

The Benefits of Physiotherapy for the Healing of Temporomandibular Joint

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Introduction

Temporomandibular dysfunctions are a diverse group of conditions that affect the temporomandibular joints (TMJs) and periarticular musculoskeletal structures. The goal of this study was to find out how well and how it related to the cervical spine a physiotherapy program for TMJ dysfunctions worked. The study's non-randomized clinical trial design included two parallel treatment groups: While 31 people in the control group only received conservative drug treatment, 33 people in the experimental group received both physiotherapy and conservative drug treatment. At the beginning of the study and three months later, the participants were examined once more. This study had a larger number of female participants. After three months of TMJ and cervical spine treatment, both groups reported less pain ($p=0.001$). During muscle testing at the cervical spine and temporomandibular level, pain and muscle spasms decreased. The average percentage values of the Neck Disability Index (NDI) and the Jaw Functional Limitation Scale 8 (JFLS 8) significantly decreased in both groups, but especially in the experimental group ($p=0.001$). Through physiotherapy, the functional state at the temporomandibular and cervical levels could be maintained, enhancing the quality of daily life.

Description

Temporomandibular dysfunctions (TMDs) are a diverse group of conditions that affect the temporomandibular joints (TMJs) and periarticular musculoskeletal structures. The temporomandibular morpho-functional complex is frequently affected by a condition that causes discomfort, disability, and reduced quality of life. The primary morphological component of facial movements in TMJ dysfunction is the mandible. So, it could start on its own, but the mandibular dynamics could spread the involvement to the entire orofacial region. Men account for 6% and women for 10% of the world's over 450 million people who suffer from chronic facial pain. The prevalence goes up with age, especially after 40. Cervical spine disorders are examples of musculoskeletal conditions that can lead to significant disability in the general population. According to the literature, 30% of men and 43% of women have experienced neck pain at some point in their lives, and the pain gets worse as you get older.

Stiesch-Scholz investigated the possibility that patients with temporomandibular disorders (TMDs) also had dysfunctions in the cervical spine. At the cervical, dorsal, and shoulder levels, the findings revealed a greater restriction in cervical rotation, flexion and extension, joint facets, suboccipital hypomobility, and muscular sensitivity. In a stress-related posture, the mandibular condyle presses back against the meniscal tissue, causing pain, inflammation, and the meniscal tissue's gradual degeneration. The afferent muscles and TMJ are innervated by the trigeminal nerve. TMD pain may therefore be compared to a headache. The occipital region and the back of the neck are innervated by the spinal nerves C2–C7. The convergence of the superior cervical spinal nerves and

the trigeminal nucleus results in the complex cervical trigeminal. TMJ dysfunction or cervical dysfunction may initially only affect the peripheral areas of the body, but over time, it may also affect the central area.

The neuroanatomical and neurophysiological connections that exist between the orofacial region and the cervical spine are influenced by posture as well as the masticatory system. Because of this connection, cervical posture disorders are responsible for functional changes at the orofacial level during mouth opening, chewing, and swallowing. If dentists and physical therapists are aware of the connection and pathology that exists between TMJs and the cervical spine, they may be able to treat pain and dysfunctions at this level with much greater success. Physiotherapy is a non-surgical treatment for TMJ and cervical spine pain that includes manual therapy, exercises, and physical procedures. TMJ- and cervical spine-specific rehabilitation is an essential part of treatment that improves quality of life, reduces pain, and improves TMJ and cervical spine functions. Physiotherapy is one of the treatments that could help stop pain and other degenerative changes in the musculoskeletal system [1,2].

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 by using a specific treatment for three months. TMJ affects the entire body, particularly the function of the cervical spine, and can occur at any age. TMDs, which are more prevalent in women, were present in over 65% of the women in this study. Landi conducted a study in 2008 that found that after a certain age, hormonal changes are to blame for women's increased dysfunction. Consequently, female gender is a reliable predictor of when physiotherapy will begin. Orofacial pain duration may influence the VAS's estimation of pain intensity, with short-term pain being overestimated and long-term pain being underestimated. TMJ pain and pain in the cervical spine joints influence clinical sign perception and treatment response.

There is evidence that the craniomandibular region and the upper cervical spine are anatomically, biomechanically, and neurophysiologically related. Due to the convergence of the orofacial and cervical regions in the trigeminocervical nucleus, pain in any orofacial structure innervated by the trigeminal nerve is experienced in the upper cervical regions innervated by upper cervical nerves. Upper cervical pain is experienced in any orofacial region innervated by the trigeminal nerve. Before being sent to the superior centers, where it is modulated by descending mechanisms, pain that originates and persists in the orofacial or cervical regions is integrated by the trigeminal cervical nucleus. This causes a shift in the motor activity of the cervical and masticatory muscles. These changes may result in masticatory and cervical dysfunction in TMD patients. This study's findings are in line with the ones presented for TMD and spine pain. The authors discovered a significant degree of comorbidity between these two conditions, implying that they may share risk factors and influence one another.

Orofacial pain causes both local and general functional changes when people take analgesic positions and alter their body posture. Physiotherapists who work with TMD patients need to be able to identify and treat these deficiencies earlier in order to help improve the functioning of the craniocervical system and reduce the vulnerability of the cervical spine. TMD affects the muscles of the mouth and neck. Myalgia in the cervical muscles (sternocleidomastoid, upper trapezius, and splenius of the head and neck) decreased in both groups, with a significant decrease in the physiotherapy group. This finding may also be supported by muscles in the orofacial area: restoring the mandible's physiological functionality through the masseter, temporalis, and internal and external pterygoid. The progression of pain in the cervical and orofacial muscles following manual therapy and physiotherapy was highlighted in other studies [3,4].

TMD can have a negative impact not only on mastication, swallowing, and breathing but also on the amplitude of movement in a number of different areas of the spine (the cervical area in the transverse plane, the thoracic area in the

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sagittal plane, and the lumbar area in the frontal plane), causing changes in both the upper and lower limbs. Balance exercises for TMJs improve dysfunctions and shift the center of gravity, affecting the spine's mobility and limb stability. There is a direct correlation between posture, TMJ movements, and the cervical spine. The functional connections that exist between the two areas must be thoroughly examined [5].

Conclusion

Wänman A and Marklund S, who demonstrated that physiotherapy-treated patients experienced significant improvements in pain and jaw function, concur with the findings. The primary outcomes of physiotherapy were decreased pain and orofacial muscle spasm, increased range of motion, and enhanced local functionality. Physiotherapeutic treatment aims to reduce existing symptoms through general and local treatments based on the type of disorder and its stage. With rehabilitation of these patients being a major concern in recent years, significant progress has been made, resulting in a significant reduction in morbidity. This study demonstrated that physiotherapy treatments for the temporomandibular and cervical areas are effective in the event of an existing condition. The connections between the TMJs and cervical spine are mediated by neuroanatomical and neurophysiological structures. The shared symptomatology is affected by the presence of an illness in one of the two areas. Physiotherapeutic treatments that were administered to both the temporomandibular and cervical levels over the course of three months resulted in a significant reduction in symptoms.

Acknowledgement

None.

Conflict of Interest

The authors declare that there is no conflict of interest associated with this manuscript.

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