucleus integrates the pain that originates and persists in the orofacial or cervical regions before sending it to the superior centers, where it is modulated by descending mechanisms. The masticatory and cervical muscles motor activity shifts as a result of this phenomenon. Patients with TMD may experience masticatory and cervical dysfunction as a result of these changes. The results presented for TMD and spine pain are consistent with those obtained in this study. The creators uncovered solid comorbidity between these two circumstances, recommending that they might share risk factors and impact one another.

By adopting analgesic positions and altering body posture, orofacial pain

\*Address for Correspondence: Dawson Finnegan, Department of Human Movement Sciences, Federal University of Sao Paulo, Butanta, Brazil; E-mail: finneganawson@gmail.com

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results in both local and general functional changes. To help improve the functioning of the craniocervical system and reduce the vulnerability of the cervical spine, physiotherapists working with TMD patients need to be able to identify and treat these deficiencies earlier. The muscles of the mouth and neck are affected by TMD. In both groups, myalgia in the cervical muscles (sternocleidomastoid, upper trapezius and splenius of the head and neck) went down, with a big drop in the group that also got physiotherapy. Orofacial muscles may also bear witness to this finding: masseter, temporalis and internal and external pterygoid, thereby restoring the mandibles physiological functionality. Other studies highlighted aspects of the progression of pain in the cervical and orofacial muscles following manual therapy and physiotherapy [4].

As a result of its asymmetrical nature, TMD can have a negative impact not only on mastication, swallowing and breathing but also on the amplitude of movement in various regions of the spine (the cervical area in the transverse plane, the thoracic area in the sagittal plane and the lumbar area in the frontal plane), resulting in alterations in both the upper and lower limbs.

Through exercise, balancing TMJs improves the dysfunctions and shifts the center of gravity, affecting the mobility of the spine and the stability of the limbs. The cervical spine, posture and TMJ movements are all directly correlated. Systematic evaluation of the functional relationships between the two regions is required [5].

## Conclusion

The findings are consistent with those of Wänman A and Marklund S, who demonstrated that physiotherapy-treated patients experienced significant improvements in pain and jaw function. Reduced pain and orofacial muscle spasm, increased range of motion and improved local functionality were the primary outcomes of physiotherapy. Based on the type of disorder and its

stage, physiotherapeutic treatment aims to reduce existing symptoms through general and local treatments. In recent years, significant progress has been made, with rehabilitation of these patients being a major concern, resulting in a significant reduction in morbidity. In the event of an existing condition in one of the two areas, this study demonstrated that physiotherapy treatments for the temporomandibular and cervical areas are effective. Through neuroanatomical and neurophysiological structures, the relationships between the TMJs and cervical spine are interconnected. The presence of an illness in one of the two regions impacts the shared symptomatology. Symptoms at the temporomandibular and cervical levels were significantly reduced by physiotherapeutic treatments applied to both areas over a three-month period.

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